



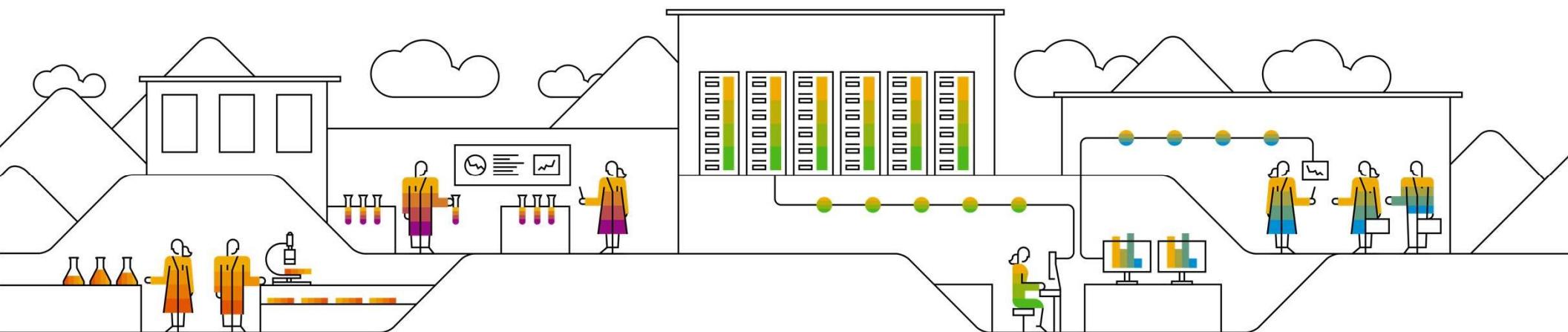
SAP Logistics Business Network, Global Track and Trace Option **SAP ERP Integration**

SAP Business Network
September 2020

PUBLIC

Overview

- A Activate SAP Event Manager Integration**
- B Configuration and Implementation - Basic**
 - B1 IDOC Configuration**
 - B2 Extractor Configuration**
- C Download ABAP Code from GitHub**
- D Configuration and Coding Guide - Advanced**



A) Activate SAP Event Manager Integration

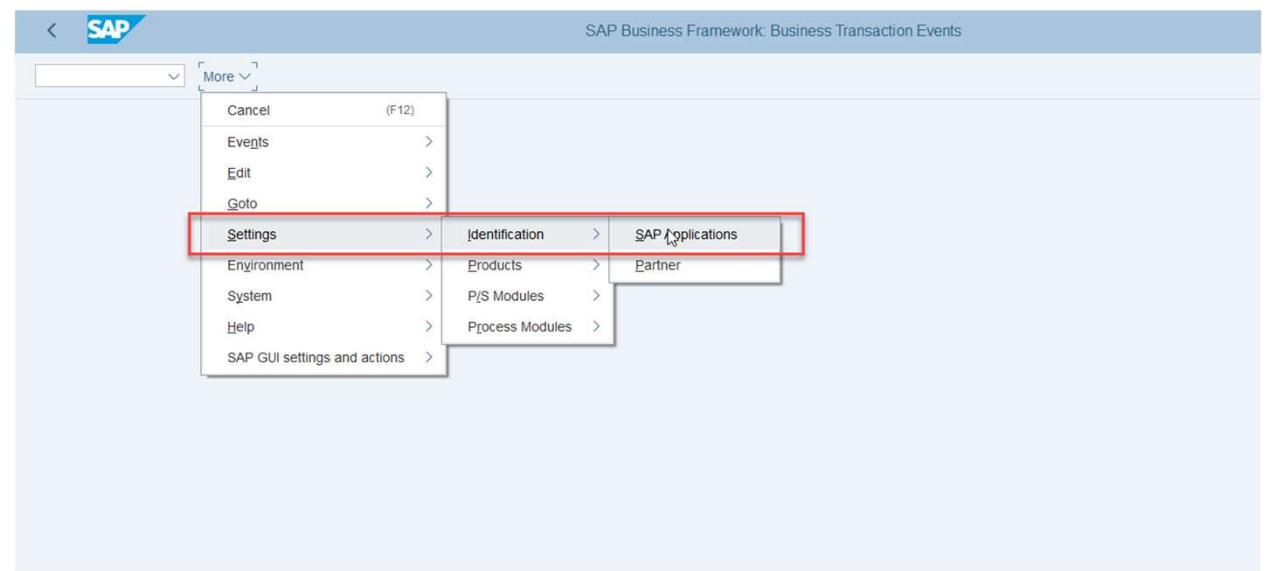


STEP 1: Log on the Development Client to Configure BTE

1-1: Ensure you have development access to the client for cross-client customizing and local development

1-2: Log on to the client and enter transaction code (T-code): **FIBF**

1-3: Click **More -> Settings -> Identification -> SAP Applications**



STEP 2: Activate SAP Event Manager Integration

2-1: Position on the Application ID: PI-EM

2-2: Check the field Application Active

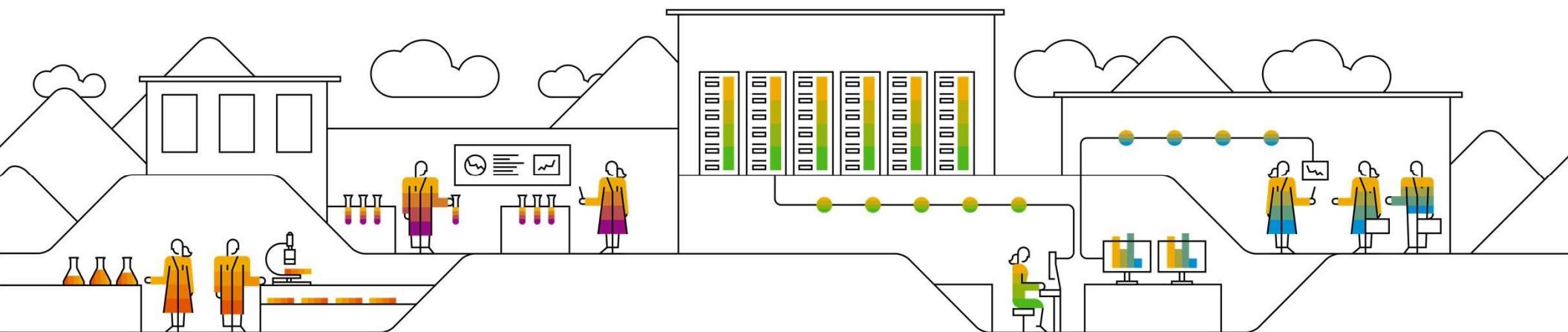
2-3: Click Save

| Change View "BTE Application Indicator": Overview | | |
|---|-------------------------------------|---------------------------------|
| Appl. | A | Text |
| PI-EM | <input checked="" type="checkbox"/> | SAP Event Manager Integration |
| PM | <input checked="" type="checkbox"/> | Instandhaltung |
| PM-BW | <input checked="" type="checkbox"/> | Instandhaltung-BW |
| PM-EQM | <input checked="" type="checkbox"/> | Instandhaltung, Equipment |
| PM-PAM | <input checked="" type="checkbox"/> | Instandhalt. Pool Asset Mgmt |
| PMA-PC | <input checked="" type="checkbox"/> | Product Compliance |
| PMAT | <input checked="" type="checkbox"/> | Produkt - Material |
| PMIPUR | <input type="checkbox"/> | PMI Anschluss Einkauf |
| PPM PUSH | <input type="checkbox"/> | MAM Push |
| PP-BD | <input checked="" type="checkbox"/> | Production Planning MasterData |
| PP-DD | <input checked="" type="checkbox"/> | Demand Driven Replenishment |
| PP-MRP | <input checked="" type="checkbox"/> | Material Requirements Planning |
| PRICAT | <input type="checkbox"/> | Preiskatalog |
| PS-REP | <input checked="" type="checkbox"/> | Projektsystem |
| PSRV | <input checked="" type="checkbox"/> | Produkt - Service |
| QBEXT | <input checked="" type="checkbox"/> | External Inspection Procurement |
| QBEXTP | <input checked="" type="checkbox"/> | External Inspection Production |
| QILPO | <input checked="" type="checkbox"/> | Inspection Lot Order Integr. |
| RDSVFI | <input type="checkbox"/> | Dgtl.Signature Validation FI |
| RDSVMD | <input checked="" type="checkbox"/> | Dgtl.Signature BP Check |

B) Configuration and Implementation

- Basic

B1. IDOC Configuration



STEP 1: Define RFC Connection for GTT

1-1: Log on to the business client

1-2: Enter T-code **SPRO** and then click **SAP Reference IMG** to open **Display IMG** page

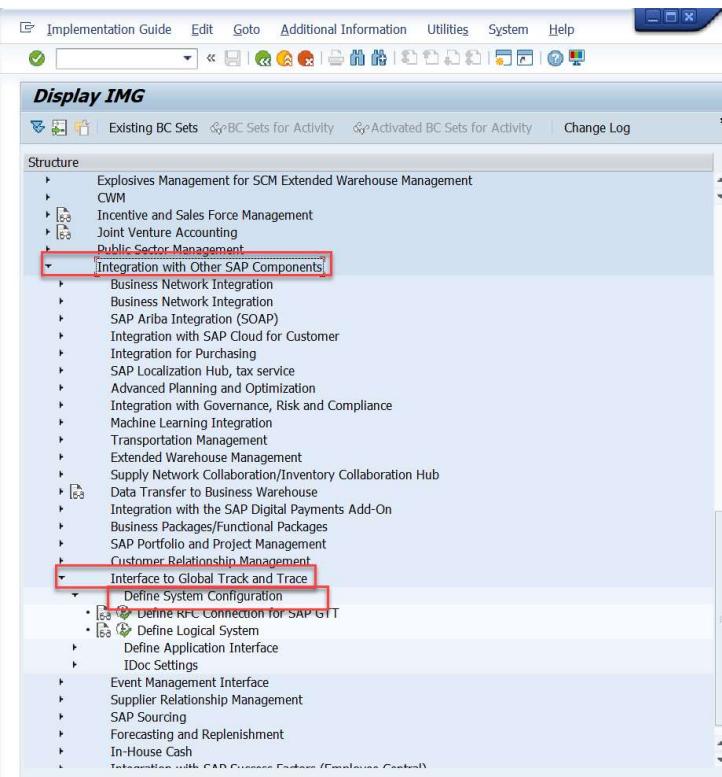
1-3: Click **Integration with Other SAP Components**

-> **Interface to Global Track and Trace**

-> **Define System Configuration**

1-4: Choose activity:

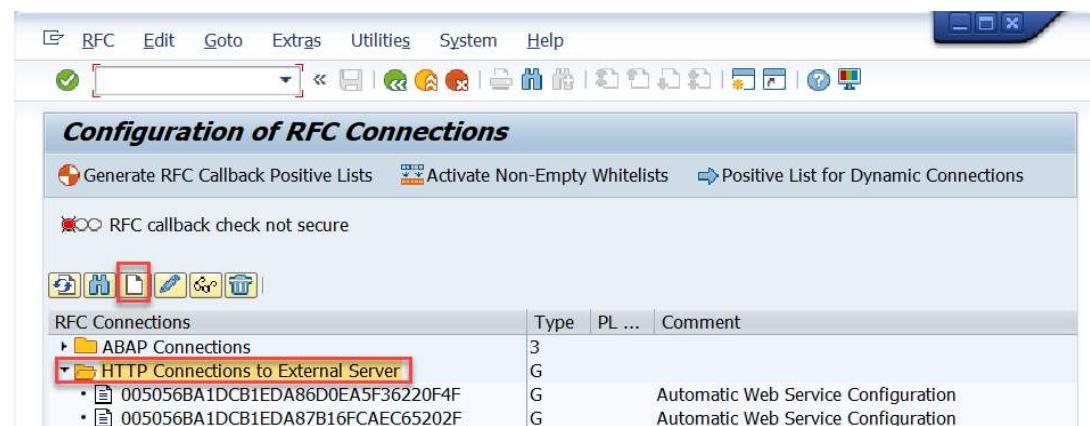
Define RFC Connection for SAP GTT



STEP 1: Define RFC Connection for GTT

1-5: Choose **HTTP Connections to External Server**, click **Create** and create a new RFC connection.

1-6: Fill in the **Destination** and choose the **Connection Type**:
'G-HTTP connection to external server'.



STEP 1: Define RFC Connection for GTT

1-7: Enter a description

1-8: In the **Technical Settings** tab, fill in the **Host, Port and Path Prefix**

For example, the url of solution owners is as below:

<https://sat-so-01.gtt-flp-lbnplatform-pre-live.cfapps.eu10.hana.ondemand.com/>

Host: sat-so-01.gtt-flp-lbnplatform-pre-live.cfapps.eu10.hana.ondemand.com

Port: 443

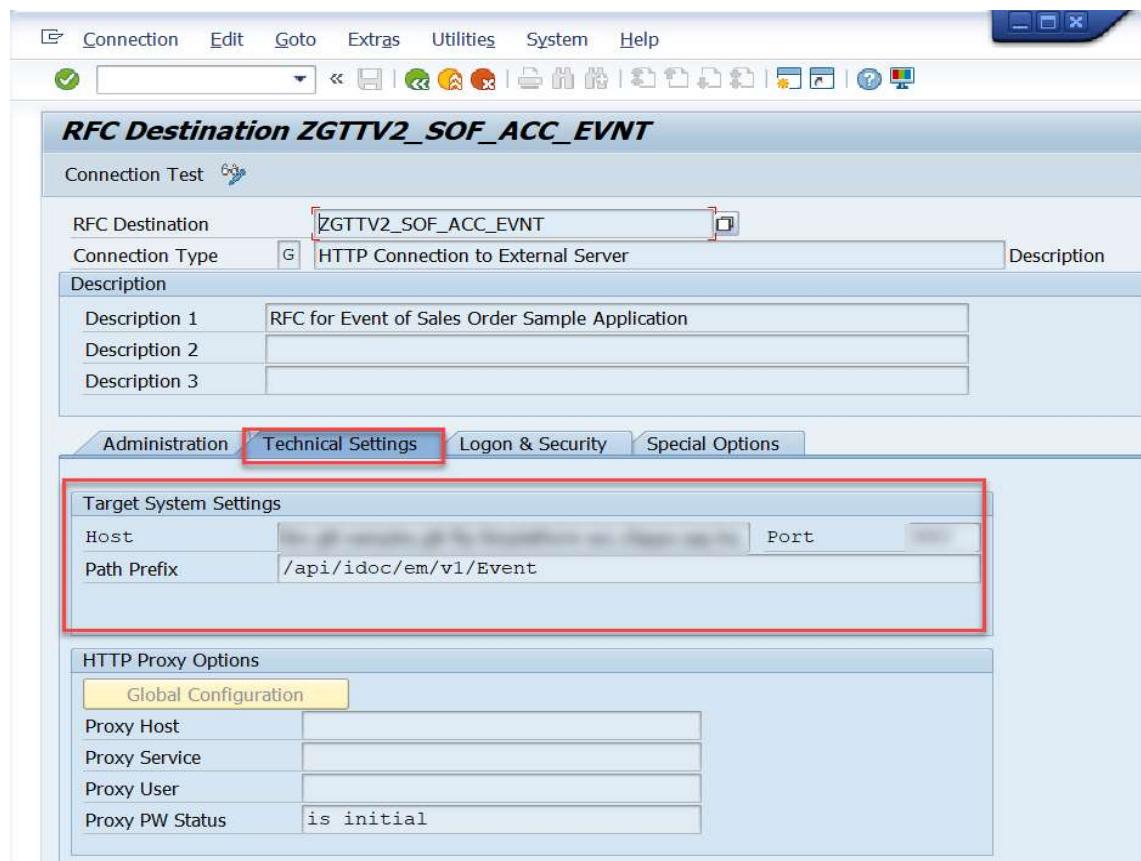
You need to configure two RFC connections separately for event and tracked process. They have different **Path Prefixes**.

For the event:

Path Prefix: /api/idoc/em/v1/Event

For the tracked Process:

Path Prefix: /api/idoc/em/v1/TrackedProcess



STEP 1: Define RFC Connection for GTT

1-9: In the **Logon & Security** tab, enter the Logon information.

For basic authentication, the GTT technical user / password is needed. You can get this from your GTT administrator.

Also, SSL must be *Active*.

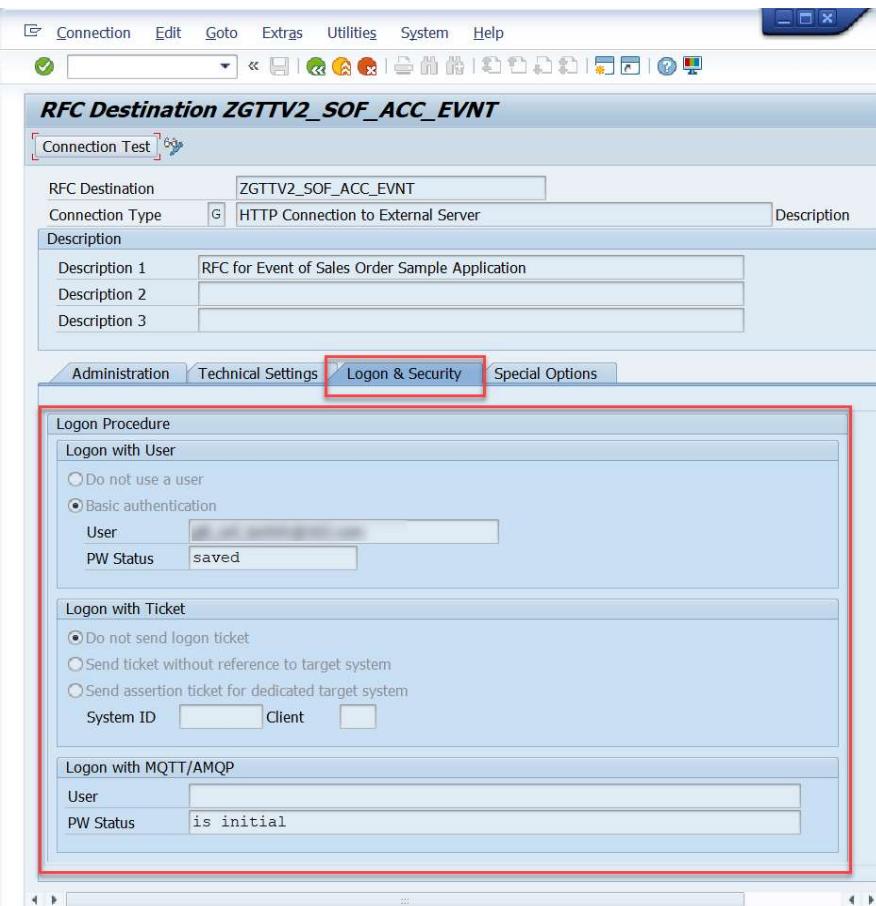
The recommended SSL Certificate is: *DFAULT SSL Client (Standard)*.

