



Integrations (Direct)

HPSM — Last update: 31 October 2022

Basis Technologies

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1. Introduction

ActiveControl include an Integration Framework to allow easy bi-directional communication with other ITSM tools. This Integration Framework can be utilised to manage outbound interactions with external systems (including queuing, re-sends, error processing and reporting) and inbound integration scenarios – those initiated by a system external to ActiveControl – by exposing several fully documented API's and web-services that allow manipulation of ActiveControl objects by these systems.

Out-of-the-box Integrations are already available for a multitude of tools such as ServiceNow, JIRA, GitLab, Microsoft TFS and SAP ChaRM.

This Integration Guide is intended to give the reader an overview of the capabilities of the out of the box (OOTB) integration available between ActiveControl and **HP Service Manager (HPSM)** that was developed for a customer in 2018.

Document Audience

The intended audience for this document are ActiveControl Administrators and other technical teams looking to integrate ActiveControl and HPSM. The document assumes an existing working knowledge of ActiveControl and the customer's existing HPSM installation.

2. Architecture of ActiveControl

The architecture of ActiveControl can be broken down into several core components:

- 1) a Domain Controller
- 2) other participating satellite SAP systems.
- 3) Access methods – consisting of a Windows GUI client software, Web UI and SAPGUI screens.
- 4) Integration Framework

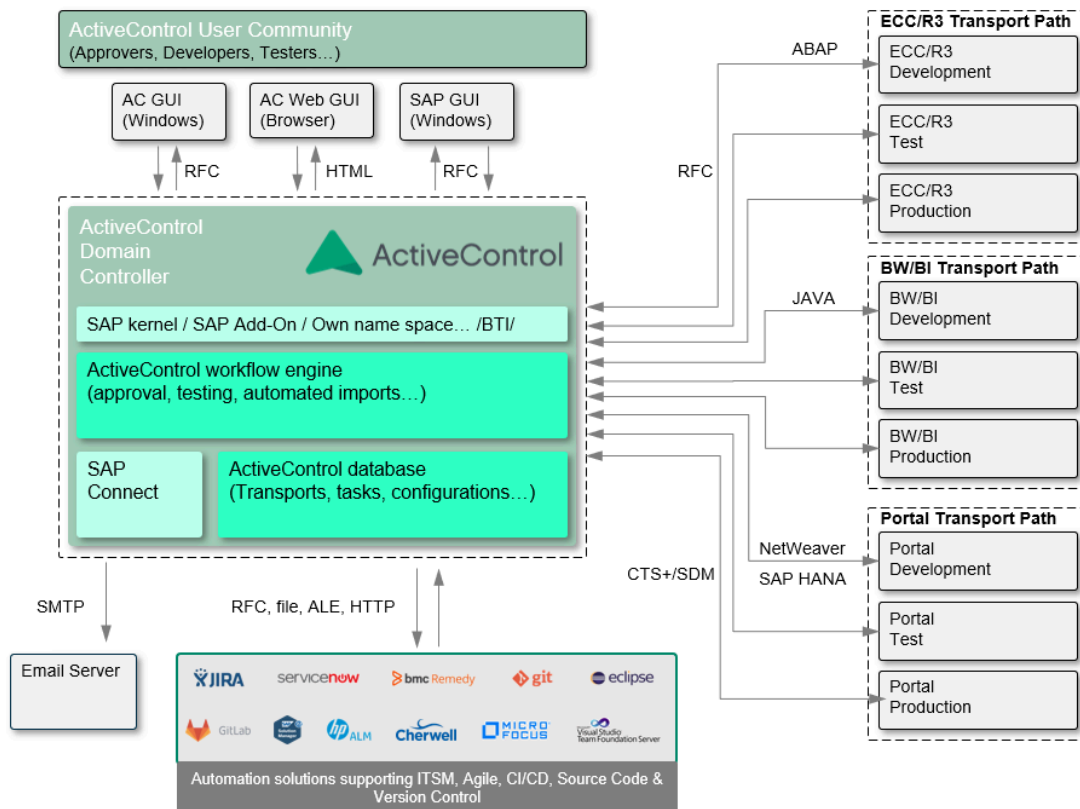


Figure: The ActiveControl architecture

Like the Transport Management System, ActiveControl has the concept of a **Domain Controller**. The Domain Controller does not need to be configured in any special way, it is simply the SAP system that the ActiveControl client software connects to and is where ActiveControl configuration and application data is stored.

The server software runs mostly within the ActiveControl domain controller. When necessary, the domain controller connects to the other SAP systems to gather change request information and to perform transports. These connections are made using SAP's remote function call (RFC) protocol.

The Integration Framework is installed as part of the ActiveControl Domain Controller, and is used to manage communication with external products and systems.

3. Customer Requirements

An integration with HP Service Manager was developed in 2018, to fulfil an existing ActiveControl customer's requirements to integrate between their HPSM installation and ActiveControl. This was a relatively basic integration aimed mainly at automatically creating HPSM tickets, and putting some related updates back on the originating Business Task.

The following were the customer requirements against which the HPSM integration was delivered:

| Requirement | Details |
|-------------|---|
| 1. | When a Business Task is created, the Integration will automatically create HPSM ticket if certain criteria in the Business Task are met. |
| 2. | As part of the creation of the HPSM ticket, ActiveControl will populate the resulting HPSM ticket number in a Business Task custom field. |
| 3. | As part of the creation of the HPSM ticket, ActiveControl will update a custom field on the Business Task (from Yes to No). |
| 4. | As part of the creation of the HPSM ticket, ActiveControl will create a new URL link on the Business Task to link the HPSM ticket. |

4. Core Configuration

This section details the core configuration steps that are required to setup the ActiveControl/HPSM integration.

