ActiveControl - Administration Guide

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Basis Technologies

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1. Introduction

ActiveControl is comprised of the following modules. Please note that these will be referred to throughout the documentation as the relevant product features can be associated to one or more of these modules:

- **Transport Expresso (TE)** – Core transport and change management module where transports, tasks, workflows, approvals, testing, imports and notifications occur
- **ShiftLeft** – Automated analysis process to check changes and transports for things like sequencing, completeness, risks, issues, dependencies, impacts and quality
- **DevAnalytics** – A set of KPIs and metrics to delivers deep insight into the performance of the SAP development and change process. Key metrics report on Velocity, Cycle Times, Rework & Waste, Work in progress and Approval times
- **DevMax** – Management of mulit-track development processes enabling dynamic conflict detection and automated merge & retrotfit

This ActiveControl Administration Guide is divided into five sections:

- The first section discusses the client/server architecture of ActiveControl .
- The second section details the installation of ActiveControl .
- The third section details the core configuration of ActiveControl .
- The fourth section covers advanced ActiveControl configuration topics which may or may not be relevant, depending on your organisation's specific requirements.
- The fifth and final section mentions deployment considerations to help prepare for deploying ActiveControl within your organisation.

1.1. Transporting with ActiveControl

Before a transport request can be transported using ActiveControl, assuming the configuration has been maintained, a **Transport Form** must be completed for the transport request.

The transport form is a simple form that can usually be completed in less time than it takes to send an e-mail. The transport form is used to document and categorise the changes made. Importantly, the transport form associates the technically-oriented transport request to be transported with the corresponding business issues and/or requirements (referred to as **Business Tasks**). Although it can be an optional association, it is strongly recommended that transport requests be associated with business tasks as it:

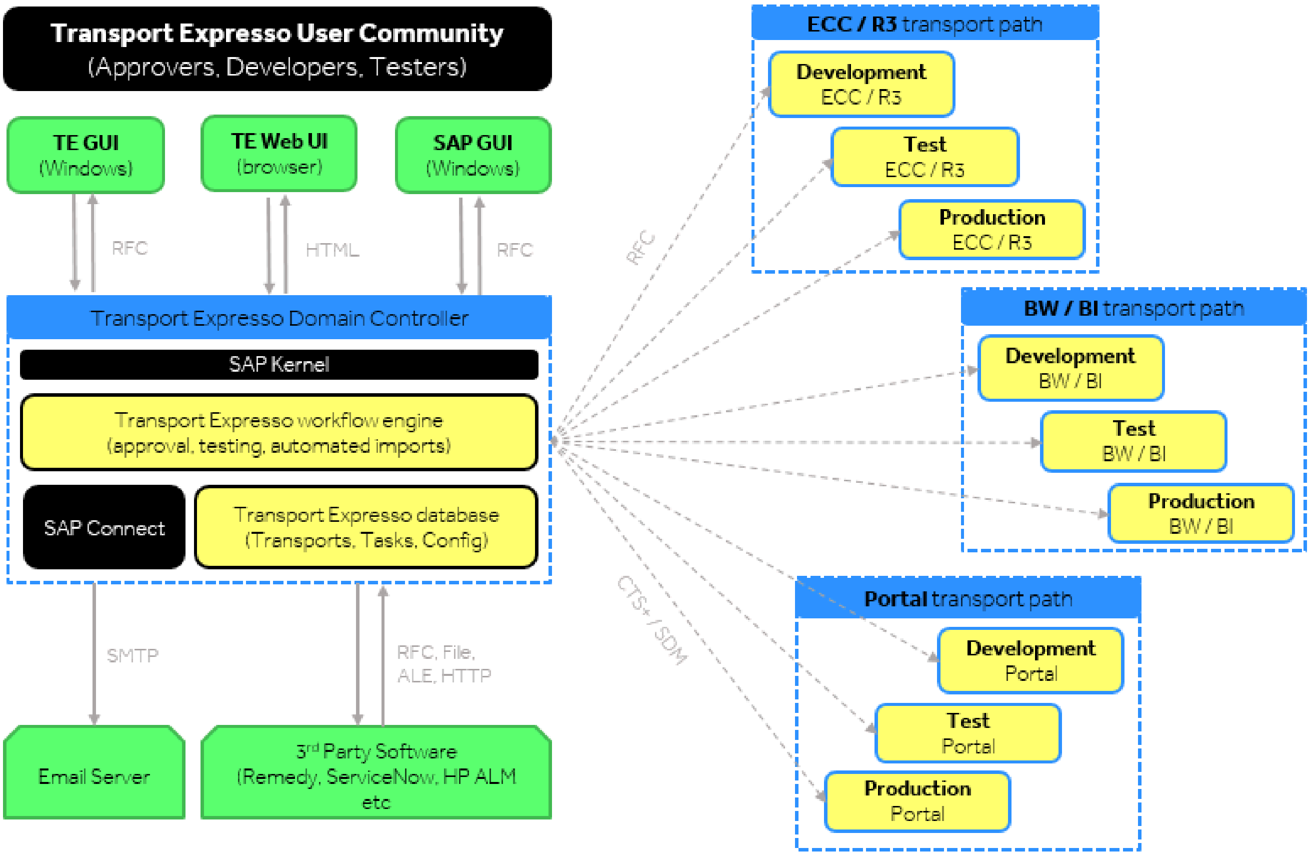
- Groups together technically separate but functionally-related transport requests that collectively implement the changes necessary to solve / deliver individual business issues and requirements.
- Allows for the progress and testing of the solution to a business issue or requirement throughout the system landscape to be monitored and reconciled as the solution makes its way through one or more development streams (such as in the case of branched development systems).
- Provides the business context for business users and team leaders involved in the change process (for example, from an approval perspective).

As explained further in the configuration section, the transport form associates the transport request with a transport path, which in turn determines which SAP systems the transport request will be transported to and whether approvals and testing are necessary along the way.

2. ActiveControl Architecture

The architecture of Transport Expresso can be broken down into: client software, a controlling SAP system and other participating SAP systems.

The picture below illustrates the high-level overall architecture of the product.



2.1. The Domain Controller

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 transport request information and to perform transports. These connections are made using SAP's remote function call (RFC) protocol.

It is recommended that a Solution Manager system be selected as the ActiveControl domain controller. Please note however that there is no requirement for the ActiveControl domain controller and TMS domain controller to be the same SAP system. In fact, a single ActiveControl domain controller can manage transports for multiple TMS domains.

Note: All ActiveControl users will require a user account in the domain controller system with a valid email address in order to receive email notifications. Each user must also be assigned with role **/BTI/TE:CTS_USER** to allow access to the relevant ActiveControl functions.

2.2. Participating SAP Systems

The ActiveControl server software must also be installed in each of the SAP systems that will have transports controlled by ActiveControl.

When necessary, the server software running in the ActiveControl domain controller connects to each of the participating SAP systems via remote function call. This might be necessary to gather transport request information, release transport requests or to perform import actions.

It is not necessary for any participating SAP system to share transport directories with any of the other SAP systems in the ActiveControl system landscape. If transport files are missing, the ActiveControl domain controller automatically requests the transport files, on demand, from the source SAP system and forwards them to the SAP system that the changes are to be imported into.

The only requirement is that the ActiveControl domain controller must be able to connect to each of the participating SAP systems via the remote function call (RFC) protocol.

Example 1: Multiple Development Streams with Separate Transport Directories

ActiveControl can support a system landscape with three development streams (such as ERP, CRM and BW), where each development stream has its own transport directories. That is, the development, test, production (etc.) ERP systems share a common set of transport directories, however these transport directories are not shared with any of the CRM or BW systems.

In this example, the ERP development system might be acting as the ActiveControl domain controller for all three development streams, even though none of the SAP systems in the ERP stream share transport directories with either the CRM or BW systems (and vice versa).

Example 2: Single Development Stream with Multiple Transport Directories

ActiveControl also supports a system landscape where the SAP systems of a single development stream do not share the same set of transport directories. It might be that the development and test systems share a common set of transport directories, but for security reasons, the production system has its own set of transport directories.

2.3. The Client Software

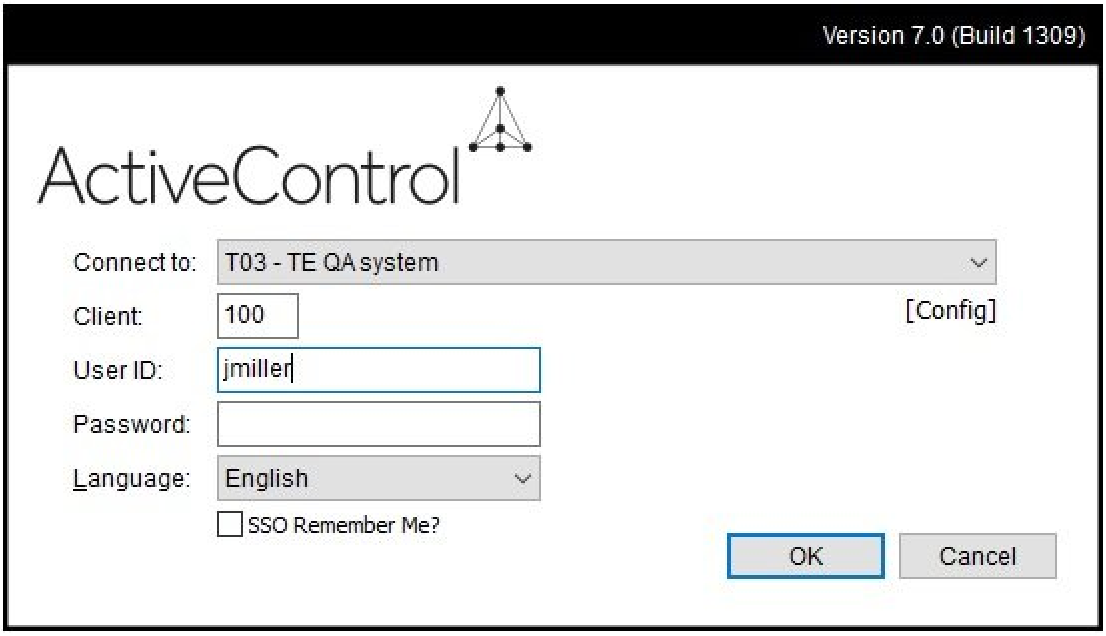
The client software comes in two forms: a richer Windows™ user interface for access to all features of ActiveControl, and a scaled-down user interface within the SAPGUI for simple tasks, such as completing a transport form when releasing a transportable transport request.

The Windows client software is a relatively small application, occupying less than 10MB of space. The software can be installed locally to each person's computer, or alternatively to a file server location for easier deployment.

The client software runs fine on computers that are capable of running SAP's standard (32-bit or 64-bit) SAPGUI software *(1)* .

The Windows client software connects to the ActiveControl domain controller via SAP's remote function call (RFC) protocol *(2)*. ActiveControl does not store any log-on information, including the user passwords.