1-10: Save the configuration

1-11: Click **Connection Test**. A successful connection returns a status HTTP response of 200.

Caution: You need to configure two RFC Connections:

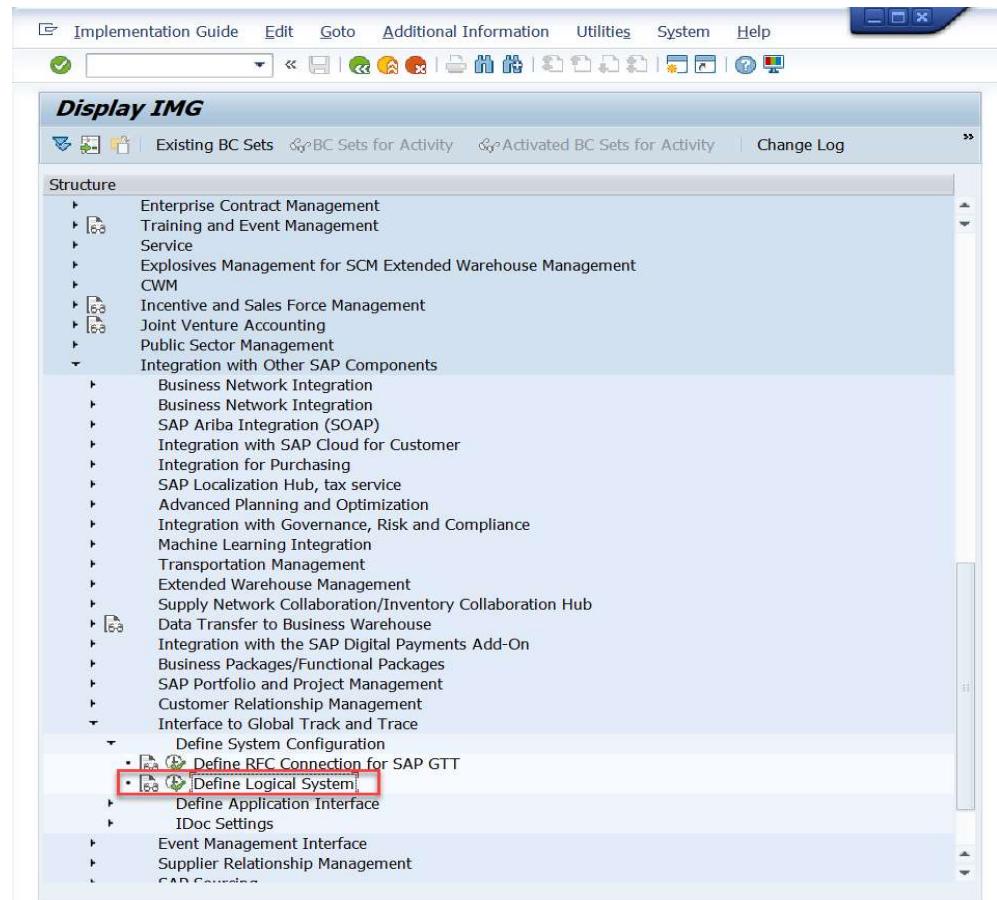
- one for event and
- the other for tracked process.



STEP 2: Define Logical System

2-1: In Display IMG page, click **Integration with Other SAP Components -> Interface to Global Track and Trace -> Define System Configuration.**

2-2: Choose activity **Define Logical System.**

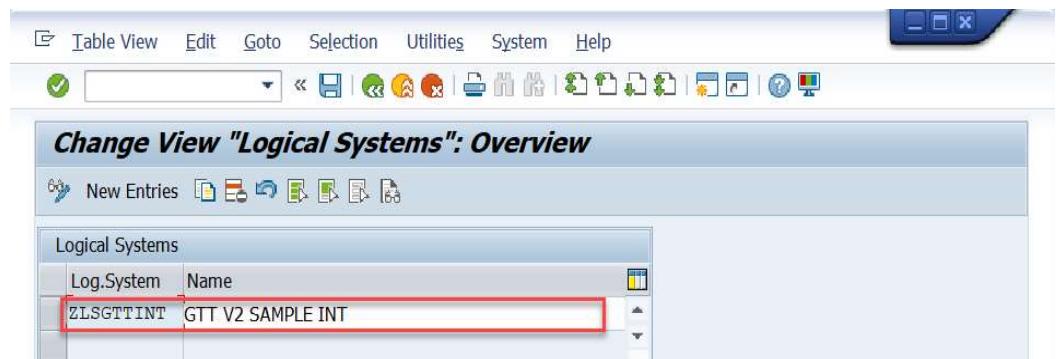


STEP 2: Define Logical System

2-3: Create **New Entries** to create a new Logical System, fill in the:

- Logical system code and
- Name of the new logical system

2-4: Save the configuration



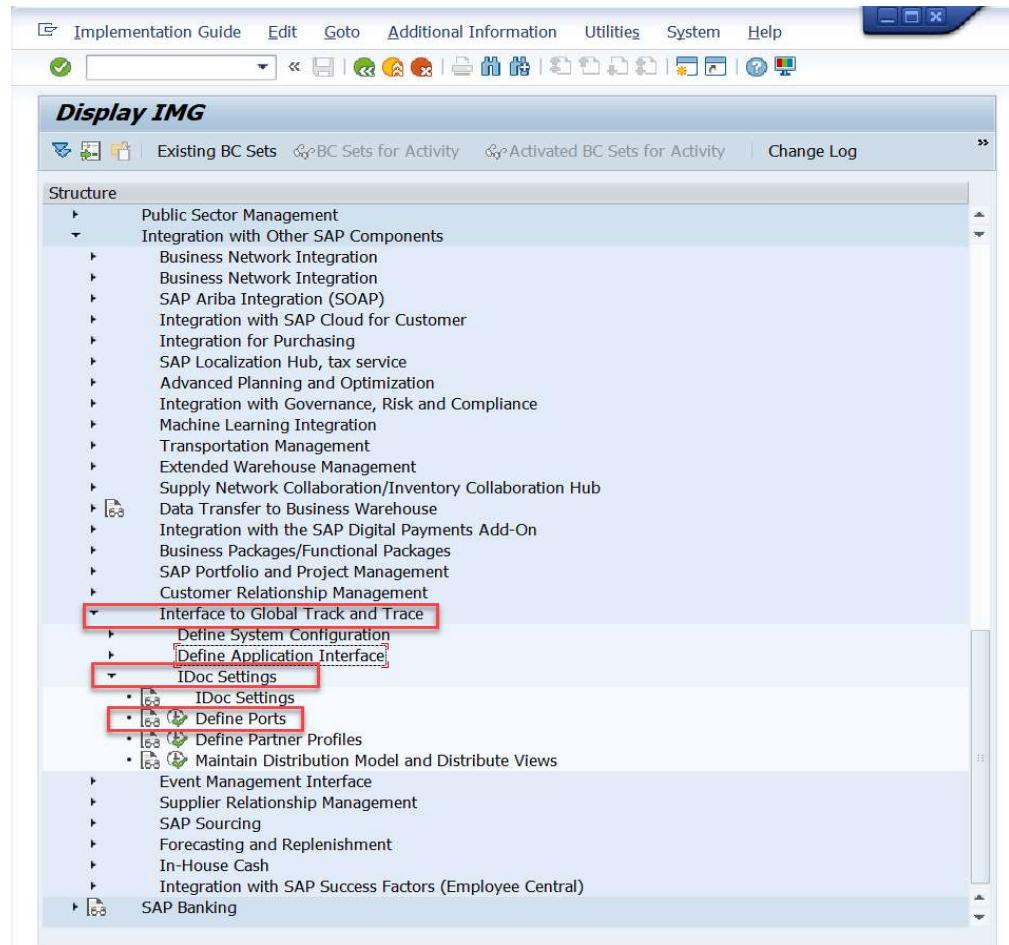
The screenshot shows the SAP Fiori interface for managing logical systems. The title bar reads "Change View 'Logical Systems': Overview". Below the title bar is a toolbar with various icons. The main area contains a table titled "Logical Systems" with two columns: "Log.System" and "Name". A single row is visible, showing "ZLSGTTINT" in the Log.System column and "GTT V2 SAMPLE INT" in the Name column. This row is highlighted with a red border.

| Log.System | Name |
|------------|-------------------|
| ZLSGTTINT | GTT V2 SAMPLE INT |

STEP 3: Define Ports

3-1: In Display IMG page, click
Integration with Other SAP Components ->
Interface to Global Track and Trace ->
IDoc Settings

3-2: Choose activity **Define Ports**



STEP 3: Define Ports

3-3: Choose **XML HTTP** folder, and click **Create** to create a new port

3-4: Fill in the **RFC Destination**, it is the RFC connection you created in STEP 1

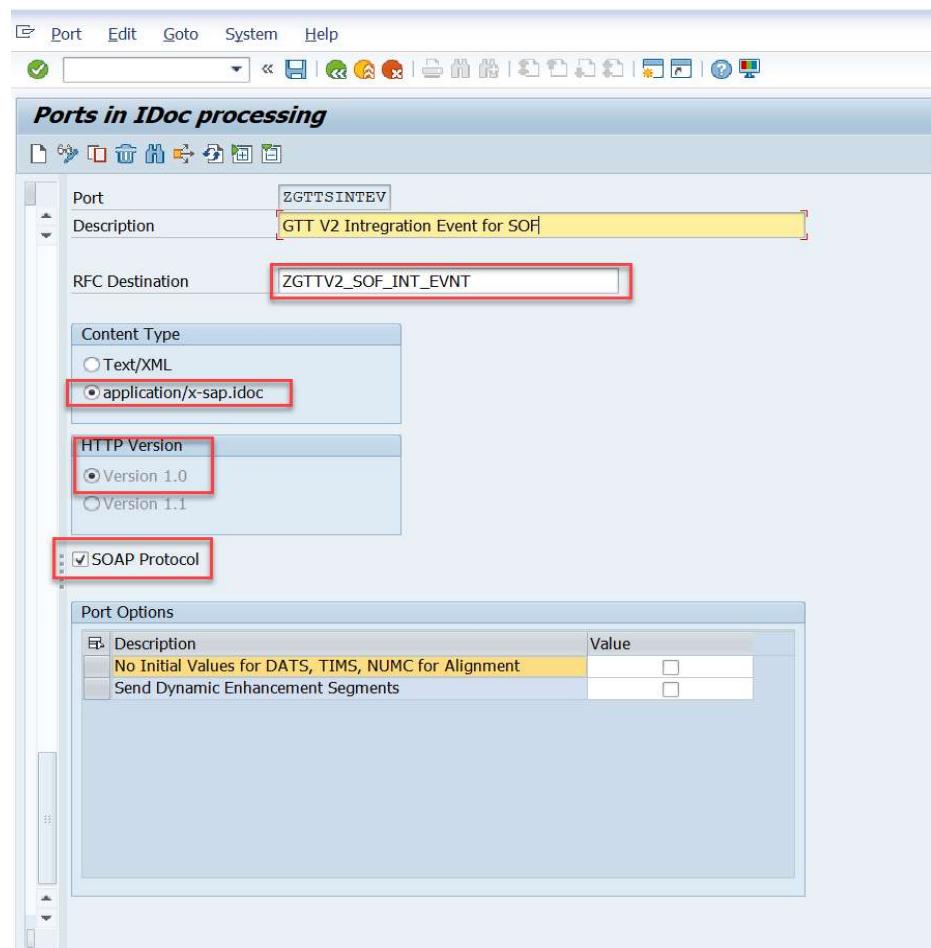
3-5: Choose **Content Type** as *application/x-sap.idoc*

3-6: Choose **HTTP Version** as *Version 1.0*

3-7: Mark it as SOAP Protocol

3-8: Save the configuration

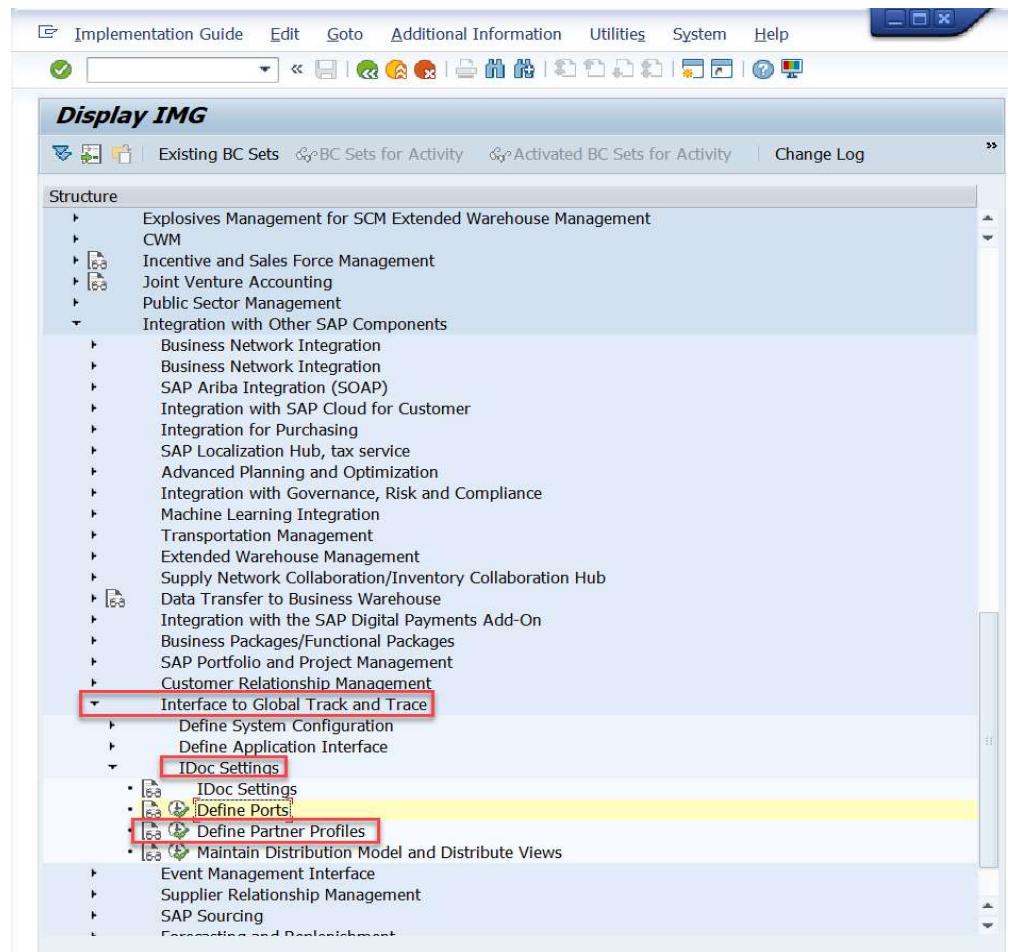
Caution: You need to define two ports, one for event and the other for tracked process.