The Integration configuration is maintained through the SAP standard SM30/31 transactions where table entries can be created and updated.

Configuration Summary

| 1. | Summary | Technical Details | Notes |
|----|----------------------|---|--|
| 1. | Users | ActiveControl HPSM | Users required in ActiveControl and HPSM for the Integration to work. |
| 2. | WSDL | BTI_TE_TASK.wsdl | This is required for HPSM to call ActiveControl to update the status. |
| 3. | Logical Port | HPSM Proxy | |
| 4. | RFCs | N/A | None are required for this HPSM Integration. |
| 5. | Number Ranges | /BTI/TE_RF | |
| 6. | Configuration Tables | /BTI/TE_INT_SYST /BTI/TE_INT_TVARV /BTI/TE_INT_MAPP /BTI/TE_INT_CONV /BTI/TE_INT_CLAS /BTI/TE_INT_COND /BTI/TE_INT_FLDE /BTI/TE_INT_TRIG | |
| 7. | Programs | /BTI/TE_INTEG_TRIGGER /BTI/TE_INTEG_SEND | |
| 8. | Jobs | | Job to run /BTI/TE_INTEG_TRIGGER and /BTI/TE_INTEG_SEND every 10 minutes |
| 9. | User Exits | 0992 | Z user exit needed to achieve some of the Customer Requirements. |

4.1. Integration Users

ActiveControl User

| User | Type | Roles required | Description |
|----------|--------|--|---|
| HPSM_DST | System | /BTI/TE:CTS_USER /BTI/ TE:STD_DEVELOPER_AUTHS /BTI/ TE:STD_TEAM_LEAD_AUTHS /BTI/TE:STD_VIEW_AUTHS | Used for the communication from HPSM back to ActiveControl. |
| TE_BATCH | System | /BTI/TE:CTS_ADMIN_USER /BTI/TE:CTS_RFC /BTI/TE:COMP_ADMIN_ROLE | Used for scheduling of Integration Programs. |

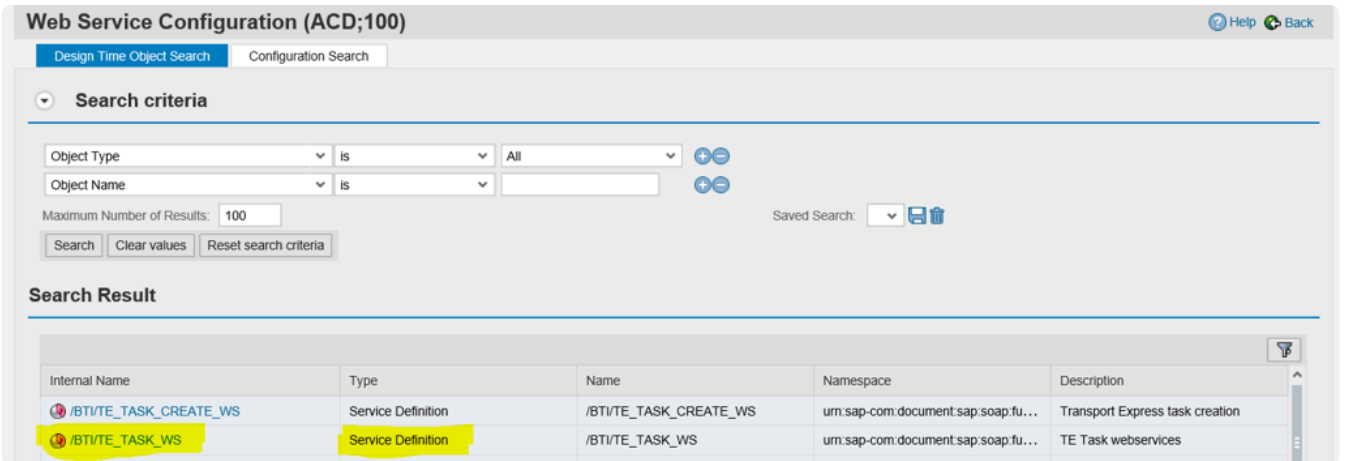
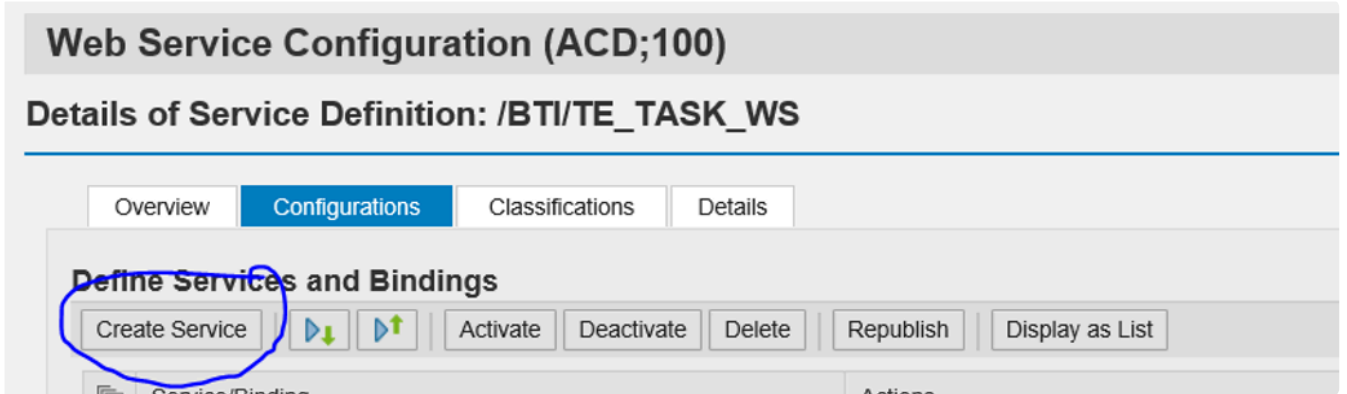
HPSM User

A system user is required within HPSM to support the Integration. This must have the authorisations to create and maintain HPSM tickets.