The connection details for the ActiveControl domain controller are obtained from SAP Logon, via the saplogon.ini file for olderversions of SAP GUI, and via XML files for SAPGUI 740 onwards.



The logon details of client, user ID and password are the same as if the person were logging into the ActiveControl domain controller via the SAPGUI. Since all of ActiveControl's configuration and application data is client independent, it does not matter which client of the ActiveControl domain controller is specified.

(1) Although the client software does run on older 32-bit operating systems such as Windows NT 4.0 and Windows 98, only Windows version from Windows XP onwards are officially supported.

(2) Remote function call is a TCP/IP sockets-based protocol that utilises the 3300-3399 range of port numbers. For example, if the ActiveControl domain controller has system number 10, then the client software will communicate with it using TCP port number 3310.

2.3.1. Connecting Systems

ActiveControl uses the saplogon.ini files (for SAPGUI 730 and earlier, and XML file for SAP GUI 7.40 onwards, on the local PC to determine this list of systems to connect to.

ActiveControl reports the presence of both saplogon.ini and SAPUILandscape.xml files in:

1) Local ActiveControl folder (typically C:\Program Files (x86)\Basis Technologies\ActiveControl)

2) Windows directory

3) Directories stored in the registry by SAP GUI * Current User Local: HKEY_CURRENT_USER\Software\SAP\SAPLogon\ConfigFilesLastUsed\ConnectionConfigFile * Current User Server: HKEY_CURRENT_USER\Software\SAP\SAPLogon\ConfigFilesLastUsed\ConnectionConfigFileOnServer * Local Machine Local: HKEY_LOCAL_MACHINE\Software\SAP\SAPLogon\ConfigFilesLastUsed\ConnectionConfigFile * Local Machine Server: HKEY_LOCAL_MACHINE\Software\SAP\SAPLogon\ConfigFilesLastUsed\ConnectionConfigFileOnServer

4) SAPLOGON_INI_FILE environment variable (saplogon.ini only)

E.g. “C:\Program Files\Basis Technologies\ActiveControl\ActiveControl.exe”
“SAPLOGON_INI_FILE=C:\Windows\saplogon.ini”

5) %APPDATA%\SAP\Common folder (XML only) – this is the default location for the ‘local configuration path’.

Please be aware that ActiveControl will continue to look at old saplogon.ini files if the customer moves over to xml config files and the historical ini. file still exists, so users may need to check that both ActiveControl and SAP are using the same configuration files after doing a SAP GUI or ActiveControl upgrade.

3. Installing ActiveControl

ActiveControl is straightforward to install.

The server software is contained within a single transport and the Windows client software is installed using a standard setup program.

3.1. Installing the Server Software

The following installation steps assume that the reader is comfortable with the basics of the SAP Correction and Transport System.

The examples shown assume the system ID of your development SAP system is DEV.

1. Copy the transport file K9nnnnn.SID to the cofiles transport directory. As with the following transport files, make sure that the file is copied in binary mode and for UNIX systems ensure that the target filename is in uppercase and is not read-only.
2. Copy the transport file R9nnnnn.SID to the data transport directory.
3. Add the transport to the import buffer of the SAP system that you have selected to be the Transport Expresso domain controller.
   tp addtobuffer SIDK9nnnnn DEV
4. Import the transport into the Transport Expresso domain controller SAP system (note the use of unconditional modes 1 and 8).
   tp import SIDK9nnnnn DEV client=000 U18
5. Repeat steps 3 and 4 for the other participating SAP systems in your system landscape.

3.2. Removing the Server Software

SAP does not provide a simple method for removing the contents of a transport from a system. If necessary, Basis Technologies can provide you with a backup transport to remove the contents of ActiveControl from your SAP systems.

The backup transport has been created with ActiveControl, using our innovative backup capability. This capability allows you to undo the changes made to an SAP system by a transport by importing the corresponding backup transport.

Please contact support@basistechnologies.com to be sent a backup transport that will remove ActiveControl from your SAP systems.

3.3. Installing the Client Software

The ActiveControl client software is installed using a normal Windows setup program. Simply run the supplied setup program and follow the on-screen instructions.E

ActiveControl has been designed to require zero client installation on each team member's computer. We recommend that you install the ActiveControl client software to a network directory accessible by all of your team members. Once installed, you can simply distribute a shortcut to your team members.

When ActiveControl is installed on a local or network directory it creates the required files in a directory such as “C:\Program Files\Basis Technologies\ActiveControl\”. The ActiveControl.exe file will be located within this directory. This executable requires access to a sub-directory called “View Layouts” (so “C:\Program Files\Basis Technologies\ActiveControl\\View Layouts\”. Within this sub-directory are a number of layouts for each type of control point.

This sub-directory structure needs to exist for a network or Citrix installation from the location where the ActiveControl.exe is started from.

It is important that when the ActiveControl.exe is run it is run in the installed directory as it requires the “View Layouts” sub-directory to run properly otherwise errors will occur. A shortcut that points to the ActiveControl.exe in this location will work ok.

Additionally, when creating a shortcut, you can choose to default the details for the ActiveControl domain controller that the client software will connect to.
For example, the following shortcut command-line defaults ActiveControl to connect to the SAP system with SAP Logon ID “Production Support Development”. The logon client will default to 100.ActiveControl

…\TE.exe SAPLOGON_ID=”Production Support Development” CLIENT=100

3.4. Removing the Client Software

The ActiveControl client software can be removed by opening the Windows “Add or Remove Programs” control panel and choosing to remove the program titled “Basis Technologies ActiveControl”.

3.5. Next Steps

With the ActiveControl client and server software installed, you are ready to begin configuring ActiveControl, which can be done via the Windows client software. When you start the Windows client software, choose the SAP Logon system entry for the SAP system that you want to act as the ActiveControl domain controller and then your logon details for that SAP system.

The first time that you start ActiveControl after installing or upgrading, you may be asked to:

- Run the ABAP program **/BTI/TE_RCRUN** in the ActiveControl domain controller. This may be required to perform necessary internal initialisation and conversion steps. If the client software does not ask you to run this program then this step is not necessary.

- Enter a license key for the ActiveControl domain controller. The license key is determined using the system ID and installation number of the SAP system acting as the Transport Expresso domain controller. A license key is not required for the other participating SAP systems, or for the individual installations of the client software. Please contact Basis Technologies with these details (as shown by the client software) if you need a license key.

The ActiveControl configuration can only be changed by a designated ActiveControl Administrator. The first person to logon to ActiveControl following its installation is automatically defined as an administrator. The list of administrators can be changed afterwards if necessary.

Please refer to the following section “Configuring ActiveControl” for further details.

4. Configuring ActiveControl

This section guides you through the steps to configure ActiveControl. Please note that the seperate ActiveControl Quick Setup Guide document offers a higher-level step by step account of how to configure the tool.

The ActiveControl configuration is largely maintained through the ActiveControl client software itself, with the exception of some RFC destinations which must be maintained in the ActiveControl domain controller.

The configuration can be displayed by everyone, but it can only be maintained by team members who have been defined as a ActiveControl administrator. You can access the ActiveControl configuration, after logging on with the ActiveControl Windows client software, by selecting menu item Tools | Configuration.

4.1. Configuration Overview

In a typical scenario, each system in your SAP system landscape is defined as a target within Transport Expresso. The target defines the SAP system and the group of clients within that system that changes should be imported into. The team members who can approve changes are defined for each target, providing the flexibility (for example) to have different team members approve changes into your Test and Production systems.

Targets are assigned to transport paths via a simple drag and drop user interface. The transport path specifies the target systems that assigned transport requests will be imported into, the order of those imports and whether changes need to be approved and tested. The appropriate transport path must be selected when a transport form is completed for a transport request – though Transport Expresso is usually configured to automatically select the correct transport path.

Transport schedules can be defined to automatically import transport requests into target systems. A transport schedule defines the times when Transport Expresso will import transport requests that are queued for import via a background job.

4.2. Defining Targets

Transport Expresso is designed to import transport requests into all relevant clients of an SAP system in a single action.

In Transport Expresso, each group of clients within an SAP system is called a target; the properties of a target specify the following:

- The SAP system and clients that changes will be imported into.
- The behaviour of imports into the target.
- The team members who are authorised to approve changes into or out of the target.
- The properties of a target do not determine whether changes must be approved into, approved out of or tested in the target; those settings are made for each transport path. By enabling a target's inbox on a per transport path basis, you have the flexibility (for example) to require your implementation's changes to be approved before they are imported into a target, but to import changes from a central, global SAP development team automatically.

Targets are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Targets & Transport Paths tab]

NB: The same actual SAP system can be defined as more than one Transport Expresso target system. This can allow different processes to be controlled for the same systems. For example, if the same SAP systems are used for BAU and project changes it's a good idea to have a separate transport path for each which then uses a different set of target systems. This enables greater control and different approvers to be setup for each process.

4.2.1. Target Properties – General

Target

Property	Description
SAP System ID	System ID of the target SAP system
Description	Short description of the target
Group Label	An optional label to group together common types of systems (e.g. "Business Warehouse")
Role	This option allows you to group together separate SAP systems by their role, for the purpose of creating dependencies between transport requests on separate transport paths. Please refer to section Defining Target Roles to learn how to create a target role

Clients

Property	Description
Clients	The group of clients within the SAP system that transport requests will be imported into. Enter each client separated by a comma and a space (e.g. "100, 200, 300").
Execute client copy SCC1 automatically on transport	Check this option if you want SCC1 to be automatically done to other configured clients on transport form creation.

form creation	
Execute client copy SCC1 automatically on transport release	Check this option if you want SCC1 to be automatically done to other configured clients on transport release.

Miscellaneous

Property	Description
Source system for transport requests created within Transport Expresso	Check this option to allow team members to complete transport forms for transport requests created in this system. This option should be enabled for each development system in your system landscape. Transport requests without a transport form appear in a team member's list of open transport requests, in the main window.
Hide this target within Transport Expresso	Check this option to prevent this target from appearing in the main Transport Expresso window. You might enable this option when the SAP system no longer exists, or if the system does not exist yet. Hidden targets may still appear on a transport path.
Skip import queue for virtual targets	IF the system is unavailable or is a virtual target system use this option to skip the Import Queue, but still stop in the other control points for approvals.
Bypass all control points in this target (when system is offline)	This will skip all of the Import Queue, Test Queue and Inbox/Outbox for the system. In most cases, this is the option to use when a system is offline / unavailable.
After approval of items at the … on this target, tasks are automatically locked	Select one of the control points if Tasks are to be automatically locked after approval. This will prevent further allocation to transport forms.
After approval of items at the … on this target, automatically release transports	Select one of the control points if transports are to be automatically released after a specified control point approval.
Automatically run general analysis on testing approval	Check this option to run the General Analysis automatically as part of the 'Save & Approve Testing' action on a Test Queue

Consolidated Import Queues

Property	Description
Consolidated Import Queue Options	Does not require consolidated import queue options: Use this option for targets where consolidated import queues are not required Provides consolidated import queue for related targets: Use this option for targets that are to be used as a consolidated target Contributes to a consolidated import queue provided by: Use this option to link a target to a consolidated import queue target so the import queues can be shared. • Target: In this case the consolidated target must be selected • Consolidated queue visible?: This should be switched on to make the queue visible in the normal TE paths underneath the main import queue

	Please refer to the Consolidated Import Queues section for details about how to set this up.