STEP 4: Define Partner Profiles

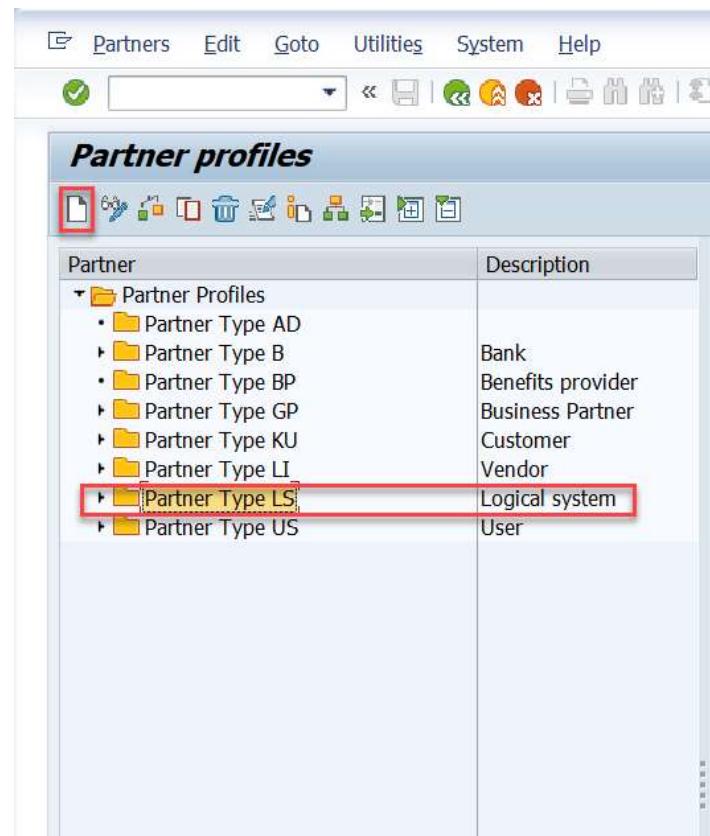
4-1: In Display IMG page, unfold
Integration with Other SAP Components ->
Interface to Global Track and Trace ->
IDoc Settings

4-2: Choose activity **Define Partner Profiles**



STEP 4: Define Partner Profiles

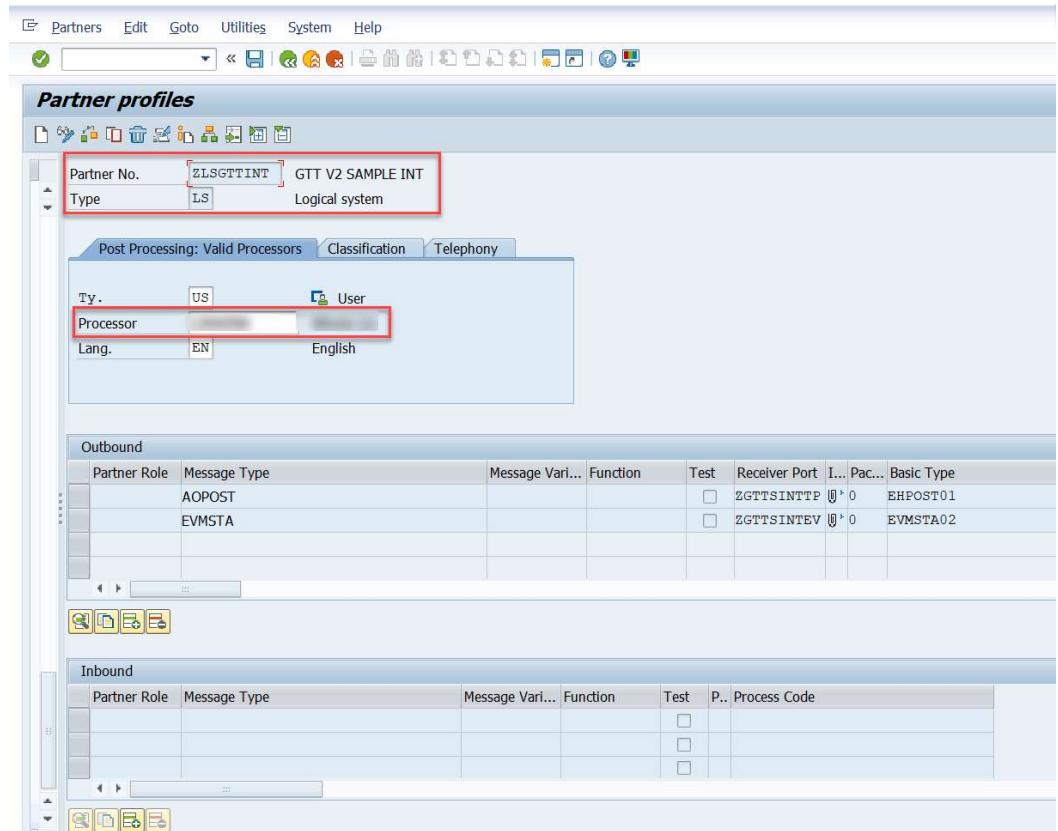
4-3: Choose **Partner Type LS** folder, and click **Create** to create a new partner profile



STEP 4: Define Partner Profiles

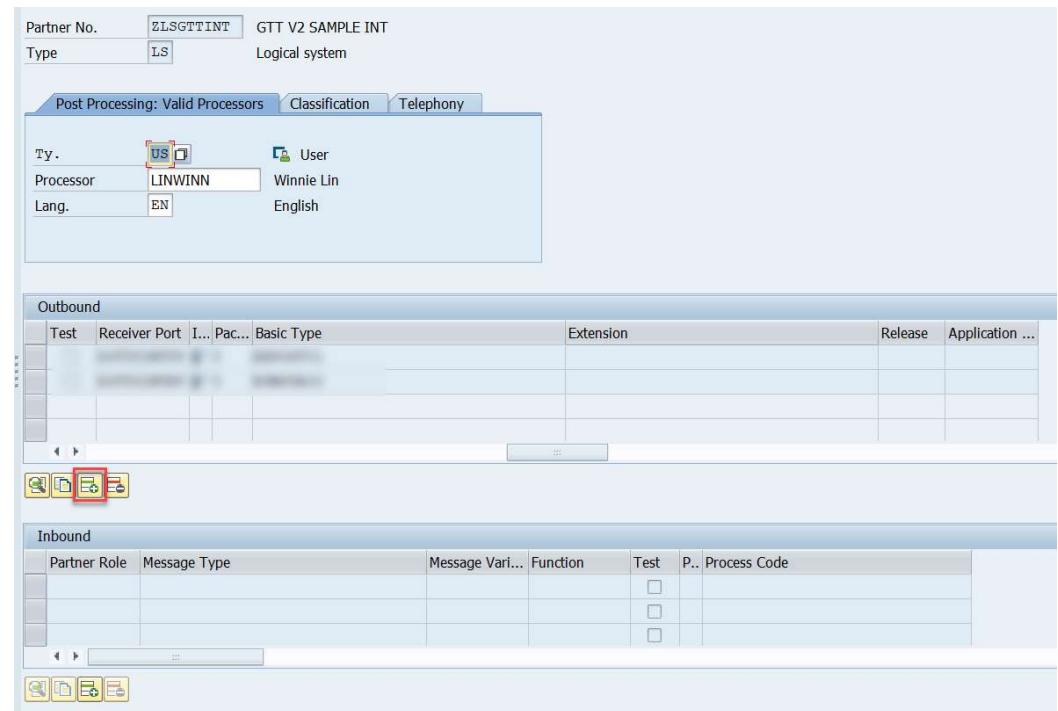
4-4: Fill in the **Partner No.** that you created in STEP 2

4-5: Fill in the **Processor** information



STEP 4: Define Partner Profiles

4-6: Click **Add** under **Outbound** box to create a new outbound parameter



STEP 4: Define Partner Profiles

4-7: Fill in the Message Type.

For the event:

Message Type: EVMSTA

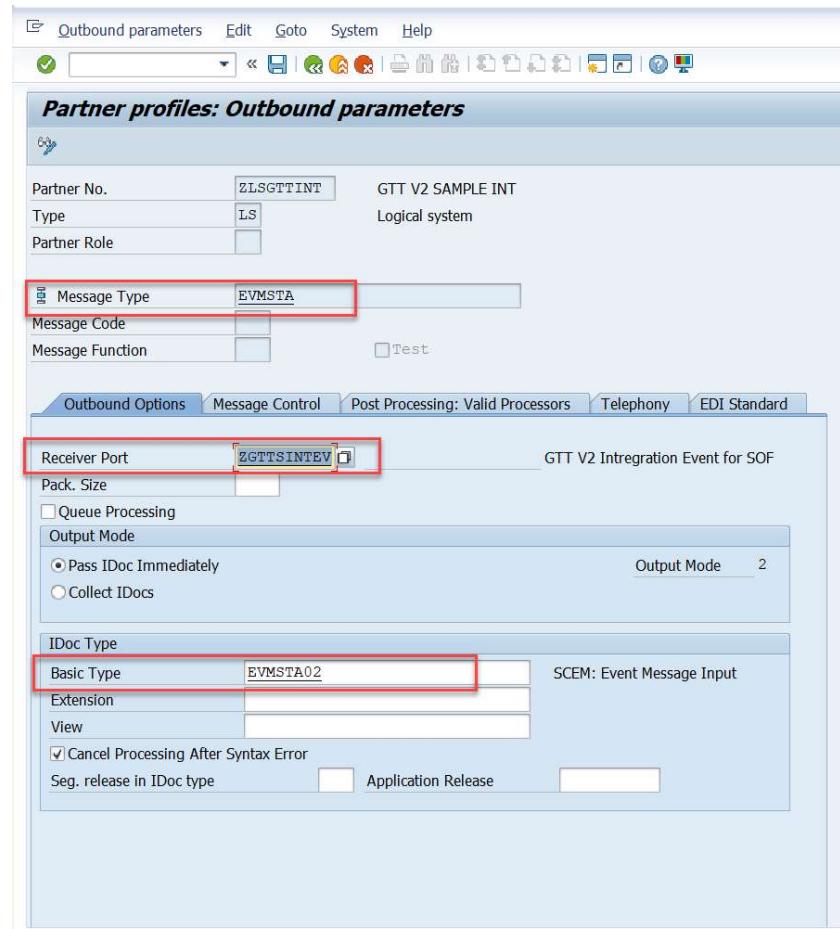
For the tracked Process:

Message Type: AOPOST

4-8: Fill in the Receiver Port, that you created in STEP 3

4-9: Save the configuration

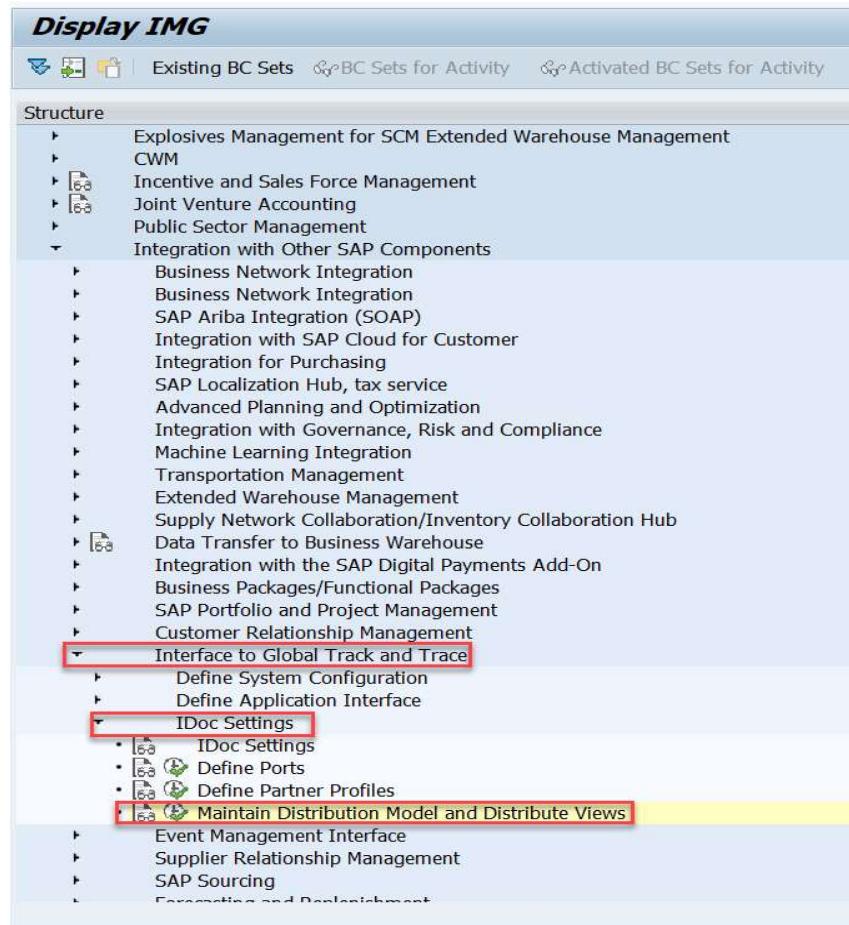
Caution: In this step, you need to repeat steps 4-6 ~ 4-9 to add two outbound parameters, one for event and the other for tracked process.



STEP 5: Maintain Distribution Model and Distribute Views

5-1: In Display IMG page, click
Integration with Other SAP Components ->
Interface to Global Track and Trace ->
IDoc Settings

5-2: Choose activity **Maintain Distribution Model and Distribute Views**



STEP 5: Maintain Distribution Model and Distribute Views

5-3: Click **Edit**, then click **Create Model View** to create a new model view

5-4: Fill in the Short Text and Technical Name of the model view

5-5: Select the new model view and click **Add Message Type** to create a new message

5-6: Fill in the logical systems of Sender and Receiver, and the message type to continue.

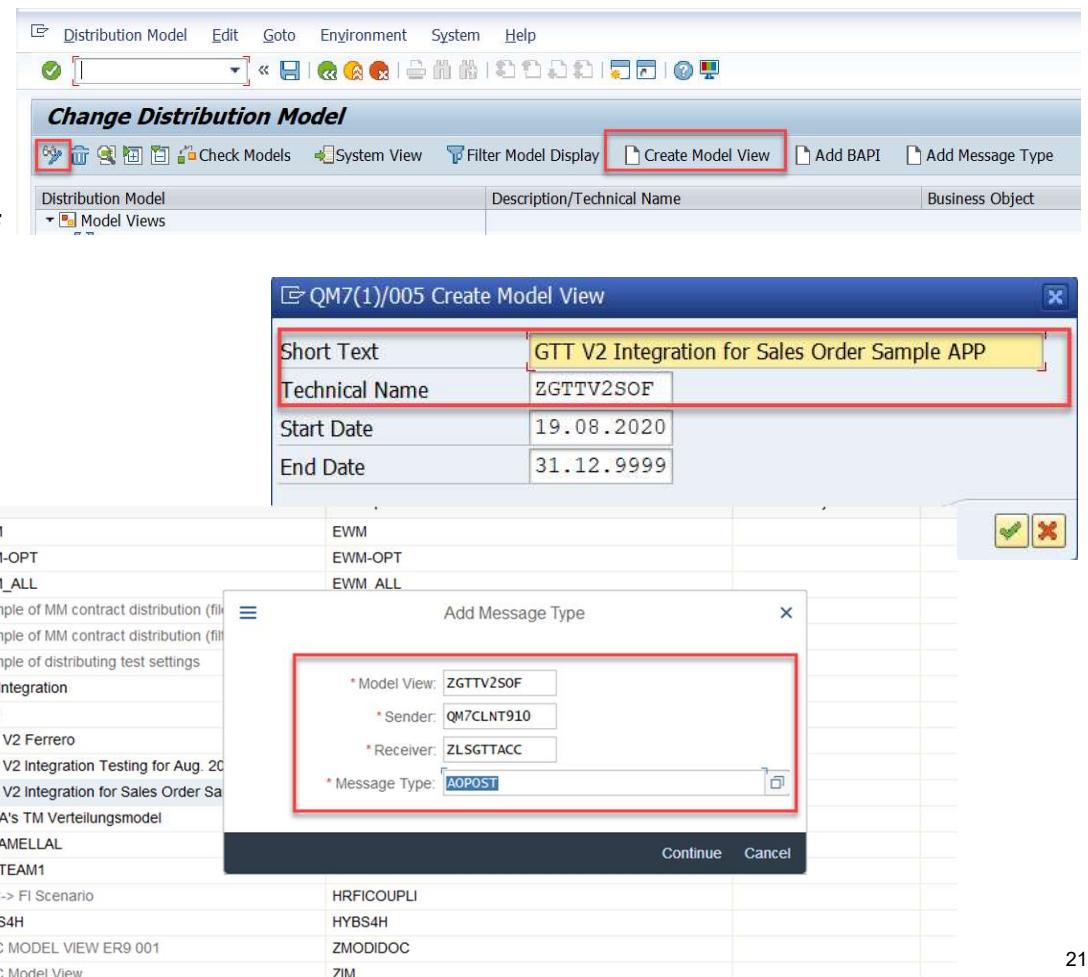
For the event:

Message Type: EVMSTA

For the tracked Process:

Message Type: AOPOST

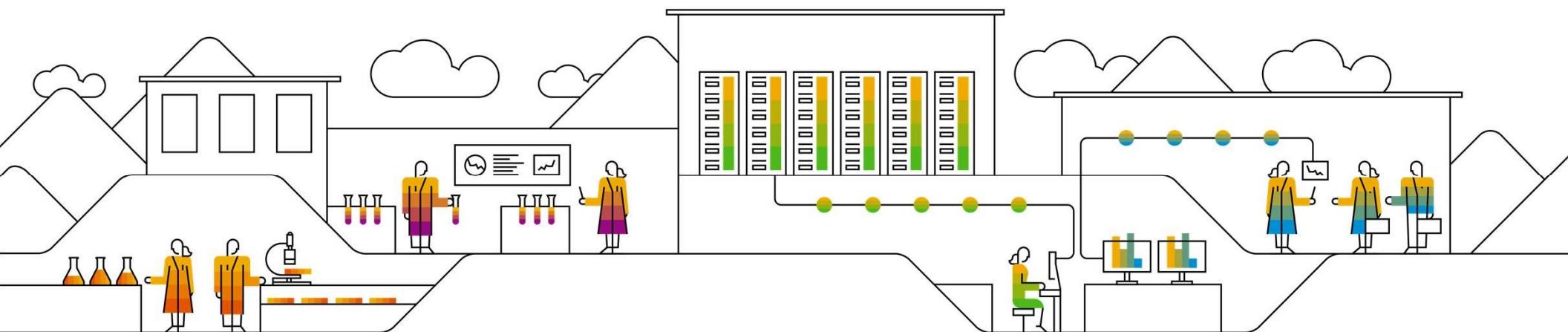
5-7: Save the configuration



B) Configuration and Implementation

- Basic

B2. Extractor Configuration



STEP 6: Define CI Tenant for GTT

6-1: In Display IMG page, click
Integration with Other SAP Components ->
Interface to Global Track and Trace ->
Define Application Interface

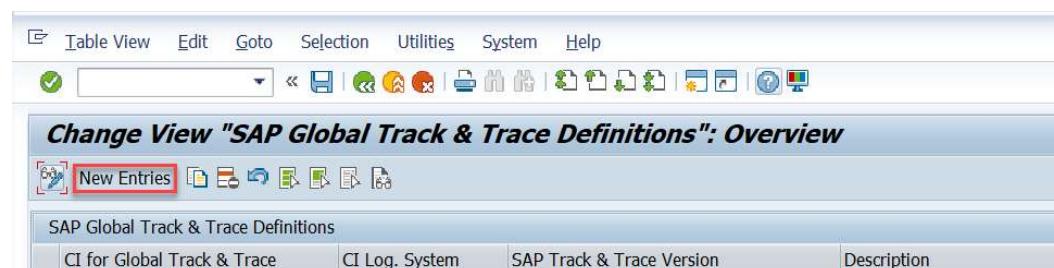
6-2: Choose activity
Define CI Tenant for SAP GTT



STEP 6: Define CI Tenant for GTT

6-3: Click **New Entries** to create a new CI tenant for GTT

6-4: Fill in the information for the new CI tenant. The **CI Log. System** is the logical system you created in STEP 2.