4.2. WSDL

BTI_TE.wsdl is required on HPSM side to call ActiveControl to update the status. The operation is `/bti/teTaskModifyWs`.

The WSDL can be generated by following the following steps:

| Step | Description |
|------|---|
| 1. | <p>Go to transaction SOAMANAGER in the ActiveControl Domain Controller, and choose [Web Service Configuration] from the [Service Administration] tab.</p> <div> <p>Web Service Configuration Configure service definitions, consumer proxies and service groups</p> </div> |
| 2. | <p>Select the service definition <code>/BTI/TE_TASK_WS</code>.</p>  |
| 3. | <p>Select 'Create service' option</p>  |
| 4. | <p>Give the same name to service and binding as given in DST and click next. Use 'BTI_TE_WS' for service and 'BTI_TE' for binding.</p> |

| | |
|----|---|
| | <div><div>Web Service Configuration (ACD;100)</div><div>Configuration of New Binding for Service Definition '/BTI/TE_TASK_WS'</div><div><div><div>1</div>Service and Binding Name</div><div><div>2</div>Provider Security</div><div><div>3</div>SOAP Protocol</div><div><div>3</div>Operation Settings</div></div><div><div>Back</div><div>Next</div><div>Finish</div><div>Cancel</div></div><div><div>Service Information</div><div><div>* Service Name:</div><div>BTI_TE_WS</div></div><div><div>Service Description Text:</div><div>Testing</div></div></div><div><div>Binding Information</div><div><div>* New Binding Name:</div><div>BTI_TE</div></div></div></div> |
| 5. | For Section 'Provider security', check in DST. |

Back
Next
Finish
Cancel

Transport Guarantee

Transport Level: **None**

Transport Level Security

☒ None (http)
☐ SSL (https)

Message Level Security

☒ None
☐ Symmetric Message Signature and Encryption
☐ Asymmetric Message Signature
☐ Asymmetric Message Signature and Encryption
☐ Secure Conversation
☐ Extended Signature and Header Protection

Authentication Settings

Authentication Level: **Basic**

Authentication Method

☐ No Authentication

Transport Channel Authentication

☒ User ID/Password
☐ X.509 SSL Client Certificate
☐ Single Sign On using SAP Assertion Ticket
☐ Single Sign On using SPNego

Message Authentication

☐ User ID/Password
☐ X.509 Certificate
☐ Single Sign On using SAML

6. Click on finish. (nothing is required in [SOAP Protocol and Operation] settings)

7. Download the WSDL via the highlighted icon.

Create Service

Activate

Deactivate

Delete

Republish

Display as List

| Service/Binding | Actions | State | De |
|-----------------|---------|--------|----|
| BTI_TE_WS | | Active | Te |
| BTI_TE | | | |

WSDL Generation for Binding: BTI_TE

Separate browser window started

WSDL Flavours

Flavour: All possible combinations are allowed

SAP Assertions: All

Security Assertions: ABAP 702/730/740 and higher

WSDL Section: AllInOne

WSDL Version: 1.1

WSP Version: 1.2

WSP Style: single-Binding

SOAP Version: SOAP 1.1 and SOAP 1.2

SOAP Style: Document

SOAP Action: With

Options for WSDL Access and URLs

Standard

Alternative URL

Alternate Host:

Alt. Port (http):

Meta Data Protocol:

Alt. Port (https):

Apply URL options

WSDL Generation

WSDL URL for Binding: http://TE.BASISTECHNOLOGIES.NET:8000/sap/bc/srt/wsl/tiv_10002A111AD1/bndg_url/sap/bc/srt/rfc/bti/te_task_ws/100/bti_te_ws/bti_te?sap-client=100

Note 1: Service and binding must be created for the service definition /BTI/TE_TASK_WS in each system with same name.

Note 2: The URL in WSDL that HPSM consumed to call the operation /bti/teTaskModifyWs must be updated in HPSM side to point to correct system.

```
8 </wsdl:binding>
9 <wsdl:service name="BTI_TE_WS">
10 <wsdl:port name="BTI_TE" binding="tns:BTI_TE">
11 <soap:address location="http://t...:8090/sap/bc/srt/rfc/bti/te_task_ws/200/bti_te_ws/bti_te"/>
12 </wsdl:port>
13 <wsdl:port name="BTI_TE_soap12" binding="tns:BTI_TE_soap12">
14 <wsdl:address location="http://t...:8090/sap/bc/srt/rfc/bti/te_task_ws/200/bti_te_ws/bti_te"/>
15 </wsdl:port>
16 </wsdl:service>
17 </wsdl:definitions>
```

8. The resulting WSDL should be issued to HPSM Administrator, to be updated in HPSM with the new URL pointing to new system.

* The WSDL is required to be regenerated in each system if you prefer different service and binding name where needing to integrate with HPSM.