4.2.2. Target Properties – Import Options

Import Options

Property	Description
Import Method	There are four standard TE Import Methods for importing transports i) **Import one request at a time**: this imports in the order that is displayed on screen. ii) **Fast Import (Import All)**: this imports using standard SAP Block import, again based on the order that is displayed on screen iii) **One request at a time – TE default sequence**: will import in the TE calculated sequence (ie the numerical order detailed in the Order column), regardless of the sequence of transports displayed on the screen. iv) **Fast Import (Import All) – TE default sequence**: will import using standard SAP Block Import in the TE calculated sequence (ie the numerical order detailed in the Order column), regardless of the sequence of transports displayed on the screen. Basis Technologies would generally recommend (iii) and (iv) import methods, with the latter particularly useful for project cutovers involving large numbers of transports. (i) and ii) work fine as long you have your Import History view on “By Transport”, and are sorting on the Order column. If you are doing a View by Project and Task, then you could run the risk of importing in an incorrect sequence. For Merge Targets where you are doing 1:1 Merge, it is better to set the Import Method to one request at a time.
Try to import transport requests in the order that they were imported into the predecessor target.	When determining the ideal import order of a selection of transport requests, Transport Expresso normally considers any dependencies specified on a transport request’s transport form before sorting the transport requests chronologically according to release date and time. This option tells Transport Expresso to consider the order that transport requests were imported into a particular “predecessor” target before applying the standard import order rules.
Force transport dependencies when importing in the same order as predecessor system	If dependencies that are manually set on a transport form are to override the predecessor target import order then set this flag
Scheduled Imports	Assign a transport schedule to a target to automatically import any transport requests in its import queue. Transport requests are imported in their ideal import order (as explained above). A transport schedule defines the times when an automatically scheduled background job will run to import waiting transport requests into the target. Please refer to section Defining Transport Schedules to learn how to create a transport schedule.

Optionally specify additional import schedules	If you assign a Import Schedule to a Target, you can use this option to add further Schedules to the Target
Suppress import analysis during scheduled imports	If you enable this option, Transport Expresso will not perform its standard import analysis checks when the scheduled import background job runs. You should only enable this option if the checks have already been performed – for example, when the transport requests were approved into the target system.
Import Jobs Scheduled by Transport Expresso	This option should be checked where TE Schedules have been created to automatically import transports
Orchestrated	This option should be selected where you want Transport Expresso to automatically continue an import after i) a dependant transport in another system has been imported or ii) a dependant manual step has been performed in the target
Continue importing transport requests when an import error occurs	By default Transport Expresso continues importing a selection of transport requests when it detects that an import error has occurred (such as a syntax error). If this option is enabled, Transport Expresso will continue importing the selection of transport requests when an import error occurs. Note that even when this option is enabled, Transport Expresso will stop the import process if a system error occurs (such as not being able to connect to the target SAP system). For Merge Targets where you are doing 1:1 Merge, it is better to leave this option unchecked
Automatically create backup transport requests	When this option is enabled Transport Expresso will create a backup transport request for the selection of transport requests that are about to be imported into a target SAP system. A backup transport request contains a copy of all things that are about to be updated as they were immediately before the import occurs. If an unexpected error occurs as the result of importing a selection of transport requests, the state of the target system can theoretically be restored by simply importing the backup transport request. However, this is not an automatic guarantee as there are exceptional situations, such as the deletion of content from an application table, from which only a database restore can recover. Use of this option when importing a large selection of transport requests is not recommended, as it can significantly slow the import process. In these situations, it is recommended to rely upon database recovery techniques. Please note that TE Backout is not relevant for BW or Java systems. It is currently only to be used in ECC/ERP type systems.
Timeout for delayed imports (minutes)	The way TE works is that it calls the TP command to import the transport and waits for a response. In some cases (due to a very long running import) the TP command will time out and therefore TE has no other option but to report a system error as it doesn't know what the actual status is. By setting a timeout for delayed imports TE will retry every minute for this many minutes and check if the import is now complete. Only after this time has elapsed will it then report a system error if the import is still not complete after that time.
Ignore System Id during import (CTS+ only)	For CTS+ systems the SAP system ID is different to the system that is the CTS+ domain controller. In this case the flag should be set to inform Transport Expresso that the target is a CTS+ system.

Merge / Parallel Development Streams

Property	Description
Perform conflict analysis against this target	When this option is enabled Transport Expresso will perform an additional remote analysis check for transport requests that are to be imported into this target system. The remote import analysis checks whether the content that is about to be imported has already been changed in the target system. This option is particularly useful for branched SAP development systems, when changes from one development system must be applied to other development systems.
Client to be used during conflict analysis	Client in which to check for changes and in which merge transport requests will be created. For performance reasons, the remote import analysis checks are only performed in one client of the target SAP system. Similarly, merge requests are only created in this client. You should specify the client of this target SAP system in which client-dependent configuration changes are made.
Require that transports with changes to SAP objects be manually merged	When this option is enabled, Transport Expresso will check if a transport to be merged contains changes to SAP standard development objects and if so, require that the transport be manually merged. This option is useful if you have branched development systems that are running different versions or patch levels.
Create a merge transport request in this SAP system after importing changes	When this option is enabled, Transport Expresso creates merge transport requests in this system for each selection of transport requests imported. This option is particularly useful for branched SAP development systems. Creating merge transport requests provides an easy way to apply the same changes to downstream systems of the branched development stream (e.g. the project QA system).
Fix renamed objects in merge requests	During import into BW systems some BW objects are automatically renamed. The default behaviour of the merge process is to copy the objects from the original transport into the merge transport but this doesn’t work for the affected BW objects. In this case Transport Expresso can run a rename process either ‘After Import’, ‘Before Release’ or ‘After Import & Before Release’ to perform the renaming process. This will edit the merge transport and renaming the objects to the new names in the merged system. ‘After Import’ is the default renaming method.
Add dependant routines and formulae for BW merges	Some BW objects should always be transported in their entirety. If, for example, a transformation was being transported this option would also add in all the dependent routines and formulas into the merge transport.
Default package for merges	When BW objects are renamed sometimes they are not assigned with an object directory entry (TADIR). The package specified in here can be used to create this to prevent warnings during merge transport release

objects	
Inherit merge transport owner from original transport (CTS+ only)	Check for Java systems to ensure Merge transport owner is same person as the original transport (for 1:1 Merge scenario)

4.2.3. Target Properties – Import Options II

Merge / Parallel Development Streams (Continued)

Property	Description
Destination portal web service port	In order for Transport Expresso to perform conflict analysis for portals objects it requires a web service to enable it to read the object version information. This is the port used by the web service for this purpose.
Transport target for merge requests	This sets the transport target for merge requests created by Transport Expresso allowing merge transports to be handled via a different transport route if required. If not set the default value from TMS will be used.
Base DATE for portal conflict analysis	For portals objects that have never been imported this is the base date for checking if any local changes have been made. If a change has been made after this date the object is considered to have been amended for conflict analysis purposes. Once an object has been imported into a system this import date / time is used for conflict analysis checks.
Base TIME for portal conflict analysis	Base time used in conjunction with the base date in the above process.
Conflict analysis for portal objects	Check to activate conflict analysis functionality for portals systems.
Merge Size	Select whether you want one merge transport for every originating transport (1:1), a big one with everything (Consolidated) or one per import run (By Import Run)
Merge Path	Select which path the transport forms for the merges will be created. Leave it blank if you want to create them manually.
Merge Type	Select which Type you want Merge Transport Form to be allocated to. If not set, the merge will get the type of the first transport merged.
Merge Group	Select which Group you want for the Merge Transport Form to be allocated to. If not set, the merge will get the group of the first transport merged.
Stop on BW post-processing error	This option controls whether TE Merge process will stop or continue when BW postprocessing fails
Merge Task	Select which Task the Transport Form should be associated with. If not set, the merge will get the task of every transport merged.

On Error	Controls whether TE Merge will stop, continue or skip any other errors encountered during TE Merge process.
For 1:1 merges automatically copy over transport form manual step details	Check if you want Manual Steps to be added in the Merge Transport Form in 1:1 merge scenario; *it not relevant to the Consolidated Merge scenario*.

Unconditional Modes

Property	**Description**
Unconditional Modes	These options allow you to apply various unconditional modes to all transport requests imported into this target system.

Custom Processing

Property	**Description**
Pre-import logical command	Transport Expresso supports transporting between SAP systems that do not share common underlying transport directories. Before importing a transport request, Transport Expresso checks whether the required transport files are available and, if not, automatically copies the files to the target transport directory. If further import pre-processing is required, you may use this option to invoke an SAP logical command (transaction SM69) to call your own script before the import is performed. You can choose whether the script is invoked on the domain controller or the target SAP system.
Post-import logical command	This option is similar to the previous option. It allows for a logical command to be called after a transport request has been imported into a target system. This option might be used for copying transport logs that were created by the import process back to the transport directories of the source SAP development system.

4.2.4. Target Properties – Inbox (Pending) Approvers

Property	**Description**
Inbox (Pending) Approvers	Here you specify those people who can approve changes into the target, from the target's inbox, or approve the transporting of changes from the target's pending queue. Approvers can be authorised to approve any transport request or only those assigned to particular groups. To add an approver, select either a specific group or All Groups and then click the Add button to choose an approver from the list of users in the domain controller SAP system.
Minimum number of approvals required	The number of approvers that must approve a change before the change moves to the next location on the transport path, such as from the target's inbox to its import queue.

4.2.5. Target Properties – Outbox Approvers

Property	Description
Outbox Approvers	Here you specify those people who can approve changes out of the target, from the target's outbox. For example, a test manager may wish to prevent the flow of changes into the production system until satisfied that appropriate levels of testing have been performed. Approvers can be authorised to approve any transport request or only those assigned to particular groups. To add an approver, select either a specific group or All Groups and then click the Add button to choose an approver from the list of users in the domain controller SAP system.
Minimum number of approvals required	The number of approvers that must approve a change before the change moves from the target's outbox to the next targets, as per the transport path configuration.