The screenshot shows the SAP Global Track & Trace Definitions overview screen with a new entry being created. The title bar reads "Change View 'SAP Global Track & Trace Definitions': Overview". Below the title bar is a toolbar with various icons. The "New Entries" button is highlighted with a red box. The main area displays a table with columns: CI for Global Track & Trace, CI Log. System, SAP Track & Trace Version, and Description. A new row is being edited, with the "CI for Global Track & Trace" field containing "ZGTTSOFINT", the "CI Log. System" field containing "ZLSGTTINT", the "SAP Track & Trace Version" field containing "Global Track & Trace", and the "Description" field containing "CI For GTT V2 Integration system Sales Order Sample APP".

| SAP Global Track & Trace Definitions | | | |
|--------------------------------------|----------------|---------------------------|---|
| CI for Global Track & Trace | CI Log. System | SAP Track & Trace Version | Description |
| ZGTTSOFINT | ZLSGTTINT | Global Track & Trace | CI For GTT V2 Integration system Sales Order Sample APP |

STEP 7: Define GTT Extraction Functions

7-1: In Display IMG page, click
Integration with Other SAP Components ->
Interface to Global Track and Trace ->
Define Application Interface

7-2: Choose activity
Define SAP GTT Extraction Functions

The screenshot shows the SAP Display IMG interface. The top navigation bar includes links for Existing BC Sets, BC Sets for Activity, Activated BC Sets for Activity, and Change Log. The main area is titled 'Display IMG' and features a tree view under 'Structure'. The path selected is: Public Sector Management > Integration with Other SAP Components > Interface to Global Track and Trace > Define Application Interface > Define SAP GTT Extraction Functions. The final step, 'Define SAP GTT Extraction Functions', is highlighted with a red box.

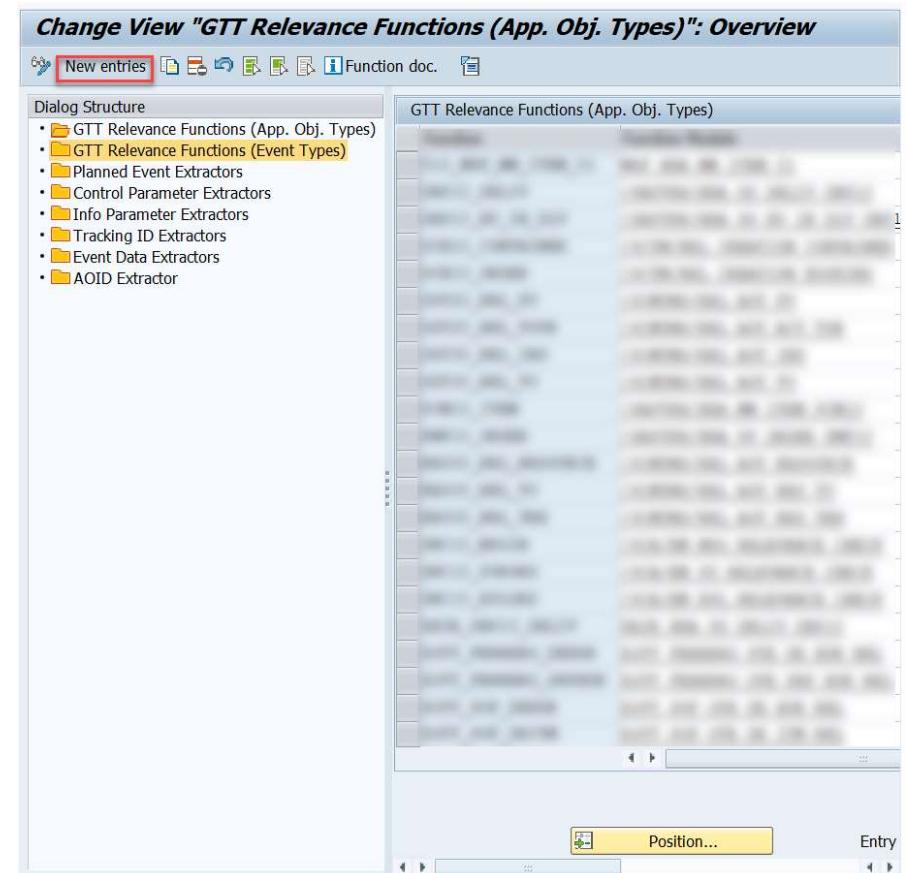
- Existing BC Sets
- BC Sets for Activity
- Activated BC Sets for Activity
- Change Log

Structure

- Public Sector Management
 - Integration with Other SAP Components
 - Business Network Integration
 - Business Network Integration
 - SAP Ariba Integration (SOAP)
 - Integration with SAP Cloud for Customer
 - Integration for Purchasing
 - SAP Localization Hub, tax service
 - Advanced Planning and Optimization
 - Integration with Governance, Risk and Compliance
 - Machine Learning Integration
 - Transportation Management
 - Extended Warehouse Management
 - Supply Network Collaboration/Inventory Collaboration Hub
 - Data Transfer to Business Warehouse
 - Integration with the SAP Digital Payments Add-On
 - Business Packages/Functional Packages
 - SAP Portfolio and Project Management
 - Customer Relationship Management
 - Interface to Global Track and Trace
 - Define System Configuration
 - Define Application Interface
 - Define CI Tenant for SAP GTT
 - Define Business Process Types
 - Define Used Business Process Types, Appl. Object Types and Event Types
 - Define SAP GTT Extraction Functions
 - IDoc Settings
 - Event Management Interface
 - Supplier Relationship Management
 - SAP Sourcing
 - Forecasting and Replenishment
 - In-House Cash
 - Integration with SAP Success Factors (Employee Central)
 - SAP Banking

STEP 7: Define GTT Extraction Functions

7-3: Choose the type of Extraction Function you want to create from the **Dialog Structure**, and click **New entries**



STEP 7: Define GTT Extraction Functions

7-4: Input the **Function name** and **Function Module** for the newly created extraction function

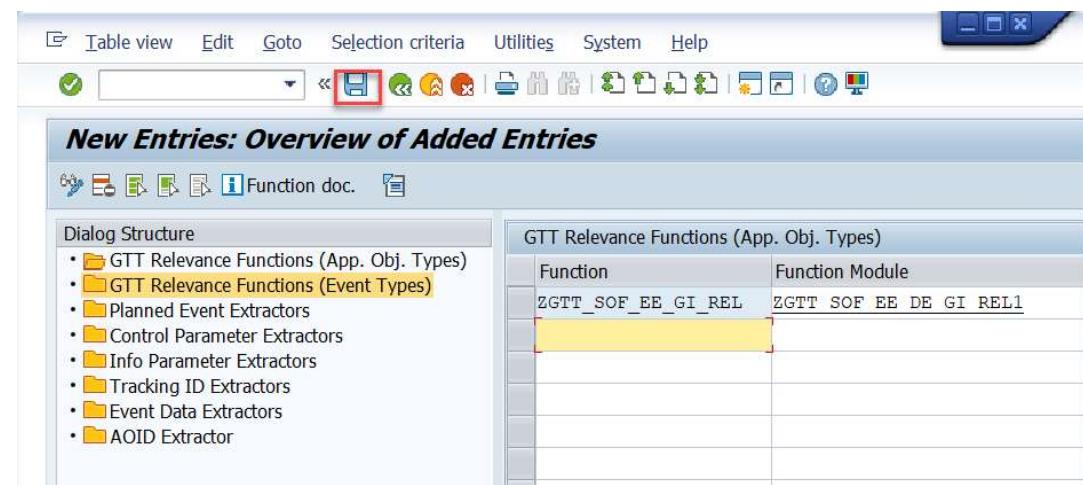
The screenshot shows the SAP GUI interface for defining new entries. The title bar reads "New Entries: Overview of Added Entries". Below the title bar are several icons: a magnifying glass, a folder, a document, a clipboard, a function module icon, and a help icon. To the right of these icons is the text "Function doc." and a small help icon.

The main area is divided into two sections:

- Dialog Structure:** A list of categories:
 - GTT Relevance Functions (App. Obj. Types)
 - GTT Relevance Functions (Event Types) (highlighted in yellow)
 - Planned Event Extractors
 - Control Parameter Extractors
 - Info Parameter Extractors
 - Tracking ID Extractors
 - Event Data Extractors
 - AOID Extractor
- GTT Relevance Functions (App. Obj. Types):** A table with columns "Function" and "Function Module". One row is highlighted with a red border, showing "ZGTT_SOF_EE_GI_REL" in the Function column and "ZGTT SOF EE DE GI REL1" in the Function Module column.

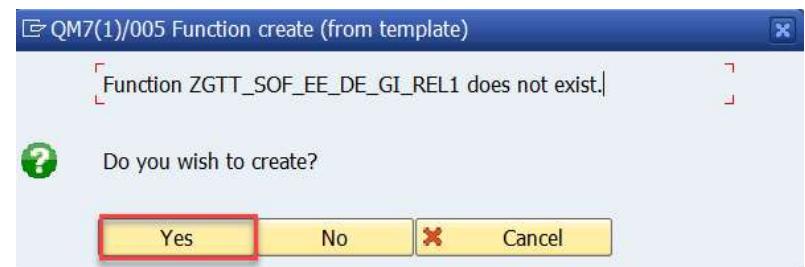
STEP 7: Define GTT Extraction Functions

7-5: Click Save



STEP 7: Define GTT Extraction Functions

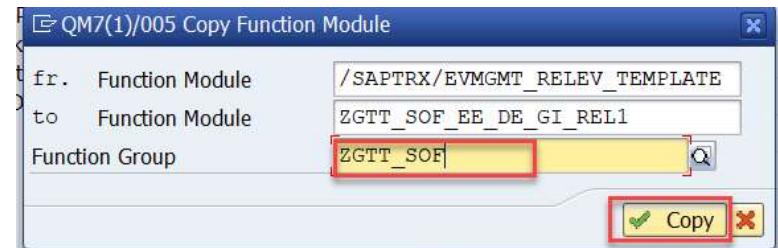
7-6: If the function module you use to create the extraction function has not been created yet, then a dialog reminds you to create the function module. Click **Yes** in the dialog box.



STEP 7: Define GTT Extraction Functions

7-7: Input the **Function Group** where the function module is to be created

7-8: Click **Copy**



STEP 7: Define GTT Extraction Functions

7-9: Use T-Code SE80 to check the function module you just created

Caution: More information on how to implement extraction functions and the relevant sample code is introduced later.

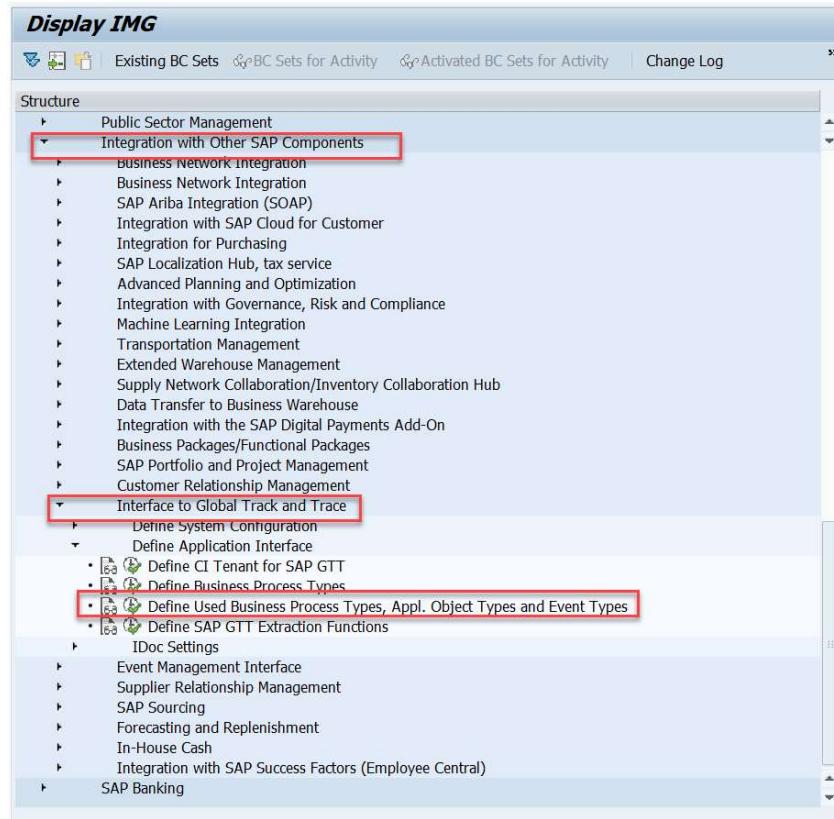
The screenshot shows the SAP Function Builder interface with the title "Function Builder: Display ZGTT_SOF_EE_DE_GI_REL1". The function module "ZGTT_SOF_EE_DE_GI_REL1" is selected in the "Function Module" tab. The code editor displays the ABAP source code for the function module:

```
1 FUNCTION ZGTT_SOF_EE_DE_GI_REL1.
2   * Local Interface:
3   *  IMPORTING
4   *    REFERENCE(I_APPSYS) TYPE /SAPTRX/APPLSYSTEM
5   *    REFERENCE(I_APP_OBJ_TYPES) TYPE /SAPTRX/AOTYPES
6   *    REFERENCE(I_ALL_APFL_TABLES) TYPE TRXAS_TABCONTAINER
7   *    REFERENCE(I_APPTYPE_TAB) TYPE TRXAS_APPTYPE_TABS_WA
8   *    REFERENCE(I_APP_OBJECT) TYPE TRXAS_APPOBJ_CTAB_WA
9   *  EXPORTING
10  *    VALUE(B_RESULT) LIKE SY-BINPT
11  *  TABLES
12  *    C_LOGTABLE STRUCTURE BAPIRET2 OPTIONAL
13  *  EXCEPTIONS
14  *    PARAMETER_ERROR
15  *    RELEVANCE_DETERM_ERROR
16  *    STOP_PROCESSING
17  *
18  *
19  * Top Include
20  * TYPE-POOLG:trxas.
21  *
22  *
23  *
24  *
25  *
26  ENDFUNCTION.
```

The code editor also shows the scope as "FUNCTION ZGTT_SOF_EE_DE_GI_REL1" and the status as "ABAP". The bottom right corner indicates "Ln 13 Col 48".

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

- 8-1: In Display IMG page, click
Integration with Other SAP Components ->
Interface to Global Track and Trace ->
Define Application Interface
- 8-2: Choose activity **Define Used Business Process Types, Appl. Object Types and Event Types**



STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

You can create event types and application object types for each business process type.