4.3. Logical Port (HPSM Proxy)

Logical port must be created for proxy **/BTI/CO_TE_HPSMCHANGE_MANAGEMENTE** in SOAMANAGER for the outbound integration to work.

Web Service Administration
Search Design Time object for Web Service Configuration

Search by: Search Pattern: Field: In System: [Show Advanced Search](#)

Search Results

| External Name | Namespace | Internal Name | Type | Description |
|--------------------|----------------------------|-----------------------------------|----------------|-------------|
| ChangeManagementTE | http://schemas.hp.com/SM/7 | /BTI/CO_TE_HPSMCHANGE_MANAGEMENTE | Consumer Proxy | |

Details of Proxy Definition: /BTI/CO_TE_HPSMCHANGE_MANAGEMENTE

[Back to search](#) [Overview](#) [Configurations](#) [Details](#)

| Logical Port | State | Default Port | Creation Type |
|---------------------|-------|--------------|---------------|
| Create Logical Port | | | |

Figure: Creation of logical port

Also need to setup Transport Binding via SOAMANAGER as follows:

Web Service Configuration (DST;200) [Help](#) [Back](#)

Configuration: Consumer Proxy '/BTI/CO_TE_HPSMCHANGE_MANAGEMENTE', Logical Port 'ZBTI_HPSM'

[Consumer Security](#) [Messaging](#) [Transport Settings](#) [Message Attachments](#) [Identifiable Business Context](#) [Operation Settings](#) [Administrative Information](#)

Operation

- CreateChangeTE
- ApproveChangeTE
- CloseChangeTE
- DenyChangeTE
- MoveToNextPhaseChangeTE

Transport Binding

☒ Use non-default value for SOAP Action
SOAP Action:

WS Addressing

☐ Use non-default value for Inbound Message Action
Inbound Message Action:

Figure: Setting up transport binding



Since SOAMANAGER configuration can't be moved across system via transport, this process must be carried out in all the system where needing to integrate with HPSM

4.4. Remote Function Calls

No RFCs are required specifically for the ActiveControl <> HPSM integration.

4.5. Number Range

/BTI/TE_RF number range is required to be created (via SNRO) in the ActiveControl Domain Controller.

The No. must be created as “01”. From number = 00000000001 , to number 99999999999 (as many 9s as possible).

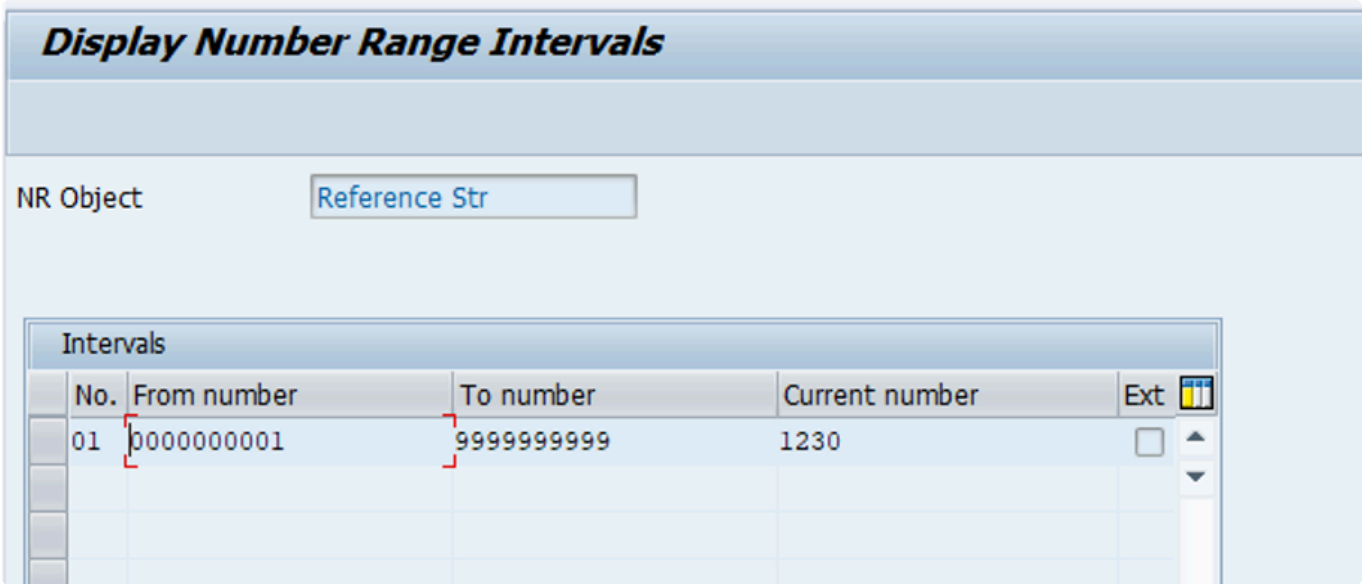


Figure: /BTI/TE_RF number range

4.6. Table: /BTI/TE_INT_SYST

/BTI/TE_INT_SYST is a standard configuration table as part of the Integration Framework.

| Field | Explanation |
|---------------------|--|
| EXTSYS_NO | Integration System Number, this is a unique numerical identifier of the system to integrate with (as it is possible to integrate with multiple systems) An example of this could be: 1 – HPSM 2 – ChaRM |
| EXTSYS_ID | External System ID |
| EXTSYS_NAME | Name of External System |
| RFC_DEST | Not required for HPSM Integration. |
| DDCINT | Not required for HPSM Integration. |
| TASKFIELD_LINK | Not required for HPSM Integration. |
| A FORMFIELD_LINK | Not required for HPSM Integration. |
| INT_USER | Not required for HPSM Integration. |
| INT_PASSWORD | Not required for HPSM Integration. |
| INT_PORT | Not required for ChaRM Integration. |



Note that the External System Number can be higher than 1 if you have already setup Integrations between ActiveControl and other 3rd Party tools.