4.2.6. Target Properties – Analysis Types

Property	Description
Location	Here you can switch on the analysis types that are required for the control points of the relevant target system. This allows additional checks and validations to be performed at various points in the process. Select 'All' to switch on the analysis types for all the control points of the target. Select 'Inbox', 'Import Queue', 'Test Queue', 'Outbox' or any combination of those to switch on the relevant analysis type for the required target control point(s). Note: This is only available for the control points currently switched on for the target system in the transport path.
Analysis Type	Check the analysis types that are to be switched on for the selected control point(s). These are as defined in table /BTI/TE_ANLTYPE.
Settings (Attributes)	Highlight the relevant Analysis Type to see the attributes. Mandatory: Here the analysis type can be set as Mandatory or not. If set as mandatory then it will automatically be called by the General Analysis function and also during Import and Approval. Check Subsequent Target: In some cases for transports that are in a test queue or outbox the analysis might need to be performed on the subsequent system rather than the current system. If this is the case this option should be switched on. To set / unset the attributes, highlight the relevant attribute and choose Yes or No.
Settings (Parameters)	Highlight the relevant Analysis Type to see the attributes. Here the relevant parameters are displayed and can be set if applicable. This is based on what associated parameters have been set up in table /BTI/TE_ANLTYPEP for each analysis type. Table /BTI/TE_ANTYPEPT defines the parameter types. Table /BTI/TE_ANTYPEPV defines the parameter values. Set the parameters that are required for the specific analysis type. When the parameter is highlighted a caption will appear at the bottom of the screen to describe the function of that parameter. To set / unset the parameters, highlight the relevant parameter, right click and choose Add /

	Remove as required (or use the Add / remove buttons). When adding, select the appropriate value from the drop down or type the value directly if permitted.

4.2.7. Hints – Defining Targets

By default, targets appear in the order that they were defined.

This order can be easily changed by dragging the targets into the desired order in the main configuration window.

4.3. Defining Transport Paths

A transport path is a hierarchy of target SAP systems, determining the systems that a transport request will be imported into and in what order. The transport path also determines whether changes need to be approved and/or tested.

Each transport request is associated with a single transport path when the transport form is completed. The transport path is usually selected automatically, according to the default settings made here, and ensures that transport requests are imported into the same systems, keeping the landscape in sync.

Usually only one transport path is necessary per development stream. For example, you might have one transport path for transporting between the development, test and production R/3 systems, and another transport path for transporting between the development, test and production BW systems.

The following sections describe each of the transport path properties and then explain how to add targets to a transport path and set target-specific options.

Transport Paths are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Targets & Transport Paths tab]

4.3.1. Transport Path Properties

Property	**Description**
Transport Path	A short description of the transport path.
Group Label	An optional label to group common transport paths together.
Status	This field determines whether the transport path may be assigned to new transport forms. It also determines whether an inactive transport path (that can no longer be assigned to new transport forms) appear in the main Transport Expresso window.
Enable a pending approval	If this option is enabled, transport requests must be approved before they

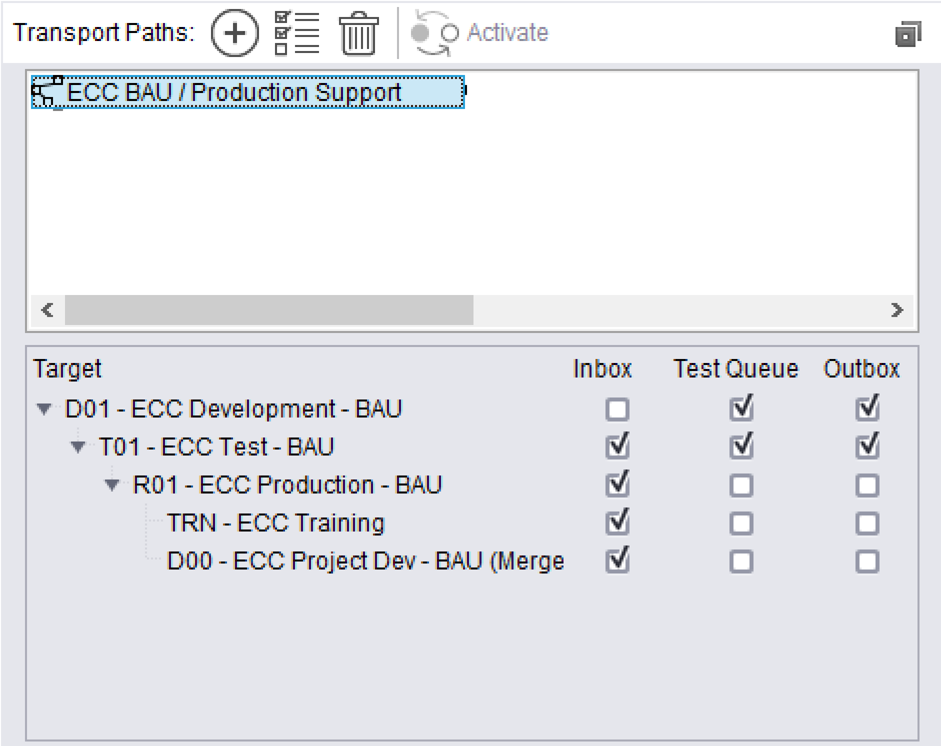
associated with target	can be approved into or imported into any target SAP systems. Transport requests waiting to be approved appear in the pending queue of the target system specified here.
Automatically release transports…	If this option is enabled, Transport Expresso will automatically release a transport request when a transport form is completed. However, if a pending queue is enabled for the transport path, then the transport request is only released after transporting has been approved.
When completing a transport form, check whether the changes conflict with others that are still being transported	When this option is enabled, Transport Expresso will automatically check whether there are other transports still being transported on the transport path with changes to the same content. The conflicting transports are displayed in a pop-up window.
Do not allow team members to complete a transport form if conflicting changes are found	This option can only be enabled when the previous option is enabled. When enabled, team members may not complete a new transport form if other transports with changes to the same content are still being transported on the transport path. This option does not apply to administrators.

For additional control, Transport Expresso allows combinations of valid and/or invalid source systems and clients to be defined for each transport path. When a transport form is completed for a transport request, Transport Expresso will only allow the transport request to be assigned a transport path if the source system and client of the transport request satisfies the transport path's source client restrictions

Property	Description
Valid Source Clients	In this field you may specify combinations of source systems and clients for the transport path. For example, if you specify combinations "DEV:100, DEV:200" then only transport requests created in either client 100 or client 200 of SAP system DEV may be assigned this transport path.
Invalid Source Clients	In this field you may specify combinations of source systems and clients that may not be assigned the transport path. For example, if you specify "DEV:300" then transport requests created in client 300 of system DEV cannot have this transport path assigned. The list of invalid source clients overrides the list of valid source clients, though it is not usually used in conjunction with a list of valid source clients.

4.4. Assigning Targets to a Transport Path

Once a transport path has been created, target systems need to be assigned. Select the transport path in the configuration window – the targets that are currently assigned will appear in the transport path tree



Next, drag each required target to the tree and either

1. Drop the target system onto an empty space to add the target system as a root node of the transport path, or
2. Drop the target system onto another target system that already appears in the transport path tree to build a hierarchy of targets.

Please note that it can cause issues if the same target system is present on more than one transport path so this is now prevented in Transport Expresso. If this is required the SAP system should be defined against an additional target system to allow this to happen.

When a transport form is completed (or a transport request pending transport is approved), the transport request automatically flows to the transport path's "root" targets. Once a transport request finishes processing within a particular target, it flows to the targets that follow on the transport path.

For example, if the Production target follows the Test target in the transport path tree, then a transport request that is assigned to the transport path will be imported into Production after it has been imported into the Test target – and potentially after the associated task has been tested and/or the changes approved out of the target (if these transport path options are enabled for the target).

The transport path also specifies whether transport requests need to be approved into, tested in and/or approved out of a target system (these are the Inbox, Test Queue and Outbox options respectively). Simply enable the desired options using the checkboxes that appear alongside each target system in the transport path tree.

4.4.1. Hints – Defining Transport Paths

- It is useful to add the development target to the root level of a transport path. This allows client-dependent transport requests to be imported into other clients of the development system.
- If a target option is disabled, then transport requests that are currently in the inbox (for example) still need to be approved. The option is only disabled when existing transport requests have been approved (or have had test results entered in the case of the test queue).
- To prevent control points from being accidentally removed a warning message will be displayed if any transports currently reside in the removed inbox, test queue or outbox. This allows the user to cancel the action.
- Also see the section “Defining Task Statuses” to see how these can be linked to transport path control points.

4.5. Defining Target Roles

A target role is used to enforce transport request dependencies between systems in different transport paths.

When creating a dependency between transport requests, Transport Expresso ensures that the dependent transport request will not be imported into a system until its dependencies have. With the configuration of roles, it is possible to assign multiple systems in different transport paths the same role. This will ensure that the dependent transport request is not imported into a system with a specific role until all its dependencies are imported into another system with the same role.

A practical application of the use of roles can be explained with an example landscape that contains an R/3 Enterprise and Business Warehouse transport path, each with Development, Quality Assurance and Production systems. By grouping the two Quality Assurance systems with a role “Quality Assurance” and the two Production systems with another role “Production”, it is possible for transport request dependencies to be upheld across the entire landscape. This can ensure a necessary change is moved into the BW Quality Assurance system, before a dependent change is moved into the R/3 Enterprise Quality Assurance system. Similarly the dependencies will be upheld when importing into the corresponding Production systems.

Target Roles are created and edited by TE Administrators via the TE Windows GUI screen configuration screen [on the Target Roles and Transport Schedules tab].

4.6. Defining Transport Schedules

A transport schedule defines a list of days and times when transport requests should be imported automatically.

When a transport schedule is assigned to a target, Transport Expresso automatically creates a background job that will import transport requests that are currently within the target's import queue. This background job runs in the Transport Expresso domain controller.

Transport Expresso ensures that the background job always executes according to the current version of the transport schedule. This includes deleting the background job if the transport schedule is no longer assigned to the target.

Transport Schedules are created and edited by TE Administrators via the TE Windows GUI screen configuration screen [on the Target Roles and Transport Schedules tab].

Each transport schedule has a description and optionally the user ID that the import should be scheduled under.

4.6.1. Adding Times to a Transport Schedule

The transport schedule can be defined on the Days and Times tab of the transport schedule. Times are periodic. For example, if the time "Monday at 5:30pm" is added, then an import background job will be scheduled to run every Monday at 5:30pm.

To add times, select the required day of week checkboxes and the required time interval. A list of days and times will be listed. Next, select the required times and then drag and drop them onto the appropriate transport schedule (appearing on the left-hand side).

Transport Expresso will automatically update the import schedule and associated background jobs for any targets that the transport schedule is currently assigned to.

4.6.2. Deleting Times from a Transport Schedule

To delete an individual time from a transport schedule, select the time in the transport schedule tree and press the Delete key.

Once again, Transport Expresso will automatically update the import schedule for any targets that the transport schedule is currently assigned to.

4.6.3. Hints – Defining Transport Schedules

- The name of a Transport Expresso import job is **TE_SCHEDULED_IMPORT_SID_nnnn**, where SID is the SAP system ID and nnnn is an internal number for a target. The background jobs run in the domain controller. Do not maintain or delete these jobs from within SAP.
- Transport Expresso provides a special “day” called Everyday that is equivalent to adding a time for every single day of the week.