In the following:

- Steps 8-3 to 8-10 demonstrate how to create an *Event Type* for a given business process type
- Steps 8-11 to 8-21 demonstrate how to create an *Application Object Type* for a given business process type

| Change View "Define Used Business Process Types": Overview | | |
|--|-----------------|-----------------|
| Dialog Structure | | |
| Define Used Business Process Types | | |
| Bus. Proc. Type | Update Mode | BPT Process Mod |
| EPL_NOTIF | Update Task ... | Active |
| ESC_DELIV | Update Task ... | Active |
| ESC_FI_CLEARING | Update Task ... | Active |
| ESC_MATDOC | Update Task ... | Active |
| ESC_MM_INVOICE | Update Task ... | Active |
| ESC_PURORD | Update Task ... | Active |
| ESC_PURORD_FASHION | Update Task ... | Active |
| ESC_SHIPMT | Update Task ... | Active |
| ESC_SORDER | Update Task ... | Active |
| ESC_WRKORD | Update Task ... | Active |
| OCB10_ORDER | Dialog Update | Active |
| SNC_MSGIN | Dialog Update | Active |
| SNC_PURORD | Dialog Update | Active |
| SNC_RPLORD | Dialog Update | Active |
| TMS_INS | Update Task ... | Active |
| TMS_RES | Update Task ... | Active |
| TMS_TOR | Update Task ... | Active |

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-3: Choose the business process type from the **Define Used Business Process Types** on the right side

8-4: Double click **Define Event Types**

| Change View "Define Used Business Process Types": Overview | | | |
|--|-------------------------|--|-------------|
| Bus. Proc. Type | Update Mode | BPT Process Mode | Description |
| EPL_NOTIF | Update Task .. ▾ Active | ▼ Notification in SAP R/3 Enterprise | |
| ESC_DELIV | Update Task .. ▾ Active | ▼ Delivery in SAP R/3 Enterprise | |
| ESC_FI_CLEARING | Update Task .. ▾ Active | ▼ FI Clearing in SAP R/3 Enterprise | |
| ESC_MATDOC | Update Task .. ▾ Active | ▼ Material Document in SAP R/3 Enterprise | |
| ESC_MM_INVOICE | Update Task .. ▾ Active | ▼ MM Invoice in SAP R/3 Enterprise | |
| ESC_PURORD | Update Task .. ▾ Active | ▼ Purchase Order in SAP R/3 Enterprise | |
| ESC_PURORD_FASHION | Update Task .. ▾ Active | ▼ Purchase Order (Seasonal Procurement) in SAP R/3 Enterprise | |
| ESC_SHIPMT | Update Task .. ▾ Active | ▼ Shipment (SAP R/3 Enterprise) | |
| ESC_SORDER | Update Task .. ▾ Active | ▼ Sales Order in SAP R/3 Enterprise | |
| ESC_WRKORD | Update Task .. ▾ Active | ▼ Workorder (Production, Service, Maintenance) in SAP R/3 Enterprise | |
| OCB10_ORDER | Dialog Update ▾ Active | ▼ Booking Order in Ocean Carrier Booking Process | |
| SNC_MSGIN | Dialog Update ▾ Active | ▼ SNC Inbound messages | |
| SNC_PURORD | Dialog Update ▾ Active | ▼ SNC Purchase Order | |
| SNC_RPLORD | Dialog Update ▾ Active | ▼ SNC Replenishment Order | |
| TMS_INS | Update Task .. ▾ Active | ▼ Instructions (SAP TM) | |
| TMS_RES | Update Task .. ▾ Active | ▼ Resources (SAP TM) | |
| TMS_TOR | Update Task .. ▾ Active | ▼ Transportation Order (SAP TM) | |

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-5: Click **New Entries** to create a new event type

| Change View "Define Event Types": Overview | | |
|--|----------------------|--|
| New Entries | | |
| Dialog Structure | | |
| <ul style="list-style-type: none">-> Define Used Business Process Types<ul style="list-style-type: none">• Define Application Object Types• Define Event Types | | |
| Business Process Type | Event Type | Description |
| ESC_SHIPMT | GTT_ARRIVAL_ACC_SO | Arrival Event for GTT Sample SO Acceptance System |
| ESC_SHIPMT | GTT_ARRIVAL_INT_SO | Arrival Event for GTT Sample so Integration System |
| ESC_SHIPMT | GTT_CHIN_ACC_SO | Check In Event for GTT Sample So Acceptance System |
| ESC_SHIPMT | GTT_CHIN_INT_SO | Check In Event for GTT Sample SO Integration System |
| ESC_SHIPMT | GTT_DEPART_ACC_SO | Departure Event for GTT Sample So Acceptance System |
| ESC_SHIPMT | GTT_DEPART_INT_SO | Departure Event for GTT Sample So Integration System |
| ESC_SHIPMT | GTT_LDED_ACC_SO | Loading End Event for GTT Sample SO Acceptance System |
| ESC_SHIPMT | GTT_LDED_INT_SO | Loading End Event for GTT Sample SO Integration System |
| ESC_SHIPMT | GTT_LDST_ACC_SO | Loading Start Event for GTT Sample SO Acceptance System |
| ESC_SHIPMT | GTT_LDST_INT_SO | Loading Start Event for GTT Sample SO Integration System |
| ESC_SHIPMT | TRA10_ROAD | Road Shipment for Transportation Visibility |
| ESC_SHIPMT | YSHIPMENT_ACC | Road Shipment for Transportation Visibility |
| ESC_SHIPMT | YSHIPMENT_INT | Road Shipment for Transportation Visibility |
| ESC_SHIPMT | ZGTT_SOF_ARRIVAL_ACC | Arrival Event for GTT SOF Acceptance System |
| ESC_SHIPMT | ZGTT_SOF_ARRIVAL_INT | Arrival Event for GTT SOF Integration System |
| ESC_SHIPMT | ZGTT_SOF_CHIN_ACC | Check In Event for GTT SOF Acceptance System |
| ESC_SHIPMT | ZGTT_SOF_CHIN_INT | Check In Event for GTT SOF Integration System |
| ESC_SHIPMT | ZGTT_SOF_DEPART_ACC | Departure Event for GTT SOF Acceptance System |
| ESC_SHIPMT | ZGTT_SOF_DEPART_INT | Departure Event for GTT SOF Integration System |
| ESC_SHIPMT | ZGTT_SOF_LDED_ACC | Loading End Event for GTT SOF Acceptance System |
| ESC_SHIPMT | ZGTT_SOF_LDED_INT | Loading End Event for GTT SOF Integration System |
| ESC_SHIPMT | ZGTT_SOF_LDST_ACC | Loading Start Event for GTT SOF Acceptance System |

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-6: Fill in the **Event Type** and **Text** fields

8-7: Fill in the information required in the **General Data** tab. **HCI for GTT** is the CI Tenant you created in STEP 6. **Event Function** is the extractor function you created in STEP 7.

8-8: Check **GTT Relevant**

| | |
|-----------------|-------------------|
| Bus. Proc. Type | ESC_SHIPMT |
| Event Type | ZGTT_SOF_CHIN_INT |
| Text | Check In Event |

General Data Control Tables Global Track & Trace Relevance

Sequencing / Destination

| | |
|-------------|-----------|
| Seq. No. | 10 |
| HCI for GTT | ZGTTSOFIN |

Data Setup

| | |
|----------------|--------------------|
| Event Function | ZGTT_SOF_EVNT_CHIN |
|----------------|--------------------|

Behavior

| |
|--|
| <input checked="" type="checkbox"/> GTT Relevant |
| <input type="checkbox"/> Stop ET Def. |
| <input type="checkbox"/> Appl. Log Deact |

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-9: Fill in the Main Object Table and Master Table.

Caution:

If the event type or application object type is on header level, then you only need to assign the **Main Object Table**. Otherwise, if the event type or application object type is on item level, then you need to assign the **Main Object Table** and **Master Table**, and assign the reference between the **Main Object Table** and **Master Table**.

| | | | | |
|---|---------------------|------------|-------------------|---|
| Bus. Proc. Type | ESC_SHIPMT | Event Type | ZGTT_SOF_CHIN_INT | Check In Event for GTT SOF Integration System |
| Text | Check In Event | | | |
| <input checked="" type="radio"/> General Data <input type="radio"/> Control Tables <input type="radio"/> Global Track & Trace Relevance | | | | |
| Data Source for Events | | | | |
| Main Obj. Table | SHIPMENT_HEADER_NEW | | | |
| Master Table | | | | |
| Old Main Obj. Table | SHIPMENT_HEADER_OLD | | | |
| Old Master Table | | | | |
| Reference Between Main and Master Table | | | | |
| First Field Reference from Main to Master Table | | | | |
| Second Field Reference from Main to Master Table | | | | |

Event on Header Level

| | | | | |
|---|---------------------|--------------|----------------------|---------------------------------------|
| Bus. Proc. Type | ESC_DELIV | Event Type | ZGTT_SOF_PICKING_ACC | Picking for GTT SOF Acceptance System |
| Text | Picking Event | | | |
| <input checked="" type="radio"/> General Data <input type="radio"/> Control Tables <input type="radio"/> Global Track & Trace Relevance | | | | |
| Data Source for Events | | | | |
| Main Obj. Table | DELIVERY_ITEM_NEW | | | |
| Master Table | DELIVERY_HEADER_NEW | | | |
| Old Main Obj. Table | DELIVERY_ITEM_OLD | | | |
| Old Master Table | DELIVERY_HEADER_OLD | | | |
| Reference Between Main and Master Table | | | | |
| First Field Reference from Main to Master Table | | | | |
| Uplink Field | VBELN | Uplink Mode | R | |
| Uplink Target Fld | VBELN | Uplink Const | | |
| Second Field Reference from Main to Master Table | | | | |
| Uplink Field | | Uplink Mode | | |
| Uplink Target Fld | | Uplink Const | | |

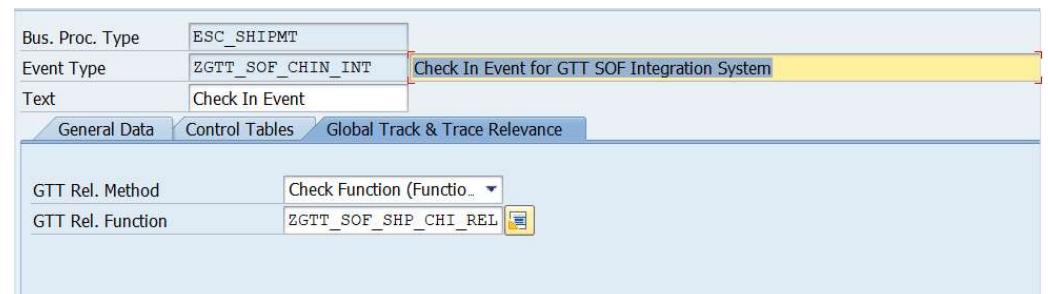
Event on Item Level

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-10: In the **Global Track & Trace Relevance** tab, choose the **GTT Relevance Method** you need.

If you choose the **GTT Relevance Method Check Function**, then you need to define a relevance function according to STEP 7, and fill in the relevance function name here.

Click **Save**.



STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

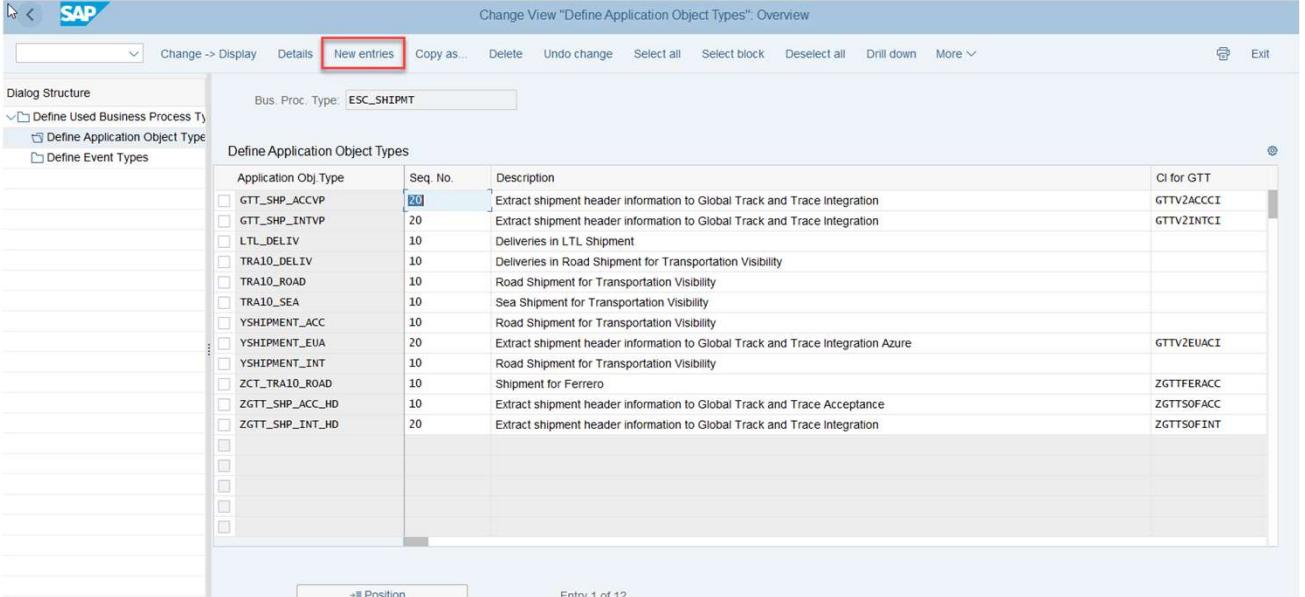
8-11: Choose the business process type from the **Define Used Business Process Types** on the right side

8-12: Double click **Define Application Object Types**

| Bus. Proc. Type | Update Mode | BPT Process Mode | Description |
|--------------------|------------------|------------------|--|
| EPL_NOTIF | Update Task (V_) | Active | Notification in SAP R/3 Enterprise |
| ESC_DELIV | Update Task (V_) | Active | Delivery in SAP R/3 Enterprise |
| ESC_FI_CLEARING | Update Task (V_) | Active | FI Clearing in SAP R/3 Enterprise |
| ESC_MATDOC | Update Task (V_) | Active | Material Document in SAP R/3 Enterprise |
| ESC_MM_INVOICE | Update Task (V_) | Active | MM Invoice in SAP R/3 Enterprise |
| ESC_PURORD | Update Task (V_) | Active | Purchase Order in SAP R/3 Enterprise |
| ESC_PURORD_FASHION | Update Task (V_) | Active | Purchase Order (Seasonal Procurement) in SAP R/3 Enterprise 2.0 |
| ESC_SHIPMT | Update Task (V_) | Active | Shipment (SAP R/3 Enterprise) |
| ESC_SURDER | Update Task (V_) | Active | Sales Order in SAP R/3 Enterprise |
| ESC_WRKORD | Update Task (V_) | Active | Workorder (Production, Service, Maintenance) in SAP R/3 Enterprise |
| OCB10_ORDER | D Dialog Update | Active | Booking Order in Ocean Carrier Booking Process |
| SNC_MSGIN | D Dialog Update | Active | SNC Inbound messages |
| SNC_PURORD | D Dialog Update | Active | SNC Purchase Order |
| SNC_RPLORD | D Dialog Update | Active | SNC Replenishment Order |
| TMS_INS | Update Task (V_) | Active | Instructions (SAP TM) |
| TMS_RES | Update Task (V_) | Active | Resources (SAP TM) |
| TMS_TOR | Update Task (V_) | Active | Transportation Order (SAP TM) |

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-13: Click **New Entries** to create a new Application Object Type



The screenshot shows the SAP Fiori interface for defining application object types. The title bar reads "Change View 'Define Application Object Types'. Overview". The toolbar includes buttons for Change > Display, Details, New entries (which is highlighted with a red box), Copy as..., Delete, Undo change, Select all, Select block, Deselect all, Drill down, More, and Exit.

The left sidebar shows the "Dialog Structure" with sections: Define Used Business Process T, Define Application Object Type (which is expanded), and Define Event Types. The "Bus. Proc. Type:" field is set to "ESC_SHIPMT".

The main area is titled "Define Application Object Types" and contains a table with the following data:

| Application Obj Type | Seq. No. | Description | CI for GTT |
|----------------------|----------|---|-------------|
| GTT_SHP_ACCVP | 20 | Extract shipment header information to Global Track and Trace Integration | GTTV2ACCCI |
| GTT_SHP_INTPV | 20 | Extract shipment header information to Global Track and Trace Integration | GTTV2INTCI |
| LTL_DELIV | 10 | Deliveries in LTL Shipment | |
| TRA10_DELIV | 10 | Deliveries in Road Shipment for Transportation Visibility | |
| TRA10_ROAD | 10 | Road Shipment for Transportation Visibility | |
| TRA10_SEA | 10 | Sea Shipment for Transportation Visibility | |
| YSHIPMENT_ACC | 10 | Road Shipment for Transportation Visibility | |
| YSHIPMENT_EUA | 20 | Extract shipment header information to Global Track and Trace Integration Azure | GTTV2EUACI |
| YSHIPMENT_INT | 10 | Road Shipment for Transportation Visibility | |
| ZCT_TRA10_ROAD | 10 | Shipment for Ferrero | ZGTTFERACC |
| ZGTT_SHP_ACC_HD | 10 | Extract shipment header information to Global Track and Trace Acceptance | ZGTTSOFACC |
| ZGTT_SHP_INT_HD | 20 | Extract shipment header information to Global Track and Trace Integration | ZGTTSOFINTE |

At the bottom, there are buttons for "Position..." and "Entry 1 of 12".

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-14: Fill in the **Application Object Type** and **Text** fields

8-15: Fill in the information required in the **General Data** tab. **CI for GTT** is the CI Tenant you created in STEP 6.

8-16: Check **GTT Relevant**

Change View "Define Application Object Types": Details

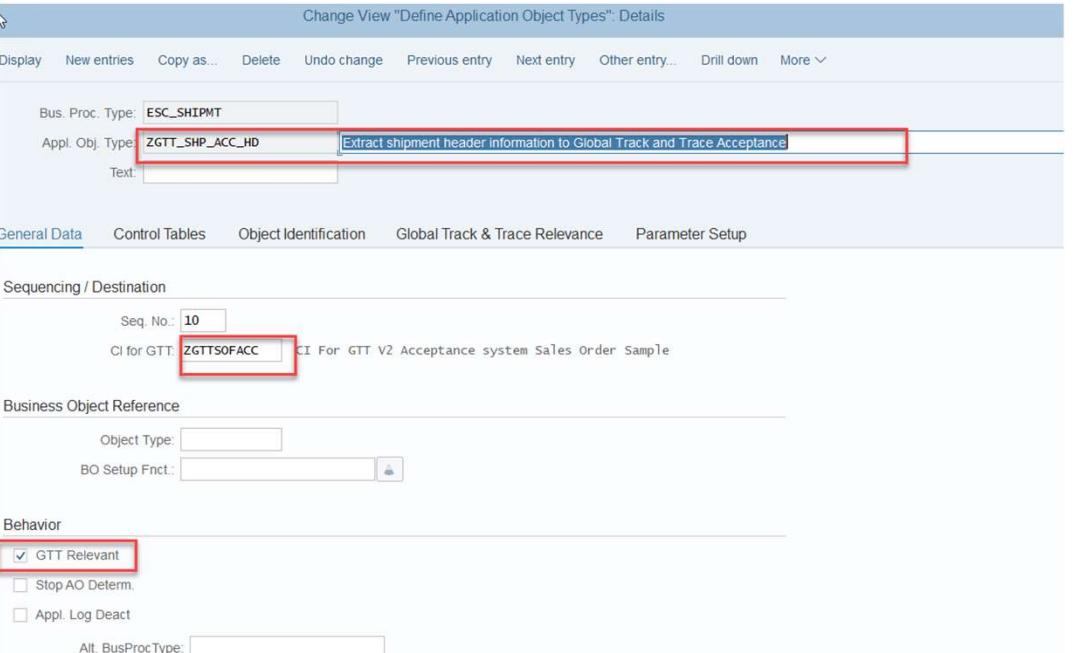
Bus. Proc. Type: ESC_SHIPMT
Appl. Obj. Type: ZGTT_SHP_ACC_HD Extract shipment header information to Global Track and Trace Acceptance
Text:

General Data Control Tables Object Identification Global Track & Trace Relevance Parameter Setup

Sequencing / Destination
Seq. No.: 10
CI for GTT: ZGTTSOFACC CI For GTT V2 Acceptance system Sales Order Sample

Business Object Reference
Object Type:
BO Setup Fnct.:

Behavior
 GTT Relevant
 Stop AO Determ.
 Appl. Log Deact
Alt. BusProcType:



STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-17: Fill in the Main Object table and Master Table

Caution:

If the event type or application object type is on header level, then you only need to assign the **Main Object Table**. Otherwise, if the event type or application object type is on item level, then you need to assign the **Main Object Table** and **Master Table**, and assign the reference between the **Main Object Table** and **Master Table**.