Example Customer Configuration

| Field | Value |
|--------------------------------|-----------|
| External System Number | 01 |
| External System Identification | HPSM |
| External System Name | HPSM |
| Port | ZBTI_HPSM |

4.7. Table: /BTI/TE_TVAREV

/BTI/TE_TVAREV is a standard configuration table used for storing various configuration variables and parameters for other functionalities within ActiveControl.

| Field | Explanation of Field |
|-----------------|--|
| Variable Name | This is where the variable/parameter name is stored. The ones used in ChaRM integration are detailed underneath. |
| Number | Sequential Number (1,2,3 etc.) – used if you have more than one entry for the same Variable name. |
| INCL / EXCL | Include or Exclude. Will always be INCL for the ChaRM integration. |
| Option | Typically EQ (Equals) |
| Selection Value | Values for the Parameter. Some parameters require only one value, others require two. |

The following Variables are required to update the business task after the creation of HPSM change request per the original Customer Requirements

- TE_HPSM_CHANGE_CREATION: is to hold custom the field ID of “Change Creation”.
- TE_HPSM_CHANGE_CREATION_CODE: is to hold the possible value(code) of field “Change Creation”.
- TE_HPSM_CHANGE_NUMBER: is to hold custom field ID of Change number.
- TE_HPSM_CHANGE_PHASE: is to hold the custom field ID of Change phase
- TE_HPSM_URL_PREFIX: is to hold the prefix of the url

Example Customer Configuration


| Data Browser: Table /BTI/TE_TVAREV Select Entries 6 | | | | | | |
|--|------|------|------|----------------------------------|------|--|
|  | | | | | | |
| Table: /BTI/TE_TVAREV Displayed Fields: 6 of 6 Fixed Columns: 2 List Width 0250 | | | | | | |
| NAME | NUMB | SIGN | OPTI | LOW | HIGH | |
| <input type="checkbox"/> TE_HPSM_CHANGE_CREATION | 0001 | I | EQ | 561 | | |
| <input type="checkbox"/> TE_HPSM_CHANGE_CREATION_CODE | 0001 | I | EQ | 020 | | |
| <input type="checkbox"/> TE_HPSM_CHANGE_NUMBER | 0001 | I | EQ | 533 | | |
| <input type="checkbox"/> TE_HPSM_CHANGE_PHASE | 0001 | I | EQ | 538 | | |
| <input type="checkbox"/> TE_HPSM_URL_FIELD | 0001 | I | EQ | | | |
| <input type="checkbox"/> TE_HPSM_URL_PREFIX | 0001 | I | EQ | \\eu102602-n1-oss\FileShare\TER\ | | |

Figure: Customer example of /BTI/TE_TVAREV configuration

4.8. Table: /BTI/TE_INT_MAPP

- /BTI/TE_INT_MAPP* is a standard configuration table as part of the Integration Framework. It is used in the HPSM integration to define the mapping between ActiveControl fields values and their equivalent in the HPSM system.

| Field | Explanation of Field |
|---------------|--|
| EXTSYS_NO | Integration system number [from /BTI/TE_INT_SYST] |
| EXTSYS_NAME | External System Name [from /BTI/TE_INT_SYST] |
| DIRECTION | Not required for ChaRM Integration. |
| SEQUENCE_NO | Numerical sequence of the fields. |
| TEFIELDREF | This is the source field of the mapping. This table name is required in the field as well. eg. /BTI/TE_TASK-PRIORITY |
| EXTERNAL_REF | This is the same field as above. |
| KEY_FIELD | Not required for ChaRM Integration. |
| TECUSTFLD_REF | Not required for ChaRM Integration. |
| DEFAULT_VALUE | Not required for ChaRM Integration. |