4.6.4. Condition-based Transport Schedules

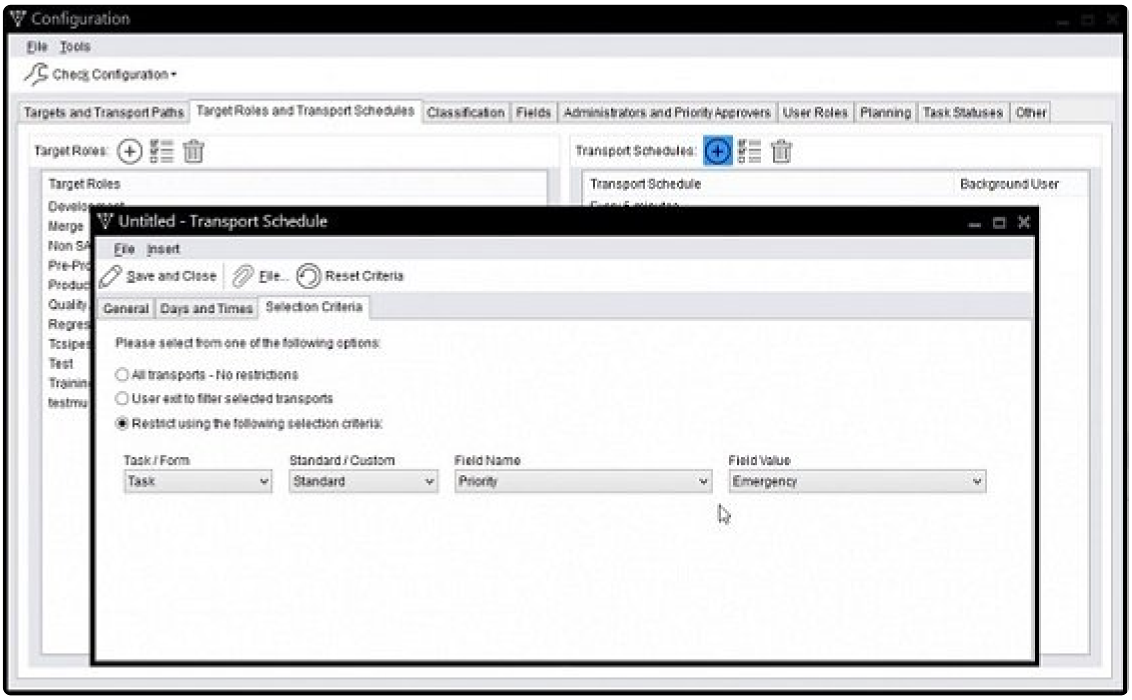
It is possible to create and assign multiple / conditional-based Import Schedules to Target systems.

This can be helpful in various scenarios, for example if you want Emergency Fixes to be imported at short notice, in advance of the normal import window of other fixes and changes.

Creation of condition-based Import Schedules

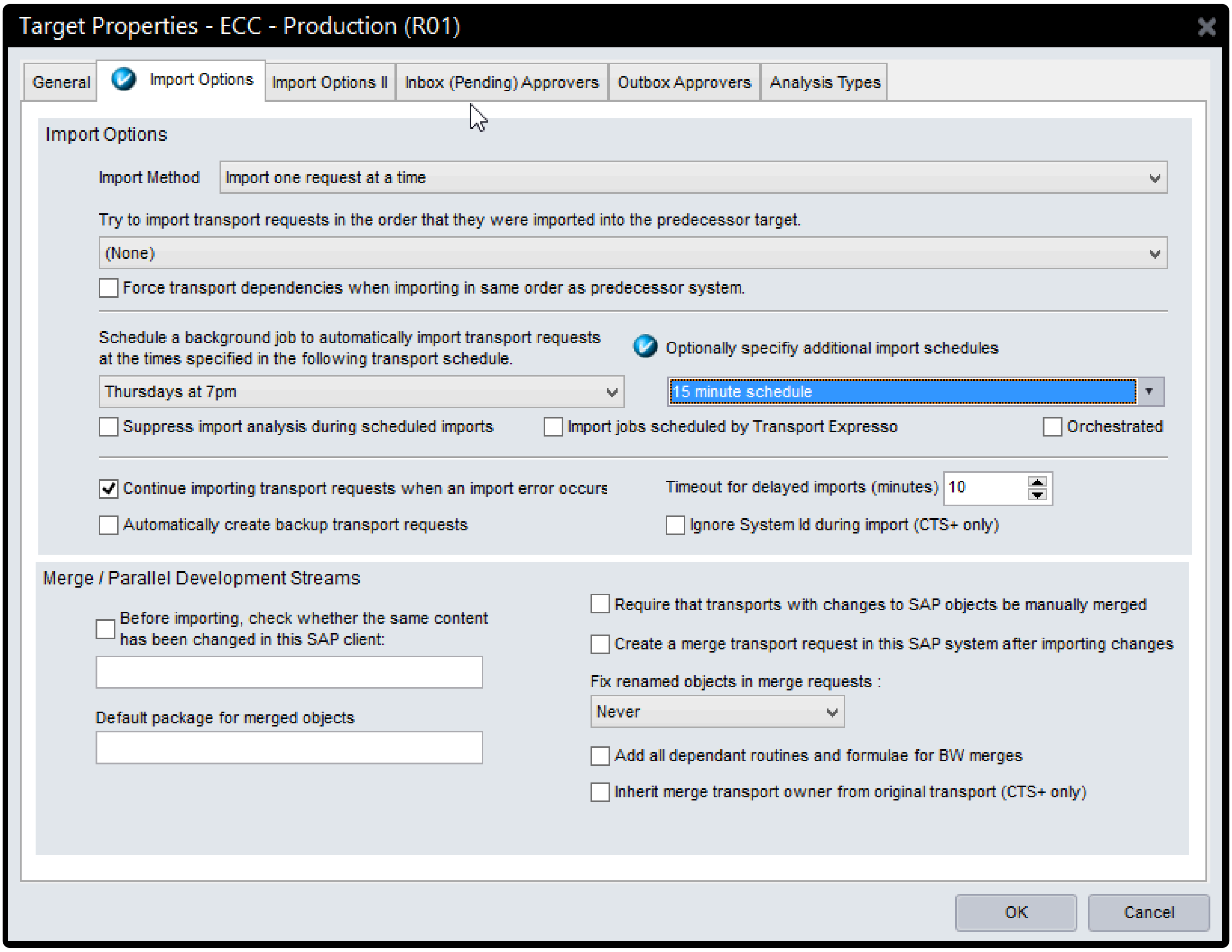
Condition-based Schedules can be configured within the **Selection Criteria** tab of the Transport Schedule screen within the Windows GUI.

Conditions can be based on both standard and custom fields at both a Task and Transport Form Level.



Configuration against Targets

The addition of additional schedules to SAP systems is done within the *Import Options” tab of an individual Target within the Windows GUI.



4.7. Defining Projects

Projects are used to define high level grouping of tasks based on a business phase. When a task is created, it needs to be assigned to a project.
Projects can be used to differentiate between an upgrade project, further releases or functional projects. Defining and using projects give you further control of change management reporting through Transport Expresso.

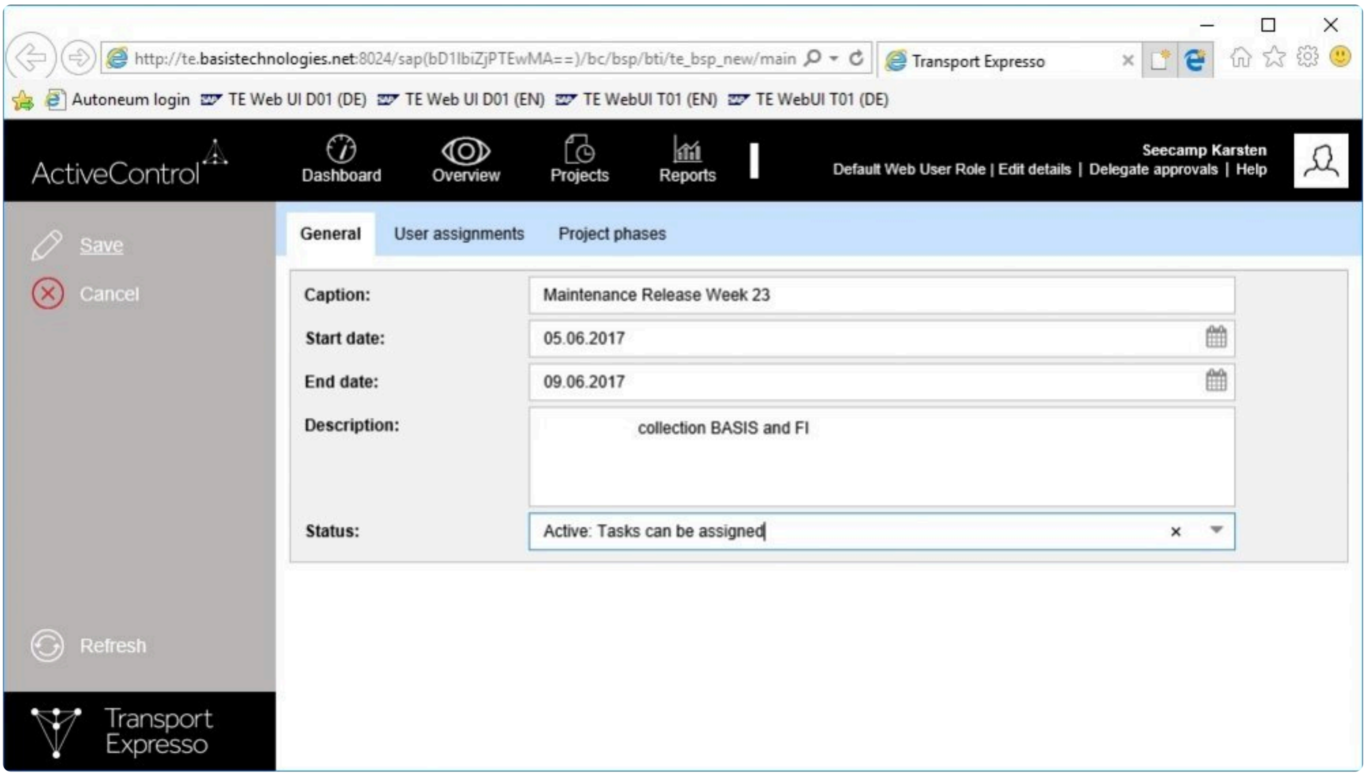
Projects are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Classification tab]
Or use the WebUI:

> Switch to the Projects tab.
> Select ‘Create Project’ from the menu bar on the left.

Projects can also be created/edited by TE Administrators and other authorised users via the Tools | Project Configuration dropdown on the main TE Windows GUI screen.

Projects that are no longer required or finished can be marked as inactive so they no longer appear during task creation and change.

Picture: Project maintenance with the WebUI



4.8. Defining Groups

Groups are used to arbitrarily group transport requests and tasks (units of work). Typically, groups are used to classify the transport request or task by functional area or team. For example, groups can be used to differentiate Finance changes from Procurement changes.