The screenshots illustrate the configuration of application object types in SAP. In the first screenshot, for an event type (ESC_SHIPMT), the Main Obj. Table is assigned as SHIPMENT_HEADER_NEW. In the second screenshot, for an event type (ESC_DELIV), both the Main Obj. Table (DELIVERY_ITEM_NEW) and the Master Table (DELIVERY_HEADER_NEW) are assigned, and the uplink reference between them is configured.

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-18: If there is no customized logic to determine the AOT ID, choose **Determine from Field**, use the key field to fill the AO ID fields

8-19: When choosing **Determine by Function**, you must enter the customized information in the AOID function field.

Change View "Define Application Object Types": Details

Display New entries Copy as... Delete Undo change Previous entry Next entry Other entry... Drill down More ▾

Bus. Proc. Type: ESC_DELIV
Appl. Obj. Type: ZGTT_DE_ACC_ITEM Extract sales order item information to Global Track and Trace Acceptance
Text: Delivery Item

General Data Control Tables Object Identification Global Track & Trace Relevance Parameter Setup

Method for determination of AOID

AOID Method:

Application Object ID Source

First Field to Build Appl. Obj. ID
Cntrl Tab. Type:
AO ID Field:

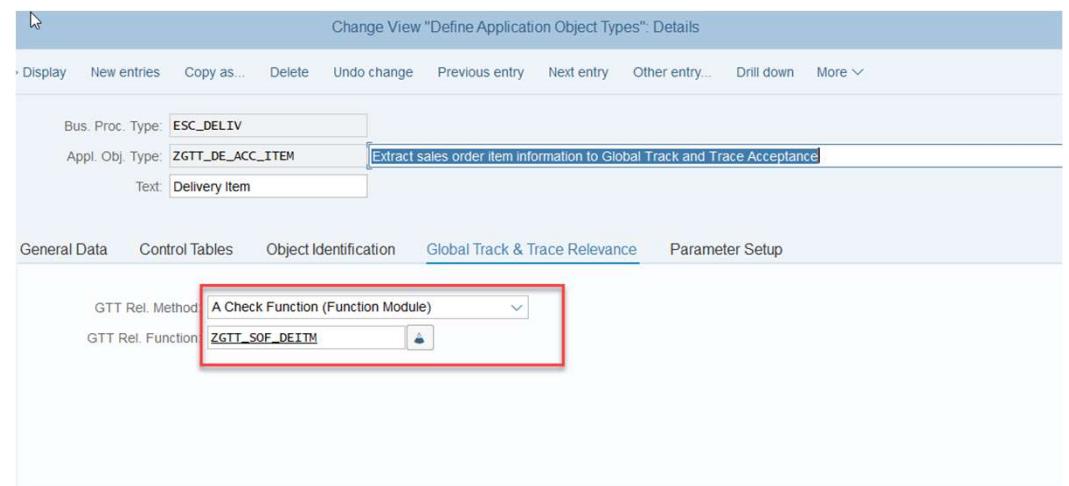
Second Field to Build Appl. Obj. ID
Cntrl Tab. Type:
AO ID Field:

Determine AOID By Function
AOID Function:

STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

8-20: In the **Global Track & Trace Relevance** tab, choose the **GTT Relevance Method** you need.

If you choose the **GTT Relevance Method Check Function**, then you need to define a relevance function according to STEP 7, and fill in the relevance function name here.



STEP 8: Define Used Business Process Types, Appl. Object Types and Event Types

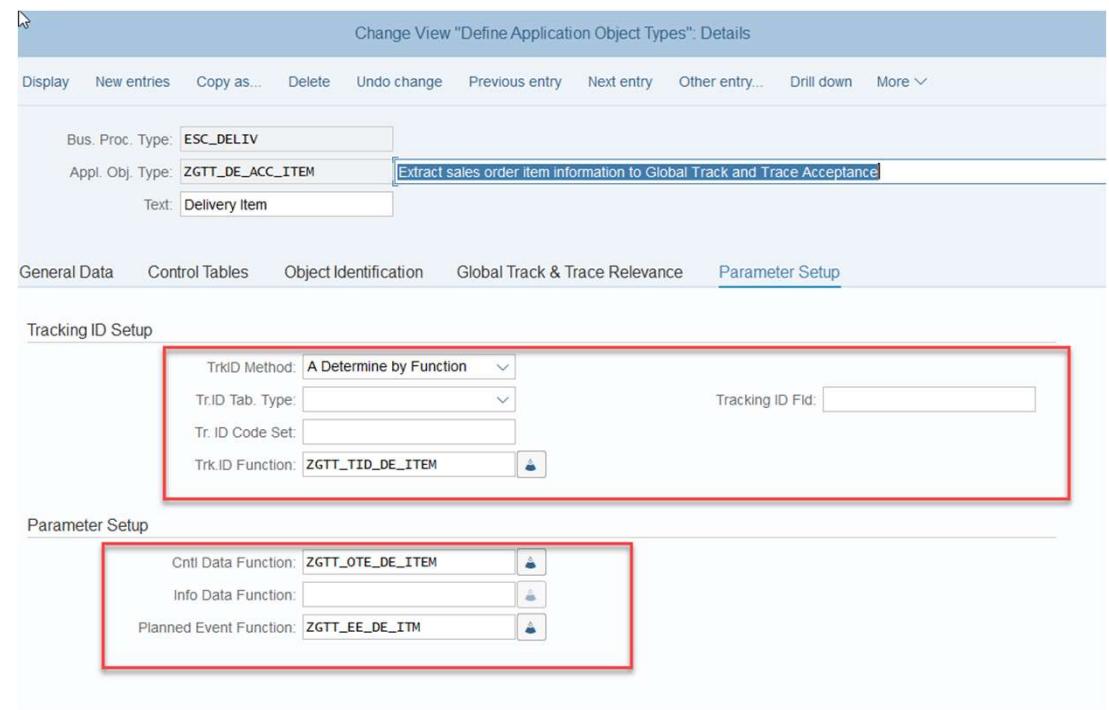
8-21: In the **Parameter Setup** tab, choose the **TrkID Method** as you need.

If you choose the **TrkID Method** as *Determine by Function*, then you need to define a tracking ID function according to STEP 7, and fill in the relevance function name here.

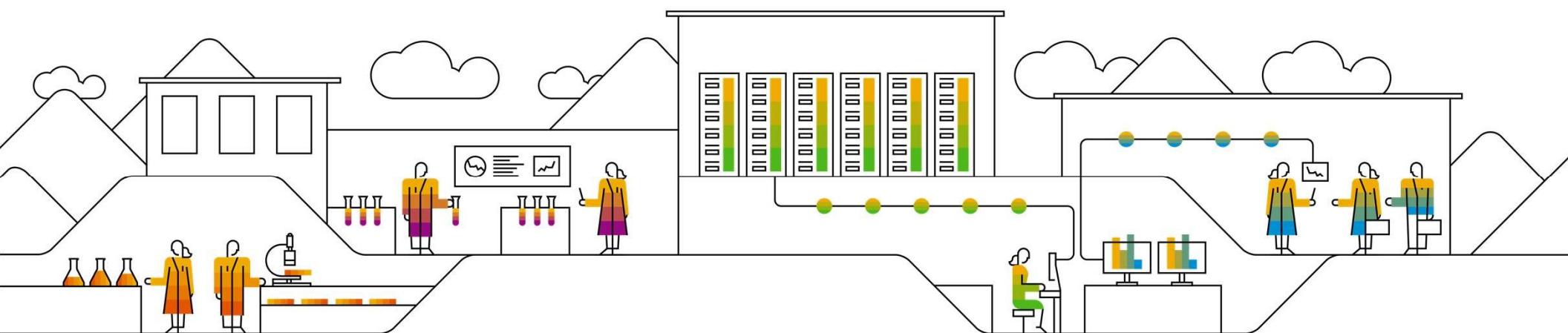
If no customized logic exists, for **TrkID Method** choose *Determine from Field*, then you need to fill the key field and name the Code Set for the AOT.

Fill in the extractor functions for **Control Data, Info Data(optional), Planned Event**.

Click **Save**.



C) Download ABAP Code from GitHub



STEP 1: Install abapGit

You need to install abapGit before downloading codes from GitHub.

To install abapGit, follow the instructions on <https://docs.abapgit.org/guide-install.html>.

Make sure you **Install the standalone version** in your dev system.

When installation is complete, a new report is created, **ZABAPGIT_STANDALONE**.

The screenshot shows the abapGit documentation page. The main navigation bar at the top has a red diamond icon followed by the text "abapGit" and "documentation". Below the navigation, there's a sidebar with links to "Getting Started", "Setup", "Online Projects", "Offline Projects", and "Reference". The main content area starts with the "Installation" section, which includes a "Summary" link and a note about the two available versions: "standalone" and "developer". A red box highlights the "Install standalone version" section, which contains a numbered list of steps for creating a report named "ZABAPGIT_STANDALONE". Below this, there's a note about the typical usage in a development system and a final note about executing the report in transaction "SE38".

abapGit exists in 2 flavours: *standalone* version or *developer* version.

- The *standalone* version is targeted at users. It consist of one (huge) program which contains all the needed code. You run the *standalone* version in transaction `SE38`, executing the program you created.
- The *developer* version is targeted at developers contributing to the abapGit codebase. It consists of all the ABAP programs/classes/interfaces/etc. of the abapGit project. You run the *developer* version with transaction `ZABAPGIT`.

Prerequisites #

abapGit requires SAP BASIS version 702 or higher.

Install standalone version #

- Download the ABAP code(right click -> save-as) to a file.
- Via `SE38` or `SE80`, create a new report named `ZABAPGIT_STANDALONE` (formerly `ZABAPGIT_FULL`). NB: Don't use the name `ZABAPGIT` if you plan to install the developer version.
- In source code change mode, upload the code from the file using Utilities -> More Utilities -> Upload/Download -> Upload
- Activate

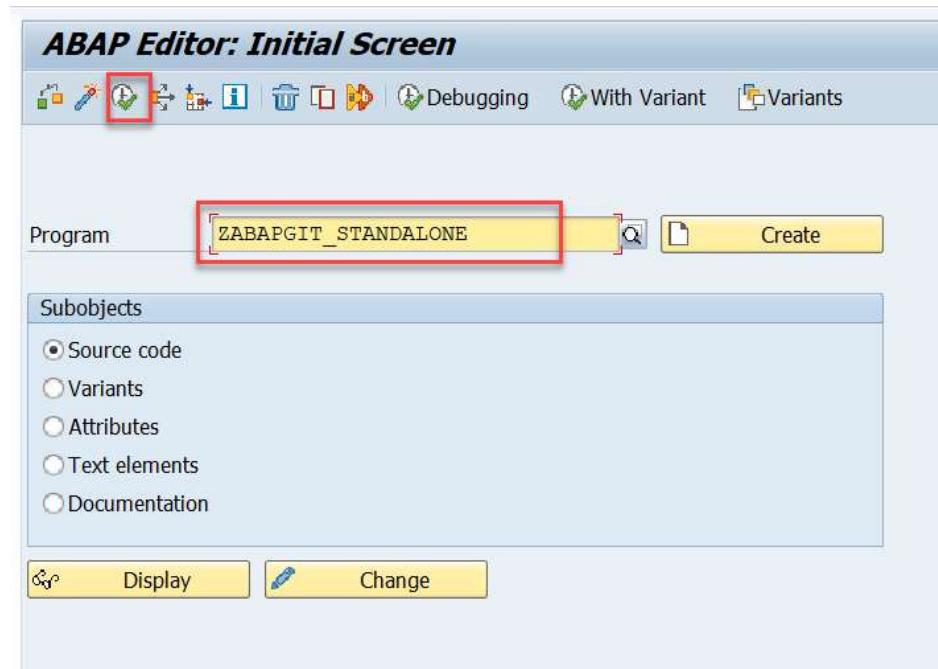
Typically, abapGit will only be used in the development system, so it can be installed in a local \$ package (e.g. `$ZABAPGIT`).

Now you can use abapGit by executing the report in transaction `SE38`.

STEP 2: Download ABAP Code

2-1: Enter T-code **SE38** and fill in the report name from STEP 1,
ZABAPGIT_STANDALONE

2-2: Click **Execute** to run the report



STEP 2: Download ABAP Code

2-3: Click **New Online** to download the code

The screenshot shows the 'ABAP GIT for GTT' application interface. At the top, there's a header bar with the title 'ABAP GIT for GTT' and a logo. Below it, the main title is 'abapGit ► Repository List'. On the right side of the header, there are several buttons: 'New Online' (highlighted with a red box), 'New Offline', 'X', and '?'. Below the header, there's a search bar labeled 'Filter:' and two checkboxes: 'Only Favorites' and 'Detail'. The main area is a table with columns: 'Name' (with a dropdown arrow), 'Url', 'Package', 'Branch', and 'Action'. There are two rows of data in the table, both of which are blurred. At the bottom of the screen, there's a footer with the 'abapGit' logo, the version '1.98.0', and the text 'js: OK'.

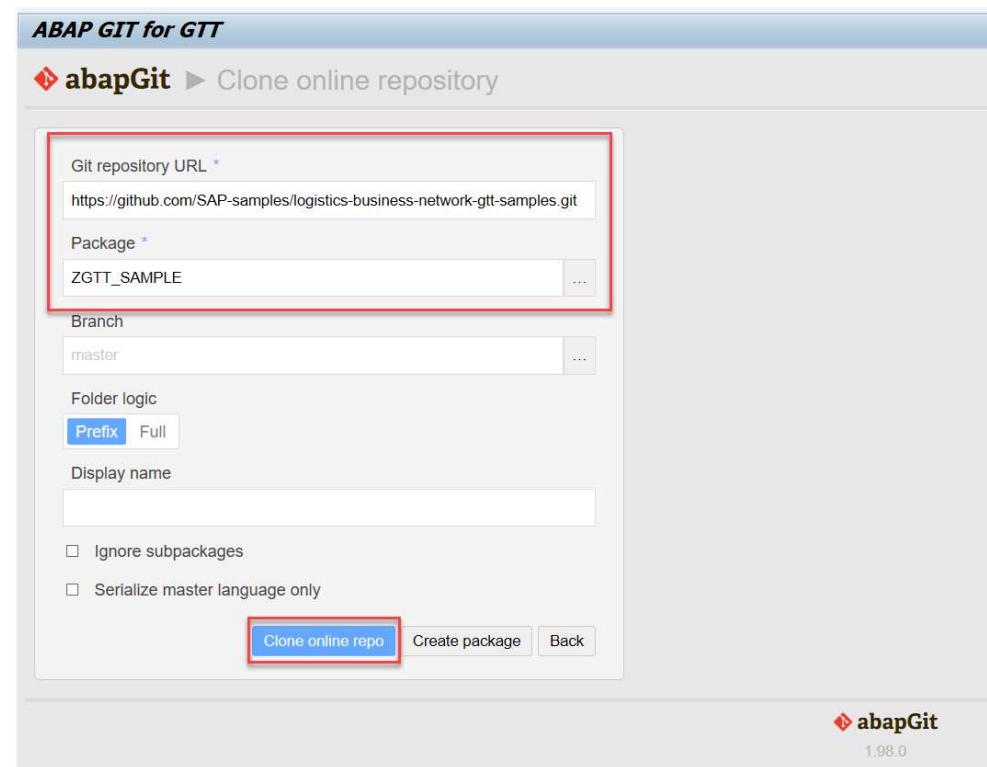
STEP 2: Download ABAP Code

2-4: Fill in the **Git repository URL**:

<https://github.com/SAP-samples/logistics-business-network-gtt-samples.git>

2-5: Fill in the **Package** where you want to create the new ABAP code. If the package does not exist yet, click **Create package** to create it.