Example Customer Configuration

| Data Browser: Table /BTI/TE_INT_MAPP Select Entries 12 | | | | | | | |
|---|-------------|-----------|-------------|------------------------|--|-----------|-----------|
| Check Table... | | | | | | | |
| Table: /BTI/TE_INT_MAPP Displayed Fields: 8 of 9 Fixed Columns: 4 List Width: 0250 | | | | | | | |
| EXTSYS_NO | EXTSYS_NAME | DIRECTION | SEQUENCE_NO | TEFIELDREF | EXTERNAL_REF | KEY_FIELD | TECUSTFLD |
| 01 | HPSM | C | 0000000002 | /BTI/TE_TASK-CAPTION | MODEL-INSTANCE-HEADER-TITLE-CONTENT | | |
| 01 | HPSM | C | 0000000003 | /BTI/TE_TASK-PRIORITY | MODEL-INSTANCE-PRIORITY-CONTENT | | |
| 01 | HPSM | C | 0000000004 | /BTI/TE_TASK_TXT-TEXT | MODEL-INSTANCE-MIDDLE-PURPOSE-PURPOSE | | S21 |
| 01 | HPSM | C | 0000000008 | /BTI/TE_TASK-REFERENCE | MODEL-INSTANCE-HEADER-EXT_PROJECT_REF-CONTENT | | |
| 01 | HPSM | C | 0000000010 | /BTI/TE_TASK_TXT-560 | MODEL-INSTANCE-MIDDLE-REQUESTED_END-CONTENT | | |
| 01 | HPSM | C | 0000000005 | /BTI/TE_TASK_TXT-558 | MODEL-INSTANCE-HEADER-CATEGORY-CONTENT | | |
| 01 | HPSM | C | 0000000006 | /BTI/TE_TASK_TXT-509 | MODEL-INSTANCE-REQUESTOR_NAME-CONTENT | | |
| 01 | HPSM | C | 0000000011 | /BTI/TE_TASK_TXT-TEXT | MODEL-INSTANCE-DESCRIPTION_STRUCTURE-DESCRIPTION-DESCRIPTION | | TXI |
| 01 | HPSM | C | 0000000012 | /BTI/TE_TASK_TXT-559 | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | | |
| 01 | HPSM | C | 0000000013 | /BTI/TE_TASK_TXT-543 | MODEL-INSTANCE-IMPACT_ON_SUPPLY_CHAIN-CONTENT | | |
| 01 | HPSM | C | 0000000014 | /BTI/TE_TASK_TXT-542 | MODEL-INSTANCE-IMPACT_ON_PEOPLE-CONTENT | | |
| 01 | HPSM | C | 0000000015 | /BTI/TE_TASK_TXT-544 | MODEL-INSTANCE-COMPLEXITY-CONTENT | | |

4.9. Table: /BTI/TE_INT_CONV

The integration framework can also take into account value conversions. For instance where a value in ActiveControl could equal one thing maybe its corresponding value in an external system could be different although they both mean the same thing. **BTI/TE_INT_CONV** is used to map the two values together and address these issues; the conversion can happen either way, which means that the fields can contain either ActiveControl or the 3rd Party ITSM value.

| Field | Explanation of Field |
|--------------|---|
| EXTSYS_NO | Integration system number [from /BTI/TE_INT_SYST] |
| EXTSYS_NAME | External System Name [from /BTI/TE_INT_SYST] |
| EXTERNAL_REF | Field Reference |
| EXTFLD_ID | External System Field ID. This is the External System field value that the conversion needs to take place on. |
| EXTFLD_VAL | External System Field Value. This is the converted value that needs to be fed into the integrated system (or AC) Groups: GUIDs from /BTI/TE_GROUPS Types: GUIDs from /BTI/TE_TYPE Priority: Low = 1, Normal =2, High = 3, Emergency=4 Project: GUID from /BTI/TE_PROJ |

Example Customer Configuration

| Data Browser: Table /BTI/TE_INT_CONV Select Entries 38 | | | | |
|---|-------------|-----------|---|-----------|
| Check Table... | | | | |
| Table: /BTI/TE_INT_CONV Displayed Fields: 5 of 6 Fixed Columns: List Width 0250 | | | | |
| EXTSYS_NO | EXTSYS_NAME | DIRECTION | EXTERNAL_REF | EXTFLD_ID |
| 01 | HPSM | C | MODEL-INSTANCE-COMPLEXITY-CONTENT | 010 |
| 01 | HPSM | C | MODEL-INSTANCE-COMPLEXITY-CONTENT | 020 |
| 01 | HPSM | C | MODEL-INSTANCE-COMPLEXITY-CONTENT | 030 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-ASSIGNEDTO-CONTENT | EVD |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-ASSIGNEDTO-CONTENT | NSPO |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-ASSIGNEDTO-CONTENT | RDMEU |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-CATEGORY-CONTENT | 010 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-CATEGORY-CONTENT | 020 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 010 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 020 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 030 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 040 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 050 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 060 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 070 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 080 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 090 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 100 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 110 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 120 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 130 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 140 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 150 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 160 |
| 01 | HPSM | C | MODEL-INSTANCE-HEADER-SUBCATEGORY-CONTENT | 170 |
| 01 | HPSM | C | MODEL-INSTANCE-IMPACT_ON_PEOPLE-CONTENT | 010 |
| 01 | HPSM | C | MODEL-INSTANCE-IMPACT_ON_PEOPLE-CONTENT | 020 |
| 01 | HPSM | C | MODEL-INSTANCE-IMPACT_ON_PEOPLE-CONTENT | 030 |
| 01 | HPSM | C | MODEL-INSTANCE-IMPACT_ON_SUPPLY_CHAIN-CONTENT | 010 |
| 01 | HPSM | C | MODEL-INSTANCE-IMPACT_ON_SUPPLY_CHAIN-CONTENT | 020 |
| 01 | HPSM | C | MODEL-INSTANCE-IMPACT_ON_SUPPLY_CHAIN-CONTENT | 030 |
| 01 | HPSM | C | MODEL-INSTANCE-PRIORITY-CONTENT | 1 |
| 01 | HPSM | C | MODEL-INSTANCE-PRIORITY-CONTENT | 2 |
| 01 | HPSM | C | MODEL-INSTANCE-PRIORITY-CONTENT | 3 |
| 01 | HPSM | C | MODEL-INSTANCE-PRIORITY-CONTENT | 4 |
| 01 | HPSM | C | MODEL-INSTANCE-REQUESTOR_NAME-CONTENT | EVD |
| 01 | HPSM | C | MODEL-INSTANCE-REQUESTOR_NAME-CONTENT | NSPO |
| 01 | HPSM | C | MODEL-INSTANCE-REQUESTOR_NAME-CONTENT | RDMEU |



Userid's EVD, NSPO, ROMEU are configured in above customer example because the requestor field in HPSM must be updated with the Business Task requestor. If the user ids were the same in HPSM as in SAP, then no conversion would be required.