A group may either be assigned to a transport request or assigned to a business task, as indicated by the Type property. Once a group has been created, its type cannot be changed. Groups that have been used in the past but have now become obsolete may be hidden so that they can no longer be assigned.

Recall that it is possible to define approvers by *transport form group*. For example, an approver may be authorised to approve Finance changes into a target system, but not Procurement changes.

Groups are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Classification tab]

4.9. Defining Types

Types are used as another way of classifying tasks or transport requests. For example, a task type can differentiate enhancements from fixes.

A type may either be assigned to a task or assigned to a transport request, as indicated by the Applies to property. Once a type has been created, this field cannot be changed. Types that have been used in the past but have now become obsolete may be hidden so that they can no longer be assigned by selecting the Hide this Item toolbar option.

Types are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Classification tab]

Examples for Business Task types are: Business Change, Incident Fix, Minor Change, Project Change. Examples for Transport Form types are: Customization, OSS Note, Merge, Authorizations, Workbench development .

4.10. Defining Text Fields

It is possible to define additional free text fields on the general tab of both the transport form and task.

When configuring a text field, you define the name of the text field, whether it is for tasks or transport forms, and its maintenance status. The name of the text field is the text that is displayed beside the new field on the transport form. The maintenance status defines whether the field contents are optional or required when creating the transport form. It is also possible to configure the maintenance status to be hidden in the case that the field is no longer wanted on the transport form.

If the maintenance status of the field is set to hidden, then any transport forms that were previously created that still contain text for that field, still display this information. If the transport form is then changed, and the contents of the field deleted, then the documentation field is no longer displayed.

Text fields are created and edited by TE Administrators via the TE Windows GUI screen configuration screen [on the Fields tab]

4.11. Defining Custom Fields

It is possible to enhance both a Transport Form and a Task with custom fields that are not simply text.

This functionality supercedes “Text Fields” as described in the previous section.

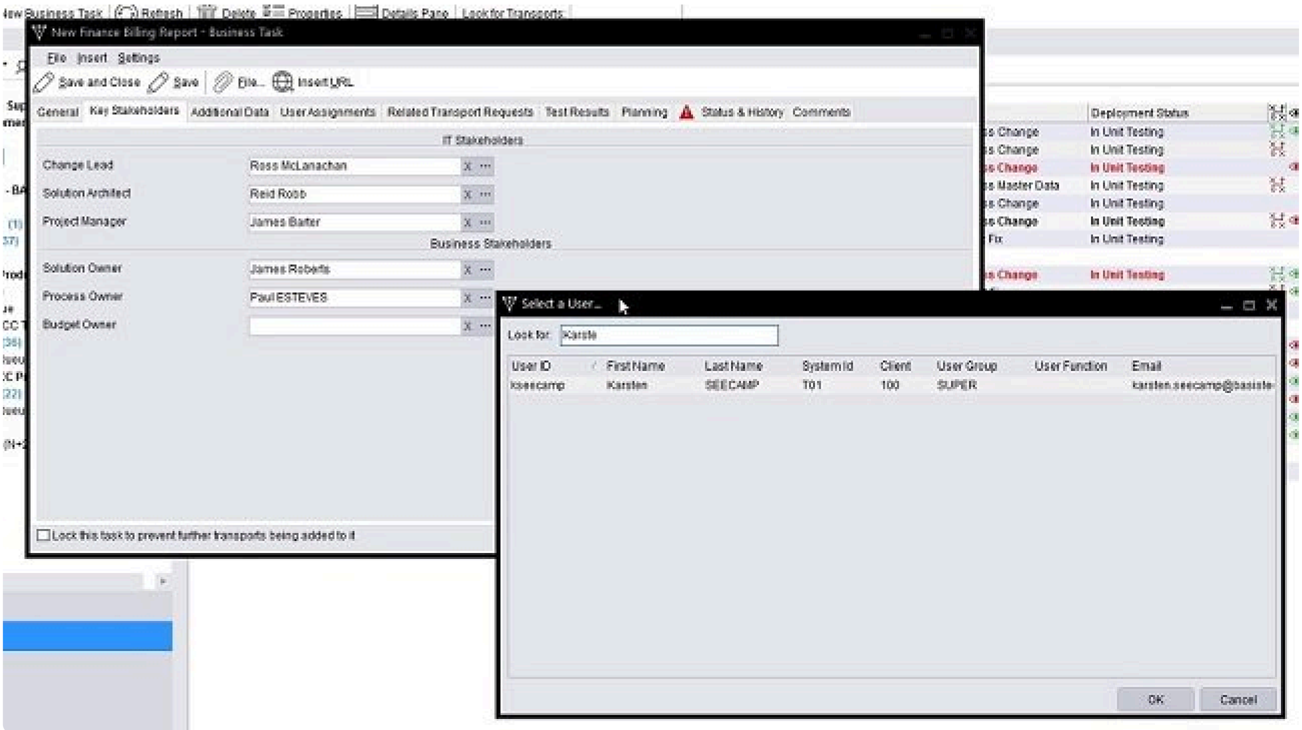
Custom Fields are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Fields tab]

Custom fields allow the administrator of Transport Expresso to add much more enhanced types of custom fields to either a Transport Form or a Task:

1. Text fields – You can now control the number of rows and number of characters that can be entered for a particular Text field
2. Drop-down List – You can now allow the user to specify that a field is a single field drop-down list. The possible values the user can enter can be specified (e.g. 0001 = United States, 0002 = United Kingdom etc).
3. Selection List – A selection list is similar to a drop-down list but the user can see multiple possible selection lines at the same time; in current TE, it is not possible to select multiuple values.
4. Option/Radio-Button
5. Check-box – can be created with alignment options of Left of Text, Right of Text or Aligned.
6. Date
7. Time
8. User Selection – pulls user list from those setup in SU01 in the TE Domain Controller.

With Active Control a ‘Name Selection’ field type has been added to Transport Expresso custom fields.

This field type has been added for customers that have been using text fields to record the names of people – eg ‘Project Managers’ or ‘Key User’ . Using a Name Selection field avoids the need to manually type out the users name (and the associated risk of typos / misspelling), with the additional benefit ithat the information can also potentially be used by other areas of Transport Expresso, for example custom user exits.



All custom fields can be marked as optional, mandatory or hidden.