2-6: Click **Clone online repo** to download the code



STEP 2: Download ABAP Code

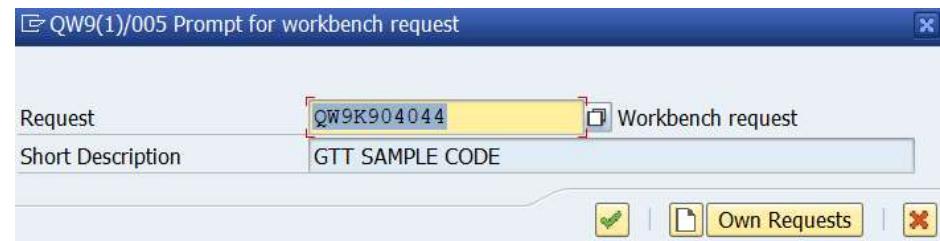
2-7: Click **Pull** to pull down the latest version code

The screenshot shows the ABAP GIT for GTT interface. At the top, it displays the repository name "logistics-business-network-gtt-samples" and its URL "https://github.com/SAP-samples/logistics-business-network-gtt-samples.git". The commit hash "c86ad2d" is also shown. On the right side, there is a toolbar with buttons for "Pull", "Stage", "Diff", "Branch", "Tag", "Advanced", "Refresh", and a gear icon. The "Pull" button is highlighted with a red box. Below the toolbar, there is a table listing files and their paths. The table has two columns: "non-code and meta files" and "Path". The "non-code and meta files" column contains entries like ".abapgit.xml", "/NOTICE", and "/src/0894ef4577391eeaab910bd805b24f18.avas.xml". The "Path" column lists the full file paths. At the bottom of the interface, there is a footer with the "abapGit" logo and the text "js: OK".

| non-code and meta files | Path | diff |
|-------------------------|--|------------|
| AVAS | /src/0894ef4577391eeaab910bd805b24f18.avas.xml | diff [x A] |
| CLAS | /src/zcl_gtt_sof_im_le_shipping.clas.abap | diff [x A] |
| | /src/zcl_gtt_sof_im_le_shipping.clas.xml | diff [x A] |
| DEVC | /src/package.devc.xml | diff [M R] |
| TABL | /src/zgtt_sof_ee_rel.tabl.xml | diff [x A] |

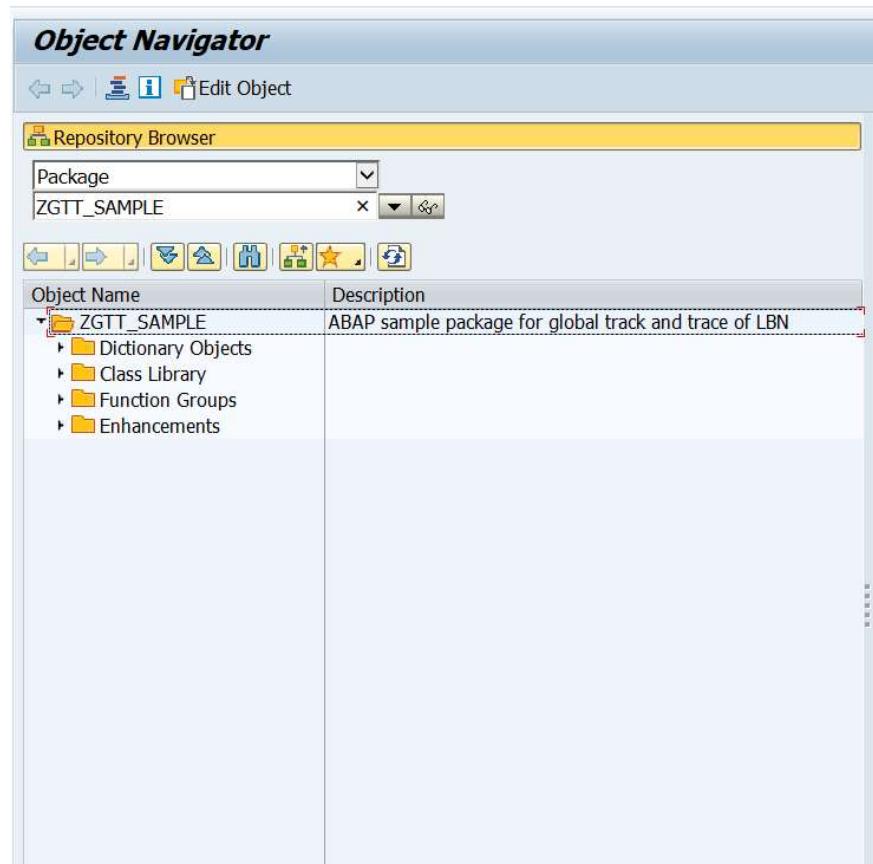
STEP 2: Download ABAP Code

2-8: Assign the change to a change request. If you do not have any available change request, you need to create a new one.

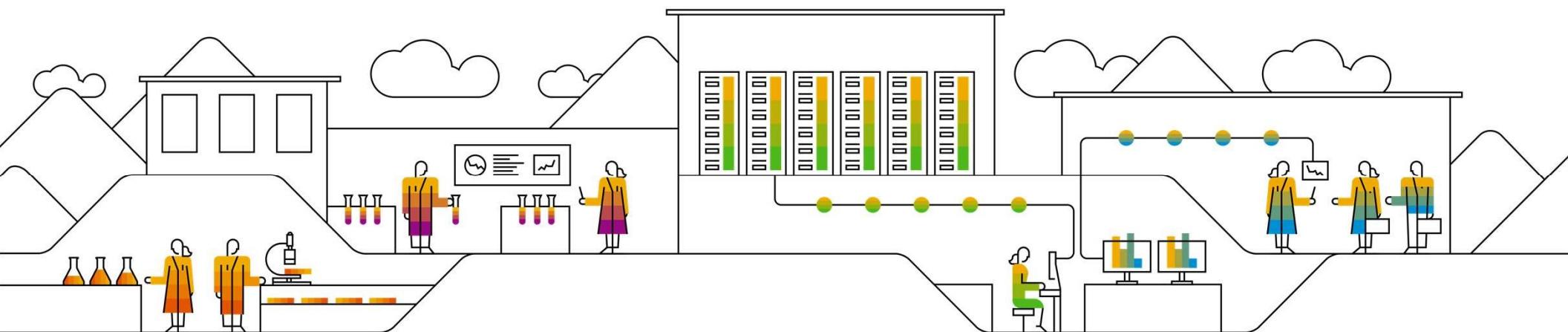


STEP 2: Download ABAP Code

2-9: After you download the code, you can check them with T-code **SE80**.



D) Configuration and Coding Guide - Advanced



1: Maintain AOT type

When you are creating Application Object Type for one Business Process Type, please make sure the AOT name must be the same as the name which is defined in the corresponding model in Manage Models application in GTT V2.

The image shows two SAP screens side-by-side. On the left is the 'Change View "Define Application Object Types": Details' screen. It displays a table with columns: Bus. Proc. Type, Appl. Obj. Type, Text, and Description. A row is selected with the values 'ESC_SORDER' and 'ZGTT_SO_ACC_HD'. The 'Text' column contains 'Sales Order Header'. On the right is the 'Model Details' screen for a process named 'sof'. It shows tabs for General Data, Control Tables, Object Identification, Global Track & Trace Relevance, and Parameter Setup. Under Object Identification, there is a section for 'Application Object ID Source' and 'Determine AOID By Function'. In the 'IDOC Integration' tab of the Model Details screen, the 'Tracked Process' is set to 'SalesOrder' and the 'Integration Switch' is turned 'ON'. The 'Fields' table lists several fields with their corresponding IDOC segments and IDOC fields. Red boxes highlight the 'Appl. Obj. Type' in the AOT table and the 'Application Object Type' in the Model Details integration section, both labeled 'ZGTT_SO_ACC_HD'.

| Name | IDOC | Event Code |
|------------------------|-----------|------------|
| Tracked Process | | |
| SalesOrderEvent | EHPPOST01 | |
| Event Types | | |
| Completion | | |

| Field | IDOC Segment | IDOC Field |
|---------------|--------------|-----------------------|
| salesOrderNo* | E1EHPSCP | YN_SO_NO |
| incoterms | E1EHPSCP | YN_SO_INCOTERM1 |
| netValue | E1EHPSCP | YN_NET_VALUE |
| currency | E1EHPSCP | YN_NET_VALUE_CURRENCY |

2: Maintain Tracking ID Type

In the AOT you maintained, please make sure the Tracking ID Type is the same as the name which is defined in the corresponding process type of the model in Manage Models application in GTT V2.

If the Tracking ID Type is determined by Field, then input the value source field in the Tracking ID field, and the Code Set which is referring to the Tracking ID Type for the AOT like below.

The image displays two SAP application screenshots side-by-side. On the left is the 'Change View "Define Application Object Types": Details' screen in the AOT. It shows a business process named 'ESC_SORDER' with an application object type 'ZGTT_SO_ACC_HD' and a text description 'Extract sales order header information to Global Track and Trace Acceptance'. Under 'Tracking ID Setup', the 'Tr ID Code Set' field is highlighted with a red box and contains the value 'SALES_ORDER'. On the right is the 'Model Details' screen in the GTT V2 application. It shows a tracked process for 'Sales Order Fulfillment' with a namespace 'com.lbngttsamples.gtt.app.sof'. In the 'Edit Tracked Process' dialog, the 'Name' field is set to 'SalesOrder' and the 'Tracking Id Type' field is also highlighted with a red box and contains the value 'SALES_ORDER'. Both fields have a red border indicating they are selected or being edited.

3: Make the customization logic in the function modules and assign them to the extractor function.

You can assign customization function models to the following extractor function:

1. GTT relevance function of AOT for tracked process tracking
2. GTT relevance function of Event Type for event tracking
3. Planned Event Extractors
4. Control Parameter Extractors
5. Info Parameter Extractors(optional)
6. Tracking ID Extractors
7. Event Data Extractors
8. AOT ID Extractors

Please select one category above, create the extractor function and assign the corresponding modules.

For customization of GTT relevance and AOT ID, you need to enable *Determine by Function* option.

For customization of Tracking ID Type, you need to enable *Check Function(Function Module)* option.

| Function | Function Module |
|---------------------|--|
| 510_WRF_MM_ITEM_01 | WRF_XRA_MM_ITEM_01 |
| OBP10_DELIV | /SAPTRX/XRA_SD_DELIV_OBP10 |
| OBP10_HU_IN_DLV | /SAPTRX/XRA_SD_HU_IN_DLV_OBP10 |
| OCB10_CONTAINER | /SCMTM/REL_CREATION_CONTAINER |
| OCB10_ORDER | /SCMTM/REL_CREATION_BOOKING |
| ODT20_REL_FU | /SCMTMS/REL_AOT_FU |
| ODT20_REL_TOUR | /SCMTMS/REL_AOT_ACT_TOUR |
| ODT30_REL_INS | /SCMTMS/REL_AOT_INS |
| ODT30_REL_TU | /SCMTMS/REL_AOT_TU |
| PCM10_ITEM | /SAPTRX/XRA_MM_ITEM_PCM10 |
| PMF10_ORDER | /SAPTRX/XRA_PP_ORDER_PMF10 |
| RES30_REL_RESOURCE | /SCMTMS/REL_AOT_RESOURCE |
| RES30_REL_TU | /SCMTMS/REL_AOT_RES_TU |
| RES30_REL_VEH | /SCMTMS/REL_AOT_RES_VEH |
| SNC10_MSGIN | /SCA/EM_MSG_RELEVANCE_CHECK |
| SNC10_PURORD | /SCA/EM_PO_RELEVANCE_CHECK |
| SNC10_RPLORD | /SCA/EM_RPL_RELEVANCE_CHECK |
| ZE2E_OBP10_DELIV | ZE2E_XRA_SD_DELIV_OBP10 |
| ZGTT_FERRERO_DEHDR | ZGTT_FERERRO_OTE_DE_HDR_REL |
| ZGTT_FERRERO_SHPHDR | ZGTT_FERERRO_OTE_SHP_HDR_REL |

4: Sample Codes for Sales Order Fulfillment Application

To support the Sales Order Fulfillment Application, the sample codes covers the following cases by function group ZGTT_SOF:

| Category | Business Process Type | Function Module Name | Description |
|--------------------------------------|-----------------------|--------------------------------|---|
| Control Parameter Extractors | ESC_DELIV | ZGTT_SOF_OTE_DE_HD | Function for setup of control parameters of delivery header |
| Control Parameter Extractors | ESC_DELIV | ZGTT_SOF_OTE_DE_ITEM | Function for setup of control parameters of delivery item |
| Control Parameter Extractors | ESC_SHIPMT | ZGTT_SOF_OTE_SHP_HD | Function for setup of control parameters of shipment |
| Control Parameter Extractors | ESC_SORDER | ZGTT_SOF_OTE_SO_HD | Function for setup of control parameters of sales order header |
| Control Parameter Extractors | ESC_SORDER | ZGTT_SOF_OTE_SO_ITEM | Function for setup of control parameters of sales order item |
| Event Data Extractors | ESC_DELIV | ZGTT_SOF_EE_DE_GI | SOF Extractor: Actual Event of Goods Issue |
| Event Data Extractors | ESC_DELIV | ZGTT_SOF_EE_DE_PACKING | SOF Extractor: Actual Event of Packing |
| Event Data Extractors | ESC_DELIV | ZGTT_SOF_EE_DE_PICKING | SOF Extractor: Actual Event of Picking |
| Event Data Extractors | ESC_DELIV | ZGTT_SOF_EE_DE POD | SOF Extractor: Actual Event of POD |
| Event Data Extractors | ESC_SHIPMT | ZGTT_SOF_EE_SHP_ARRIVAL | SOF Extractor: Actual Event of Arrival |
| Event Data Extractors | ESC_SHIPMT | ZGTT_SOF_EE_SHP_CHECKIN | SOF Extractor: Actual Event of Check In |
| Event Data Extractors | ESC_SHIPMT | ZGTT_SOF_EE_SHP_DEPARTURE | SOF Extractor: Actual Event of Departure |
| Event Data Extractors | ESC_SHIPMT | ZGTT_SOF_EE_SHP_LOAD_END | SOF Extractor: Actual Event of Loading End |
| Event Data Extractors | ESC_SHIPMT | ZGTT_SOF_EE_SHP_LOAD_START | SOF Extractor: Actual Event of Loading Start |
| GTT relevance function of AOT | ESC_DELIV | ZGTT_SOF_OTE_DE_HDR_REL | Extractor for relevance determination for Delivery Order Header |
| GTT relevance function of AOT | ESC_DELIV | ZGTT_SOF_OTE_DE_ITM_REL | Extractor for relevance determination for Delivery Order Items |
| GTT relevance function of AOT | ESC_SHIPMT | ZGTT_SOF_OTE_SHP_HDR_REL | Extractor for relevance determination for Shipment |
| GTT relevance function of AOT | ESC_SORDER | ZGTT_SOF_OTE_SO_HDR_REL | Extractor for relevance determination for Sales Order Header |
| GTT relevance function of AOT | ESC_SORDER | ZGTT_SOF_OTE_SO_ITM_REL | Extractor for relevance determination for Sales Order Items |
| GTT relevance function of Event Type | ESC_DELIV | ZGTT_SOF_EE_GI_REL | Extractor for relevance determination for Goods Issue Event |
| GTT relevance function of Event Type | ESC_DELIV | ZGTT_SOF_EE_DE_PACKING_REL | Extractor for relevance determination for Packing Event |
| GTT relevance function of Event Type | ESC_DELIV | ZGTT_SOF_EE_DE_PICKING_REL | Extractor for relevance determination for Picking Event |
| GTT relevance function of Event Type | ESC_DELIV | ZGTT_SOF_EE_DE POD_REL | Extractor for relevance determination for POD Event |
| GTT relevance function of Event Type | ESC_SHIPMT | ZGTT_SOF_EE_SHP_ARRIVAL_REL | Extractor for relevance determination for Arrival Event |
| GTT relevance function of Event Type | ESC_SHIPMT | ZGTT_SOF_EE_SHP_CHECKIN_REL | Extractor for relevance determination for Check In Event |
| GTT relevance function of Event Type | ESC_SHIPMT | ZGTT_SOF_EE_SHP_DEPARTURE_REL | Extractor for relevance determination for Departure Event |
| GTT relevance function of Event Type | ESC_SHIPMT | ZGTT_SOF_EE_SHP_LOAD_END_REL | Extractor for relevance determination for Loading End Event |
| GTT relevance function of Event Type | ESC_SHIPMT | ZGTT_SOF_EE_SHP_LOAD_START_REL | Extractor for relevance determination for Loading Start |
| Planned Event Extractors | ESC_DELIV | ZGTT_SOF_EE_DE_HD | SOF Extractor: Planned Event for Delivery Header of Outbound Delivery |
| Planned Event Extractors | ESC_DELIV | ZGTT_SOF_EE_DE_ITM | SOF Extractor: Planned Event for Delivery Item of Outbound Delivery |
| Planned Event Extractors | ESC_SHIPMT | ZGTT_SOF_EE_SHP HD | SOF Extractor: Planned Event for Shipment |
| Tracking ID Extractors | ESC_DELIV | ZGTT_ADD_TRACKID_OTE_DEITEM | Function for setup of tracking IDs of delivery item |
| Tracking ID Extractors | ESC_SHIPMT | ZGTT_ADD_TRACKID_OTE_SHPHDR | Function for setup of tracking IDs of shipment |
| Tracking ID Extractors | ESC_SORDER | ZGTT_ADD_TRACKID_OTE_SOITEM | Function for setup of tracking IDs of sales order item |

5: Available Contexts for the extractors' modules

5-1: In Display IMG page, click

Integration with Other SAP Components -> Interface to Global Track and Trace -> Define Application Interface

5-2: Choose activity **Define Business Process Types**

5-3: Please select the Business Process Types to find all the context tables and their structure info.