4.10. Table: /BTI/TE_INT_CLAS

This table is used to define Integration(s) and their corresponding Class; the classes are the bulk of the integration processing is done.

The Transport Espresso integration works on the principle of having a class for each external system that we need to integrate with.

| Field | Explanation of Field |
|-----------|---|
| EXTSYS_NO | Integration System Number [as defined in /BTI/TE_INT_SYST] |
| CLASSNAME | Integration works on the principle of having a class for each external system that we need to integrate with. |

Example Customer Configuration

| Data Browser: Table /BTI/TE_INT_CLAS Select Entries | | 1 |
|--|-----------|-----------------------------|
|  | | |
|  | EXTSYS_NO | CLASSNAME |
|  | 01 | /BTI/TE_CL_INTEGRATION_HPSM |

4.11. Table: /BTI/TE_INT_COND

This configuration table is pre-populated, and does not need to be maintained.









| Data Browser: Table /BTI/TE_INT_COND Select Entries 3 | | | |
|---|--------------------------------|--|--|
| <div> <div>         </div> </div> | | | |
| Table: /BTI/TE_INT_COND Displayed Fields: 3 of 3 Fixed Columns: 2 List Width 0250 | | | |
| CONDITION_ID | CONDITION_CLASS | DESCRIPTION | |
| <input type="checkbox"/> INT_ON_FIELD_UPDATE | /BTI/TE_CL_INTEG_ON_FIELD_UPD | Based on the update in standard/custom fields of business task | |
| <input type="checkbox"/> INT_ON_STAT_FORM_UPD | /BTI/TE_CL_INTEG_ON_TF_STA_UPD | Based on status update (Traditional) & form add/del from BT | |
| <input type="checkbox"/> INT_ON_STAT_UPDATE | /BTI/TE_CL_INTEG_ON_STAT_UPD | Based on status update (Traditional) | |


Figure: Out-of-the-box contents of /BTI/TE_INT_COND table

4.12. Table: /BTI/TE_INT_FLDE

/BTI/TE_INT_FLDE configuration table is to transcode any external ID to the corresponding business task reference.

| Field | Explanation of Field |
|--------------|--|
| EXTSYS_NO | Integration System Number [as defined in /BTI/TE_INT_SYST] |
| EXTFIELDNAME | Field that is required to be transcoded |
| DIRECTION | |
| EXTFUNCNAME | Function module name to perform transcoding |

Example Customer Configuration

| Data Browser: Table /BTI/TE_INT_FLDE Select Entries 1 | | | |
|--|-----------|--------------|-------------------------------|
|  | | | |
| Table: /BTI/TE_INT_FLDE Displayed Fields: 4 of 4 Fixed Columns: [3] List Width 0250 | | | |
| | EXTSYS_NO | EXTFIELDNAME | DIRECTION |
| <input type="checkbox"/> | 01 | REFERENCE | ZTE_DELHAIZE_REFERENCE_DECODE |


4.13. Table: /BTI/TE_INT_TRIG

/BTI/TE_INT_TRIG table is optional table. It only needs to be configured if the triggering strategy is to be based on the update in standard/custom field of a Business Task.

The condition ID for this strategy is INT_ON_FIELD_UPDATE.

| Field | Description |
|--------------|--|
| EXTSYS_NO | Integration system number [from /BTI/TE_INT_SYST] |
| CONDITION_ID | INT_ON_FIELD_UPDATE from table /BTI/TE_INT_COND |
| SEQUENCE_NO | Sequential number. |
| TE_FIELD | Possible fields are CAPTION, REFERENCE, GROUPID, TYPEID, TESTERID, PRIORITY, PROJECTID, STAT_DEPL, STAT_PLAN |
| IDENTIFIER | Corresponding values that are required to trigger the integration. |

Example Customer Configuration

| Data Browser: Table /BTI/TE_INT_TRIG Select Entries 5 | | | | | |
|--|-----------|---------------------|-------------|-----------|----------------------|
|  | | | | | |
| Table: /BTI/TE_INT_TRIG Displayed Fields: 5 of 5 Fixed Columns: [3] List Width 0250 | | | | | |
| | EXTSYS_NO | CONDITION_ID | SEQUENCE_NO | TE_FIELD | IDENTIFIER |
| <input type="checkbox"/> | 01 | INT_ON_FIELD_UPDATE | 0000000001 | 558 | 010 |
| <input type="checkbox"/> | 01 | INT_ON_FIELD_UPDATE | 0000000002 | 561 | 010 |
| <input type="checkbox"/> | 01 | INT_ON_FIELD_UPDATE | 0000000004 | STAT_PLAN | 00000000000000000000 |
| <input type="checkbox"/> | 01 | INT_ON_FIELD_UPDATE | 0000000005 | 558 | 020 |
| <input type="checkbox"/> | 01 | INT_ON_FIELD_UPDATE | 0000000006 | PROJECTID | 20018062100000002319 |



Before scheduling /BTI/TE_INTEG_TRIG to run as a regular background job, you should run it once manually with a Last Run Date/Time set for a recent date, to avoid lots of historical tickets being created. After running it once manually, create the variant with those fields empty.

4.14. Program : /BTI/TE_INTEG_TRIGGER

The trigger program /BTI/TE_INTEG_TRIGGER reads the updated the Business Task based on various conditions configured in the aforementioned table /BTI/TE_INT_COND.