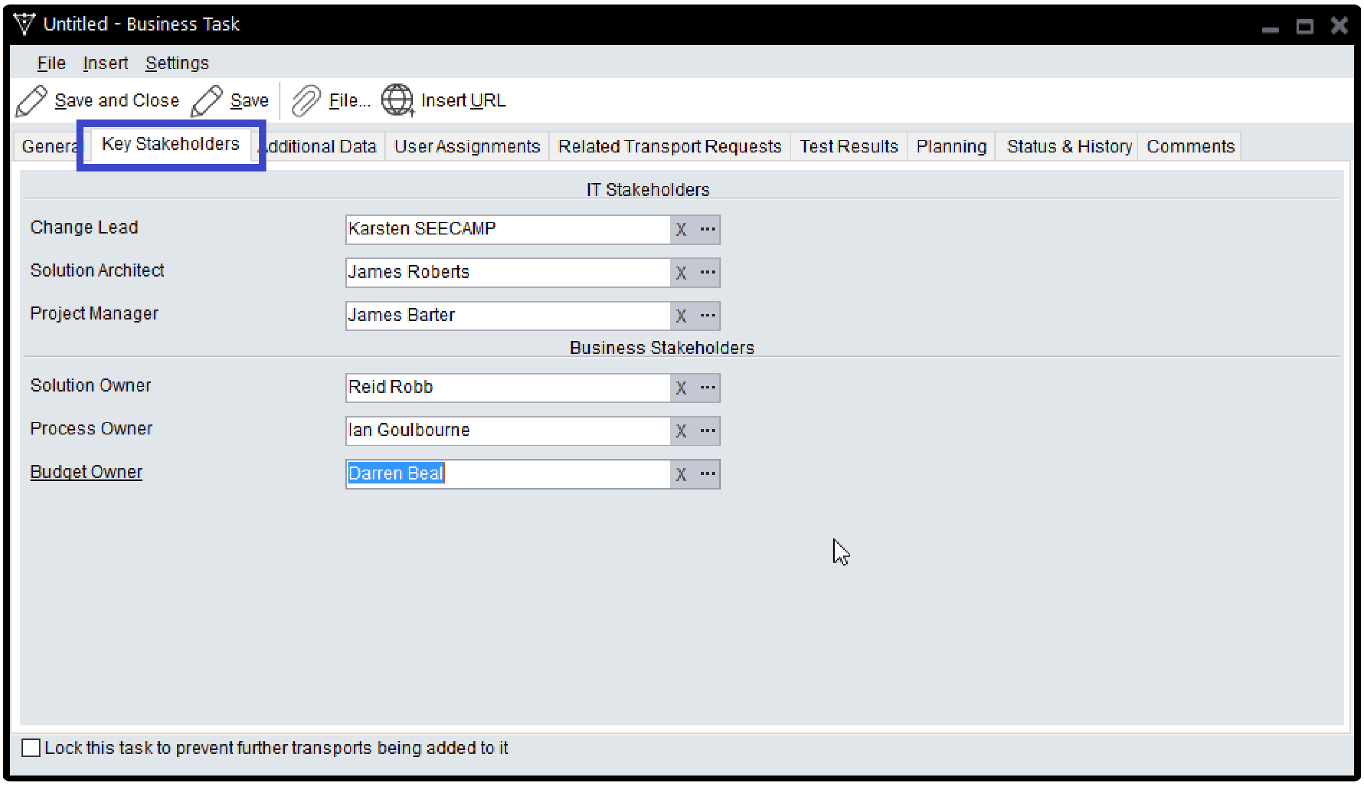
4.12. Defining Custom Tabs

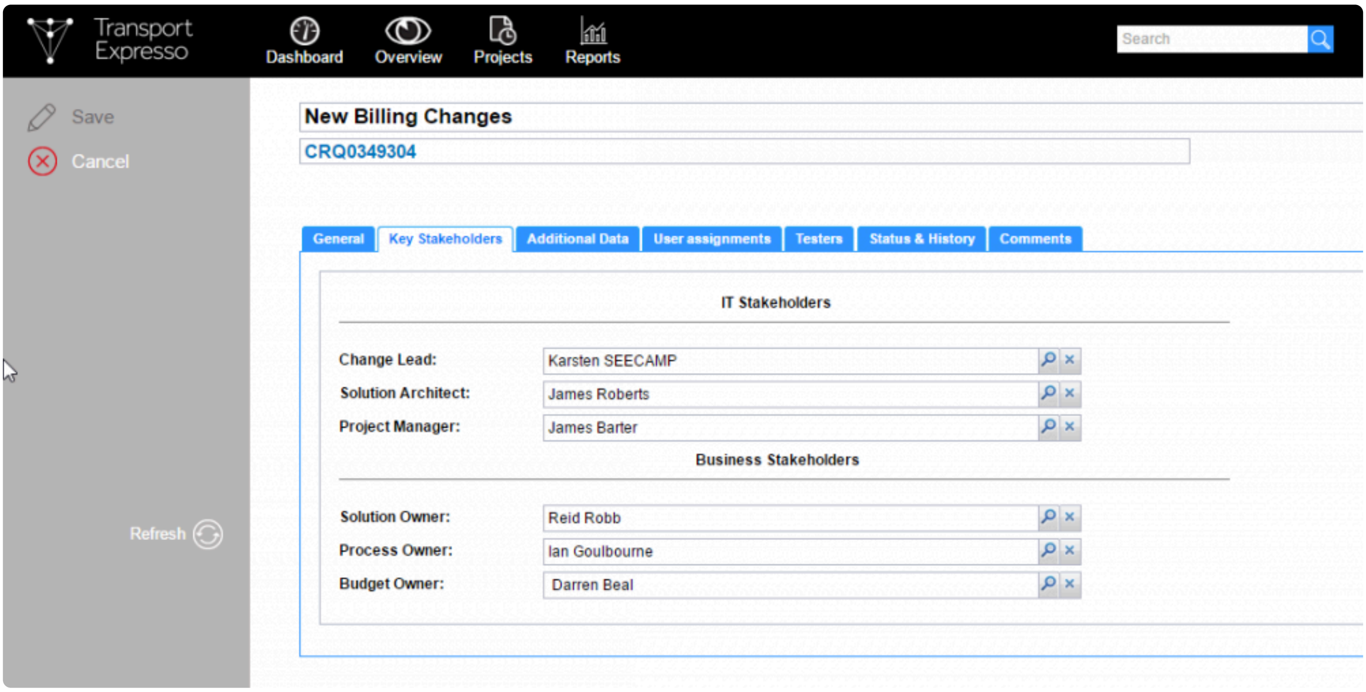
ActiveControl 7.00 introduces the capability to add new custom tabs on which custom fields can be added.

This can be useful for customers that want to add a large number of custom fields within Transport Expresso to track additional information to what is possible with the out of the box standard fields.

Custom tabs are visible on the Business Task in the TE Windows GUI and TE Web UI and also in the SAP GUI.

After the Custom Tab is created, new or existing custom fields can be allocated to the Custom Tab.

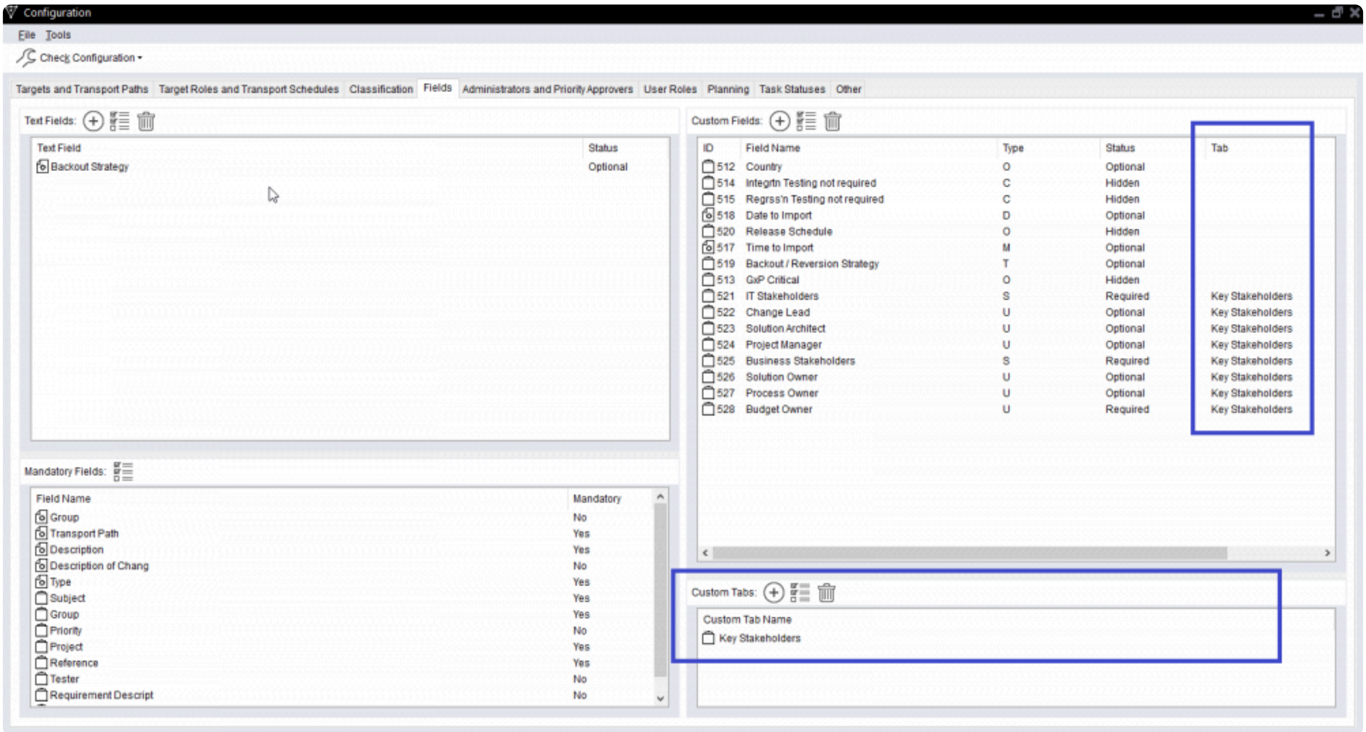




Configuration Steps

Custom Tabs can be created via new **Custom Tab** section of the Fields tab in the TE Windows GUI configuration screens.

After creating the new custom tab, custom fields can then be assigned to the custom tab via new tab dropdown. If left blank, the custom field will appear on the 'General' tab by default.



4.13. Defining Mandatory Fields

It is possible to mark the standard Transport Form and a Task fields as mandatory fields if required.

Some fields must be mandatory by default for the application to function correctly but others can be made mandatory if required. For example, the Group or Type might always need to be specified. If a mandatory field is not populated the Transport Form or Task cannot be saved.

Custom Fields are created and edited by TE Administrators via the TE Windows GUI screen configuration screen. [on the Fields tab]

4.14. Defining Administrators

An administrator is a team member who can maintain the Transport Expresso configuration and perform all activities within Transport Expresso including approvals, imports and test result entry / approval.

TE Administrators are added/removed by existing TE Administrators via the TE Windows GUI screen configuration screen. [on the Administrators and Priority Approvers tab]

4.15. Defining Priority Approvers

Priority approvers may approve changes into or out of any target. Additionally, when approving a selection of changes, they may choose to approve with priority, which means that the changes will not need to be approved into or out of any other targets, once the priority approval is given.

Priority Approvers are added/removed by TE Administrators via the TE Windows GUI screen configuration screen. [on the Administrators and Priority Approvers tab]

4.16. Defining Custom Labels

Custom Labels are the ability to rename the standard Transport Expresso Task field labels (e.g. Decryption, Subject etc.) with your own text.

For example, it is possible to rename the Task field “Group” with “Work Package” to indicate to users that this is the purpose of this field. Similarly, the Task field “Type” might be renamed with the label “Country” once again to indicate that this is the purpose of this field.

The fields whose labels can be over-written at the Task level are:

1. Description,
2. Subject,
3. Group,
4. Reference,
5. Project,
6. Type and
7. Priority.

Note that the current functionality only supports Task fields and thus not Transport Forms. It is envisaged that Transport Forms will also be offered this functionality in a future release of Transport Expresso.

Custom Labels are added/removed by TE Administrators via the TE Windows GUI screen configuration screen. [on the Classification tab]

4.17. Defining Task Statuses

Task statuses are defined by TE Administrators via the TE Windows GUI screen configuration screen [on the Task Statuses tab].

A Task can have two different kinds of status configured.

1. Deployment status
2. Planning status

Planning status’ are only required for customers using the Task Planning capability of Transport Expresso.

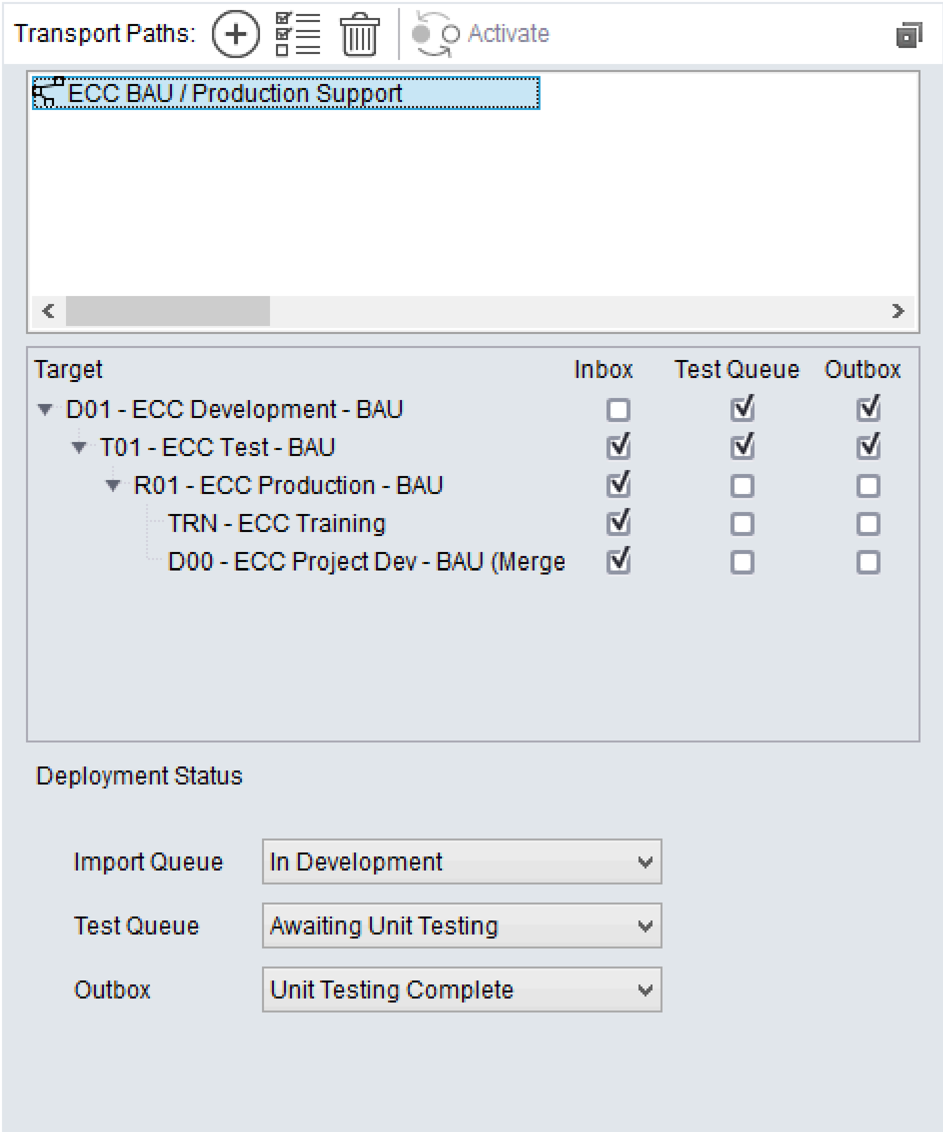
For both, a sequence must be defined to indicate the order in which the status is to be applied

4.17.1. Deployment status

This status relates to where in the Transport deployment process the Task is.