The screenshot shows two SAP application windows side-by-side. The left window is titled 'Display IMG' and displays a hierarchical list of integration components under 'Structure'. One item, 'Define Business Process Types', is highlighted with a red box and has a yellow background. The right window is titled 'Display View "Define Available Application Tables": Overview' and shows a table of application tables. The table has columns for 'Structure/Table', 'DDIC Definition', 'DB Struc. Name', and various update flags ('I', 'U', 'D'). A red box highlights the first 15 rows of the table, which correspond to the context tables listed in the 'Structure/Table' column of the left window. The 'Business Process Type' field in the right window is set to 'ESC_SHIPMT'.

| Structure/Table | DDIC Definition | DB Struc. Name | Bus. O... | Updt Fld Name | No Chg... | Insert Val | Update... | Delete... | Key Start | Key Length |
|-----------------------|-----------------|----------------|-------------------------------------|---------------|-----------|------------|-----------|-----------|-----------|------------|
| ADDRESS_NEW | SADRVB | SADR | <input type="checkbox"/> | | | | | | 0 | 0 |
| ADDRESS_OLD | SADRVB | SADR | <input type="checkbox"/> | | | | | | 0 | 0 |
| DELIVERY_HEADER | VTRLK | LIKP | <input type="checkbox"/> | | | | | | 0 | 0 |
| DELIVERY_ITEM | VTRLP | LIPS | <input type="checkbox"/> | | | | | | 0 | 0 |
| HU_HEADER_NEW | VERKPVB | VERP | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| HU_HEADER_OLD | VERKPVB | VERP | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| HU_ITEM_NEW | VEPOVB | VEPO | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| HU_ITEM_OLD | VEPOVB | VEPO | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| PARTNER_NEW | VBPABV | VBPB | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| PARTNER_OLD | VBPABV | VBPB | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_HEADER_NEW | VTTKBV | VTTK | <input checked="" type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_HEADER_OLD | VTTKBV | VTTK | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_ITEM_LEG_NEW | VTSPVB | VTSP | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_ITEM_LEG_OLD | VTSPVB | VTSP | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_ITEM_NEW | VTPPBV | VTPP | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_ITEM_OLD | VTPPBV | VTPP | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |
| SHIPMENT_LEG_NEW | VTTSBV | VTTS | <input type="checkbox"/> | UPDKZ | I | U | D | 0 | 0 | 0 |

6: Coding Tips in the GTT relevance function modules

To customize the GTT relevance function modules, key points are as below:

1. Make sure that the Main / Master tables are following the configuration of corresponding AOT or Event Type.
2. Add customization logics to determine the output parameters *E_RESULT*.

See sample code of function: *ZGTT_SOF_OTE_SHP_HDR_REL*

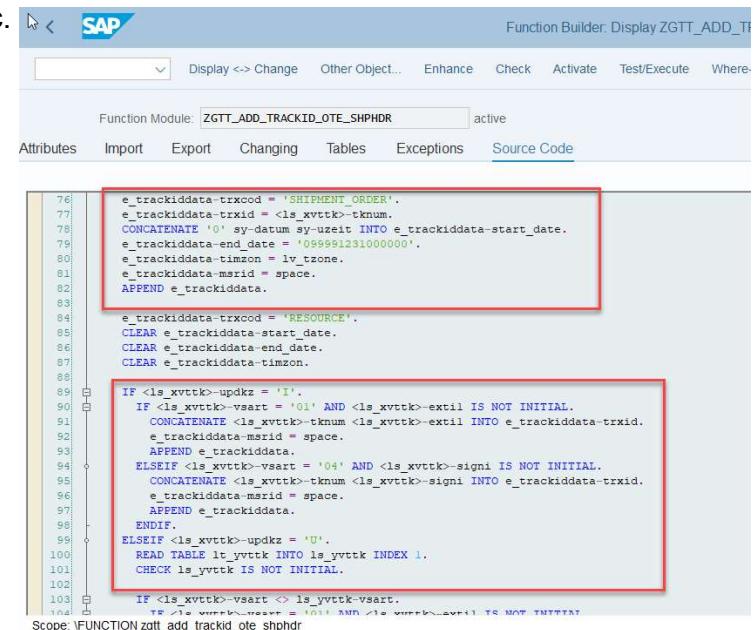
The screenshot shows the SAP Function Builder interface with the title bar "Function Builder: Display ZGTT_SOF_OTE_SHP_HDR_REL". The main area displays the ABAP source code for the function module. Two specific sections of the code are highlighted with red boxes:

```
28     <ls_xvttk>      TYPE vstkvb.  
29  
30     * > Check if Main table is Shipment or not.  
31     IF i_app_object-maintabdef <> gc_bp_t shipment_header_new.  
32         PERFORM check_main_table_got_rel  
33         TABLES c_loitable  
34             USING i_app_object-maintabdef  
35             space  
36             i_app_obj_types-trelfunc  
37             i_app_object-ppobjtype  
38             i_ppsys  
39             RAISE parameter_error.  
40     ELSE.  
41         * Read Main Object Table (Shipment - VTTK)  
42         ASSIGN i_app_object-maintabref-> TO <ls_xvttk>.  
43     ENDIF.  
44  
45  
46     * > Check Relevance of ACT: IN OTE  
47     PERFORM check_act_relevance_shp  
48         USING <ls_xvttk>  
49         CHANGING lv_act_relevance  
50         CHECK lv_act_relevance IS NOT INITIAL.  
51  
52     When shipment is newly created, check relevance of GIT: only when delivery has been assigned.  
53     IF <ls_xvttk>-vtxtkx EQ gc_insert.  
54         PERFORM check_givt_relevance_assignment  
55             USING i_all_apps_tables  
56  
Scope: FUNCTION zgtt_sof_ote_shp_hdr_rel
```

7: Coding Tips in the Tracking ID function modules

To customize the Tracking ID function modules, key points are as below:

1. Make sure that the Main / Master tables are following the configuration of corresponding AOT.
2. Add customization logics to fill the output table *E_TRACKIDDATA*.
3. The Tracking ID Type need to be the same as the definition in the process type of model in Manage Models application.
4. GTT v2 accepts delta transport for tracking IDs, which means that only the newly-created / changed / deleted tracking IDs shall be filled, while the ones without change need to be ignored in the logic.
5. In case of tracking ID deletion, the field *ACTION* shall be filled with 'D'.



The screenshot shows the SAP Function Builder interface with the function module **ZGTT_ADD_TRACKID_OTE_SHPHDR** selected. The code editor displays the source code for this function. Several lines of code are highlighted with red boxes, indicating specific logic or configurations:

```
Function Module: ZGTT_ADD_TRACKID_OTE_SHPHDR | active
Attributes Import Export Changing Tables Exceptions Source Code

76| e_trackidata-trxcod = 'SHIPMENT_ORDER'.
77| e_trackidata-trxid = <ls_xvttk>-tnum.
78| CONCATENATE '0' sy-datum sy-zeit INTO e_trackidata-start_date.
79| e_trackidata-end_date = '059991231000000'.
80| e_trackidata-timzon = lv_tzone.
81| e_trackidata-msrid = space.
82| APPEND e_trackidata.
83|
84| e_trackidata-trxcod = 'RESOURCE'.
85| CLEAR e_trackidata-start_date.
86| CLEAR e_trackidata-end_date.
87| CLEAR e_trackidata-timzon.
88|
89| IF <ls_xvttk>-updkz = 'I'.
90|   IF <ls_xvttk>-vsart = '01' AND <ls_xvttk>-extil IS NOT INITIAL.
91|     CONCATENATE <ls_xvttk>-tnum <ls_xvttk>-extil INTO e_trackidata-trxid.
92|     e_trackidata-msrid = space.
93|     APPEND e_trackidata.
94|   ELSEIF <ls_xvttk>-vsart = '04' AND <ls_xvttk>-signi IS NOT INITIAL.
95|     CONCATENATE <ls_xvttk>-tnum <ls_xvttk>-signi INTO e_trackidata-trxid.
96|     e_trackidata-msrid = space.
97|     APPEND e_trackidata.
98|   ENDIF.
99| ELSEIF <ls_xvttk>-updkz = 'U'.
100| READ TABLE lt_yvttk INTO ls_yvttk INDEX 1.
101| CHECK ls_yvttk IS NOT INITIAL.
102|
103|   IF <ls_xvttk>-vsart >> ls_yvttk-vsart.
104|     IF <ls_yvttk>-mssrt = '01' AND <ls_yvttk>-extil IS NOT INITIAL.
```

8: Coding Tips in the Control Parameter function modules

To customize the Control Parameter function modules, key points are as below:

1. Make sure that the Main / Master tables are following the configuration of corresponding AOT.
2. Add customization logics to fill the output table *E_CONTROL_DATA*.
3. GTT v2 asks for full transport for all the control parameters, which means that all the fields needs to be extracted in all cases, no matter whether their values have been changed.
4. To fill up the composition (table) fields defined in Manage Model applications, use the parameter field *PARAMINDEX* to specify the line number. If the field is empty, GTT regards it as a simple flat field.
5. To clear a composition, fill the key field using invalid values, for which key attribute has been checked in Manage Model application.
6. The field with fixed name ‘ACTUAL_BUSINESS_DATETIME’ and ‘ACTUAL_BUSINESS_TIMEZONE’ are mandatory fields to be transported for event handling sequencing in GTT V2.
7. In Manage Model application, click tab *IDOC Integration* to map the parameter names and model field names.

The screenshot shows the SAP Model Details interface with the 'IDOC Integration' tab selected. The 'Tracked Process' dropdown is set to 'Shipment'. The 'Tracked Process Mapping' table lists tracked processes and their corresponding IDOC segments and event codes. A red box highlights the 'Fields' section of the table, which maps model field names to IDOC segments and fields.

| Field | IDOC Segment | IDOC Field |
|---------------------------|--------------|---------------------------|
| shipmentNo | E1EHPGP | YN_SHP_NO |
| serviceAgentLbld | E1EHPGP | YN_SHP_SA_LBN_ID |
| dangerousGoods | E1EHPGP | YN_SHP_CONTAIN_DGOODS |
| forwardingAgentTrackingId | E1EHPGP | YN_SHP_FA_TRACKING_ID |
| shippingType | E1EHPGP | YN_SHP_SHIPPING_TYPE |
| transportationMode | E1EHPGP | YN_SHP_TRANSPORTATION_MOD |

9: Coding Tips in the Planned Event function modules

To customize the Planned Event function modules, key points are as below:

1. Make sure that the Main / Master tables are following the configuration of corresponding AOT.
2. Add customization logics to fill the output table *E_EXPEVENTDATA*.
3. GTT v2 asks for full transport for all the planned events, which means that all the events needs to be extracted in all cases, no matter whether their values have been changed.
4. The field *MILESTONE* is mandatory to be transported.
5. The field *EVT_EXP_DATETIME* is optional, but need to be filled with relevant time zone *EVT_EXP_TZONE* together if it needs to be transported.
6. The field *LOC_ID1* is optional, but need to be filled with relevant location type *LOCTYPE* together if it needs to be transported. The values for field *LOCTYPE* are limited by *Manage Locations* application in GTT V2.
7. The field *LOCID2* is mandatory to specify the stop ID (match key) in case of shipment tracking.

See sample code of function: *ZGTT_SOF_EE_SHP_HD*

The screenshot shows the SAP Model Details interface for the function module ZGTT_SOF_EE_SHP_HD. The top navigation bar includes 'SAP Model Details' and 'Internal - Test'. The main area has tabs for 'Tracked Process', 'Field Type Pool', 'Event Type Pool', 'Code List', 'IDOC Integration', 'Visibility Provider Integration', 'Planned Event Extension', and 'Event to Action'. The 'Tracked Process' tab is selected, showing 'Shipment' as the tracked process. The 'Event to Action' tab is highlighted with a red border. Below the tabs, there's a 'Tracked Process Mapping' section with 'ERP Object Type: Others' and 'Application Object Type: ZGTT_SHP_ACC_HD'. The 'Tracked Process / Events (26)' table lists tracked processes like ShipmentEvent, Event Types (LoadingStart, POD, Departure, Arrival), and their corresponding IDOC segments (E1EHP01, E1EHP02, E1EHP02, E1EHP02). The 'Fields' table also has a red border and lists fields such as shipmentNo, serviceAgentLbnId, dangerousGoods, forwardingAgentTrackingId, shippingType, and transportationMode, each mapped to an IDOC segment (E1EHP01, E1EHP01, E1EHP01, E1EHP01, E1EHP01, E1EHP01) and an IDOC field (YN_SHP_NO, YN_SHP_SA_LBN_ID, YN_SHP_CONTAIN_DGOODS, YN_SHP_FA_TRACKING_ID, YN_SHP_SHIPPING_TYPE, YN_SHP_TRANSPORTATION_MODE).

10: Coding Tips in the Event Data function modules

To customize the Event Data function modules, key points are as below:

1. Make sure that the Main / Master tables are following the configuration of corresponding Event Type.
2. Add customization logics to fill the output table *CT_TRACKINGHEADER*, *CT_TRACKLOCATION*, *C_EVENTID_MAP*.
3. If the event has user-defined fields in Manage Models application, fill the table *CT_TRACKPARAMETERS*.
4. If the event has reference table information, fill the table *CT_TRACKREFERENCES*.
5. The field *CT_TRACKINGHEADER-SRCCOD*, *SRCID*, *SRCTX* is used for event reason transport.
6. In Manage Model application, click tab IDOC Integration to map the user-defined parameter names and model field names.

See sample code of function: *ZGTT_SOF_EE_DE_PICKING*

The screenshot shows the SAP Model Details interface for the function module *ZGTT_SOF_EE_DE_PICKING*. The top navigation bar includes SAP, Model Details, Internet - Test, and tabs for Tracked Process, Field Type Pool, Event Type Pool, Code List, IDOC Integration (which is selected), Visibility Provider Integration, Planned Event Extension, and Event to Action. The status bar indicates 'sof' and 'Active'. The main area displays the 'Tracked Process Mapping' section. Under 'Tracked Process / Events (4)', it lists 'Tracked Process' (IDOC: EHPOST01) and 'DeliveryItemEvent' (IDOC: EHPPOST01). Under 'Event Types', it lists 'Picking' (Event Code: EVMSTA02) and 'Packing' (Event Code: EVMSTA02). The 'Fields' section maps these event types to IDOC fields: 'quantity' is mapped to 'E1EVMPAR' (IDOC Segment: QUANTITY). A red box highlights the 'Fields' table entry for 'quantity'.

11: Enhancement codes for cross-processes tracking

The Sales Order Fulfillment application asks for cross-processes tracking, which is used in below cases:

1. When the delivery item process is updated and transported to GTT, the preceding sales order item process needs to be updated and transported to GTT.
2. When the shipment process is updated and transported to GTT, the preceding delivery and item process, and their planned events needs to be updated and transported to GTT.

See sample code of BADI :

1. Method *SAVE_AND_PUBLISH_DOCUMENT* of implementation *Z_GTT_SOF_LE_SHP_DELIVERY_PROC*
2. Method *BEFORE_UPDATE* of implementation *Z_GTT_SOF_LE_SHIPMNT*

The screenshot shows two SAP Business Add-In Builder windows side-by-side.

Left Window (Implementation Z_GTT_SOF_LE_SHP_DELIVERY_PROC):

- Properties:** Enhancement Implementation: Z_GTT_SOF_LE_SHP_DELIVERY_PROC, Active.
- Implementation Elements:** Implementing Class: IF_EX_LE_SHP_DELIVERY_PROC, Implementing Class: ZCL_GTT_SOF_IM_LE_SHIPPING.
- Methods:** A list of methods including:
 - IF_EX_LE_SHP_DELIVERY_PROC-ITEM_DELETION
 - IF_EX_LE_SHP_DELIVERY_PROC-DELIVERY_DELETION
 - IF_EX_LE_SHP_DELIVERY_PROC-DELIVERY_FINAL_CHECK
 - IF_EX_LE_SHP_DELIVERY_PROC-SAVE_AND_PUBLISH_DOC (highlighted with a red box)
 - IF_EX_LE_SHP_DELIVERY_PROC-SAVE_DOCUMENT_PREPA...
 - IF_EX_LE_SHP_DELIVERY_PROC-DOCUMENT_NUMBER_PUB...
 - IF_EX_LE_SHP_DELIVERY_PROC-FILL_DELIVERY_HEADER
 - IF_EX_LE_SHP_DELIVERY_PROC-FILL_DELIVERY_ITEM
 - IF_EX_LE_SHP_DELIVERY_PROC-CHANGE_DELIVERY_HEAD...
 - IF_EX_LE_SHP_DELIVERY_PROC-CHANGE_DELIVERY_ITEM
 - IF_EX_LE_SHP_DELIVERY_PROC-PUBLISH_DELIVERY_ITEM
 - IF_EX_LE_SHP_DELIVERY_PROC-SAVE_AND_PUBLISH_BEFO...

Right Window (Implementation Z_GTT_SOF_LE_SHIPMNT):

- Properties:** Implementation Name: Z_GTT_SOF_LE_SHIPMNT, Active.
- Implementation Short Text:** GTT - Enhancement to update the imputed delivery orders.
- Definition Name:** BADI.LE.SHIPMENT.
- Runtime Behavior:** Implementation will be called.
- Interface:** Interface Name: IF_EX_BADI.LE.SHIPMENT, Name of Implementing Class: ZCL_IM_GTT_SOF_LE_SHIPMNT.
- Methods:** A list of methods including:
 - AT_SAVE
 - BEFORE_UPDATE (highlighted with a red box)
 - IN_UPDATE

11: Enhancement codes for cross-processes tracking

The cross processes tracking scenarios cover below:

Delivery Item -> Sales Order Item:

- 1\ Delivery Item Composition (Full Transport)
 - Case: Delivery Item Create / Delete
 - Case: Delivery Create / Delete

Shipment -> Delivery and Delivery Item:

- 1\ Tracking ID (Delta Transport)
 - Case: Shipment Create / Delete with Delivery
 - Case: Shipment Assign / Unassign Delivery
- 2\ Shipment Composition (Full Transport)
 - Case: Shipment Create / Delete with Delivery
 - Case: Shipment Assign / Unassign Delivery
- 3\ Planned Event in Delivery (Full Transport)
 - Case: Shipment Create / Delete with Delivery / with stage
 - Case: Shipment Assign / Unassign Delivery / with stage
 - Case: Stage Assign / Unassign Delivery
 - Case: Stage Insert / Delete
 - Case: Stage Location Update
 - Case: Stage Planned Datetime Update
- 4\ Planned Event in Delivery Item (Full Transport)
 - Case: Shipment Create / Delete with Delivery / with stage
 - Case: Shipment Assign / Unassign Delivery / with stage
 - Case: Stage Assign / Unassign Delivery
 - Case: Stage Insert / Delete
 - Case: Stage Location Update
 - Case: Stage Planned Datetime Update

Thank you.

Contact information:

SAP Business Network
September 2020

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