The screenshot displays the 'Integration Trigger Engine' configuration window. It features a header bar with the title and a status icon. Below the header, there are several sections: 'Active Integration System(s)' with a dropdown for 'External System' and a dropdown for 'Integration trigger condition' (which is open, showing four options: 'Based on the update in standard/custom fields of business task', 'Based on the update in form(add/delete from business task)', 'Based on status update (Traditional) & form add/del from BT', and 'Based on status update (Traditional)' (highlighted)); 'Selection Options' with fields for 'Task ID', 'Task Type', 'Task Group', 'Task Reference', and 'Priority', each with a corresponding icon; a checkbox for 'Send previous task changes'; and 'Runtime Settings' with a checkbox for 'Run as though last run was on:', 'Run Date' field, and 'Run Time' field (set to '00:00:00').

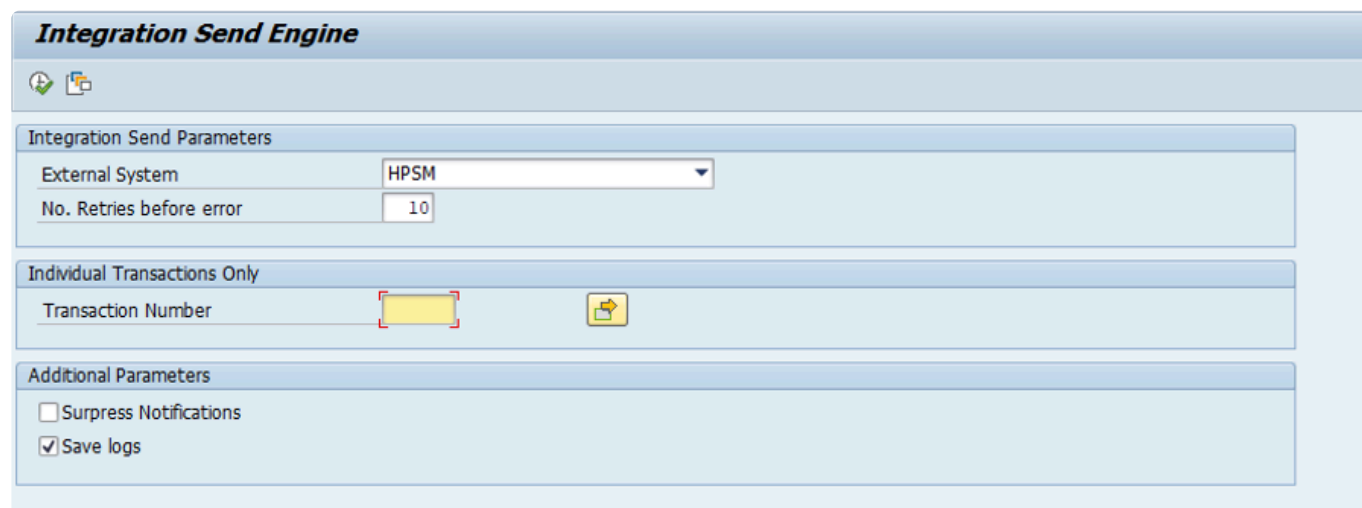
Figure: Trigger program /BTI/TE_INTEG_TRIGGER

- ✿ It is possible to define any triggering strategies from field "Integration trigger condition". If none selected, the default will be 'Based on status update(Traditional)'.

4.15. Program : /BTI/TE_INTEG_SEND


/BTI/TE_INTEG_SEND program will pick all the new & errored (until it reaches the 'no of retries') transaction record created from the TRIGGER program.

It should be scheduled to run in the ActiveControl Domain Controller as a regular (every 5-10 minutes) background job using TE_BATCH user, with the following criteria set.



The screenshot shows the 'Integration Send Engine' configuration window. It has a title bar with a green checkmark icon. Below the title bar is a section titled 'Integration Send Parameters' with two fields: 'External System' set to 'HPSM' and 'No. Retries before error' set to '10'. Below this is a section titled 'Individual Transactions Only' with a 'Transaction Number' field and a yellow button with a right-pointing arrow. Below that is a section titled 'Additional Parameters' with two checkboxes: 'Surpress Notifications' (unchecked) and 'Save logs' (checked).

| Integration Send Parameters | |
|-----------------------------|------|
| External System | HPSM |
| No. Retries before error | 10 |

| Individual Transactions Only | |
|------------------------------|---|
| Transaction Number |  |

| Additional Parameters | |
|---|--|
| <input type="checkbox"/> Surpress Notifications | |
| <input checked="" type="checkbox"/> Save logs | |

Figure: Send program /BTI/TE_INTEG_SEND.

5. Optional Configuration

User Exit: EXIT_0992

After the Change Request ticket is created in HPSM, one of the Customer Requirements was to update the HPSM change number and change phase in the ActiveControl Business Task.

This was achieved via a customer specific version of the sample user exit /BTI/TE_EXIT_SAMPLE_0992 switched on in table /BTI/TE_EXITC, and some associated configuration in /BTI/TE_TVARV table.

6. Other Information

Domain Controller downtime

If the ActiveControl Domain Controller is unavailable, then no Business Tasks will be getting updated that will require integration.

As a result Domain Controller downtime will have no negative impact on the HPSM system.

HPSM downtime.

If HPSM is down, then the send program will mark the relevant transaction records as a failed one to process later until it reached the maximum number of retries.

As such, during planned/unplanned downtime, it is best to pause the job scheduled for /BTI/TE_INTEG_SEND until such time as HPSM is back up.