Each control point within a path can be configured with a Task status. Whenever a Task, or any of the Transports attached to it are changed or move along a transport path, the Task Deployment status is updated. The Deployment Status assigned to each control point in a transport path is configured as he target is associated to a Path during path configuration.

A Deployment Status can be configured for each control point enabled (Inbox, Test Queue and Outbox).



When TE calculates the Deployment status of a Task, it takes into account all of the Transport Forms assigned to the Task and the Deployment Status Calculation configuration (this is detailed in the Other Configuration Options section of this document).

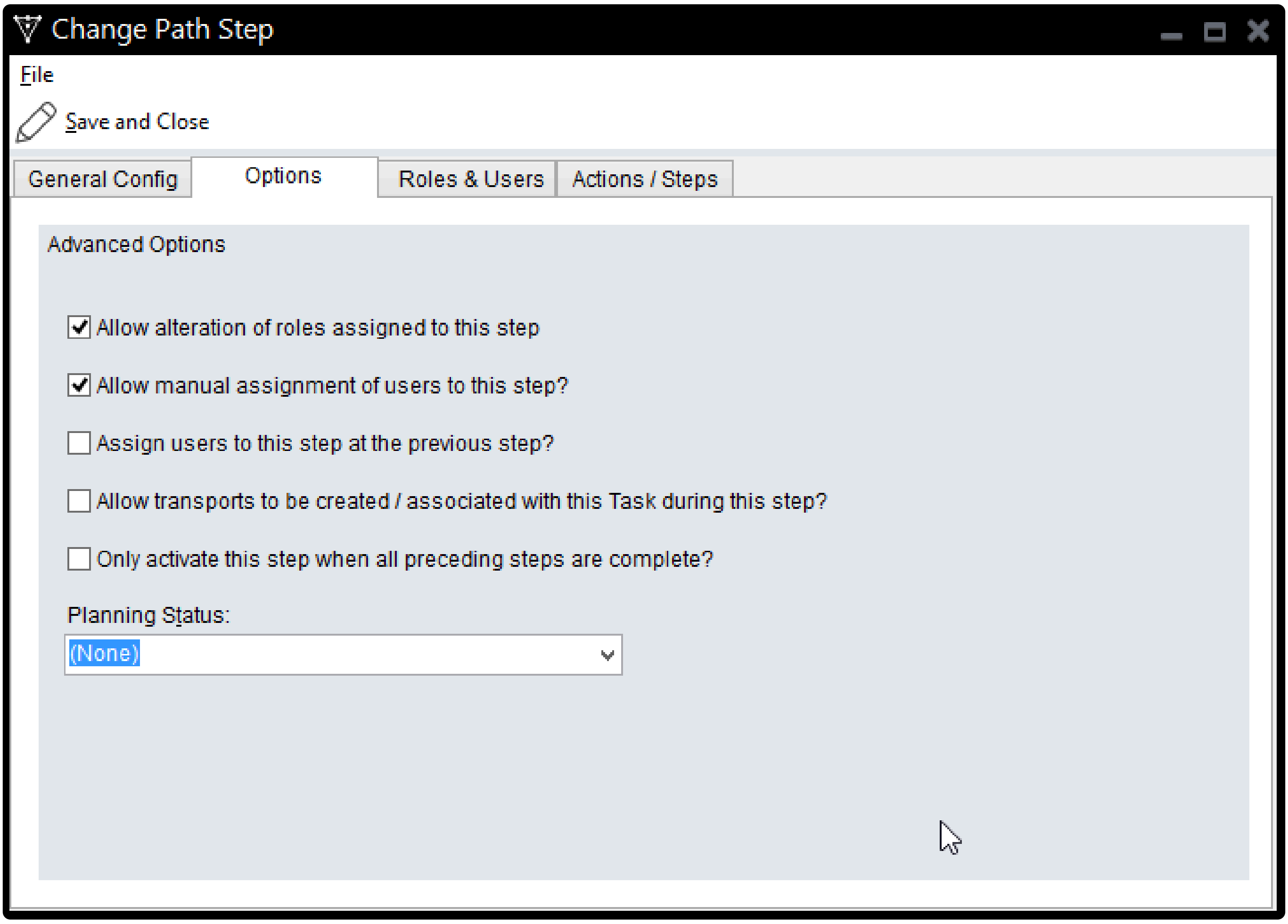
If transports are in several control points, TE will use the status with either the lowest or highest sequence number depending on this configuration option. If all transports assigned to the Task are finished in all paths, TE will set the system Deployment Status of COMPLETE.

4.17.2. Planning Status

This status indicates where a Task is in the planning process.

Each planning step in a Change Path can have a status associated with it; every time a Task is changed, its planning status will be updated.

The Planning Status assigned to each change path step is configured in the Options tab of the step (in Planning configuration).



When Transport Expresso calculates the Planning status of a Task, it takes into account all of the active Change Path Steps for the Task and the Planning Status Calculation configuration (this is detailed on the Other Configuration Options section of this document).

If more than one step is active, TE will use the status with either the lowest or highest sequence number depending on this configuration option. If all steps in all Panning Change Paths for a Task are complete, TE will set the system Planning Status of COMPLETE.

4.17.3. Defining Task Statuses – Hints

Changing the configuration of new or existing statuses will not trigger updates to existing Tasks in TE.

Once changes to the Task Status configuration have been completed, execute the report /BTI/ TE_RUTASK_STATUS_UPDATE.

This will re-calculate the planning and deployment statuses for each selected Task.

4.18. Other Configuration Options

Other Options

Option	Description
Require transport forms to be assigned to related tasks	When a transport form is completed for a transport request, it is always possible to assign the transport request to one or more tasks, such as a request for a new report or a logged production support problem. Tasks provide greater visibility of related transport requests and associate technical changes with business requirements. Tasks are necessary if test results are to be entered. Enable this option to prevent a transport form from being saved if the related tasks section has not been maintained.
Allow team members to delete transport forms of transport requests that have been imported	By default, in order to avoid losing transport history, only an administrator may delete the transport form of a transport request if the transport request has already been imported into some target systems. Enable this option to override this behaviour.
Configured testers only to complete testing	When this option is enabled Transport Expresso will only allow users allocated as testers in the Task to “Save and Approve” testing. This will also validate testers assigned to specific systems and system roles. If not set anyone can complete the testing for a task. Note: In all cases users must be allocated with the TESTAPPROVE activity (Authorisation Object: Y_TE_TASK – Task Activities) to allow them to “Save and Approve” testing.
Enable “Add to Control Point” function	This option switches on the “Add to Control Point” functionality that allows transport forms to be assigned to control points in the transport path. This can be an inbox, outbox or test queue as required. This is used when a re-approval is required for the relevant transports.
Cache remote transport data	This option enables the caching function that stores details of remote transports on the domain controller. This means that Transport Expresso does not have to make RFC calls to the remote systems to obtain the transport data. Performance is therefore improved when accessing transport requests without a transport form and also when viewing transports in control points. Note: Once switched on the Transport Expresso GUI will need to be closed and re-started for the caching to take effect.
Hide Transport originating in ‘hidden’ systems	This option will not show transports if the target is set as hidden
Request password re-entry on Approval	This option allows TE customers to specify whether password must be re-entered during any approval,. for increased security
Automatically delete SAP transport buffer after transport import	This option can be used by those customers that do not want to leave the SAP transports in the STMS import buffer after they have been imported via Transport Expresso
Auto-generate Task	This is useful for customers that do not use another Change Management

Reference with prefix:	ticketing tool, and are looking for a way to generate a unique identifier for each Business Task within Transport Expresso. It is possible to configure a 3-character prefix for the sequential number.
Require reason on transport Approve/Import Anyway	A popup will ask the approver to enter a reason when the 'Approve Anyway' button is pushed.

Analysis Mode

Option	Description
Analysis Mode	Select whether you want to (i) Disable cross path conflict checks (ii) Enable cross path conflict checks for non-hidden Targets (iii) Enable cross path conflict check for all Targets

This is where you specify whether you want the Transport Expresso Conflict Analysis Checks to only look down the path in which you are doing the analysis, or alternatively analyse all paths (based on the system you are in and its allocated target role etc). The default value (and generally what it should be set-to for most customers) is: "*Enable cross-path conflict checks for all targets*". This ensures that any conflicts are picked up in the situation where multiple transport paths are being used by an ActiveControl customer for the same SAP system, and also when a user has manually set cross-system/path dependancies (e.g. a BW transport on an ECC transport etc.).
Customers that have a lot of hidden/legacy systems/paths set up in ActiveControl might want to exclude the hidden systems to help the performance of the analysis checks, but as a general rule, no customer should ever really need to disable the cross path conflict checks completely.

Task Statuses

Option	Description
Planning Status Calculation	If more than one planning status could be applied to a task, this configures which one the system should assign. Either the one with the earliest sequence or the one with the latest sequence
Deployment Status Calculation	If more than one deployment status could be applied to a task, this configures which one the system should assign. Either the one with the earliest sequence or the one with the latest sequence

Non-SAP Deployment and Manual Activities

Option	Description
Non-SAP Deployment and Manual Activities	Specify what system where empty 'dummy' transports for Manual Activities are created. These transports will not be imported anywhere

Currency

Option	Description
Currency	Allows TE customers to specify the primary reporting currency within the organisation, for some optional meta-data / reporting

4.19. RFC Destinations

Transport Expresso uses SAP's remote function call technology for communication between the various systems in the system landscape, such as when releasing or importing a selection of transport requests. Thus an RFC destination must be defined for every target SAP system that the Transport Expresso domain controller communicates with (including the Transport Expresso domain controller itself).

An RFC destination contains the technical information required to call a function (program) remotely. When the remote destination is an SAP system, the technical information specifies the target application server and the logon details (client, user ID, password and language).

Each RFC destination required by Transport Expresso has the name "TRANSPORT EXPRESS SID" where SID is the system ID of the system you are connecting to from the TE Domain Controller. For example, if your implementation has development, test and production SAP systems called DEV, TST and PRD; then the following RFC destinations must be created in the domain controller:

- TRANSPORT EXPRESS DEV
- TRANSPORT EXPRESS TST
- TRANSPORT EXPRESS PRD

In addition, an RFC destination should be created on the Transport Expresso Domain Controller, pointing back to itself. So if your Domain Controller system SID is SOL, then an RFC Destination called TRANSPORT EXPRESS SOL should be created, pointing back to the SOL system.

RFC destinations are maintained with SAP transaction SM59.

4.19.1. RFC Destination Settings

RFC destination	**TRANSPORT EXPRESS**
Connection type	3 – SAP connection
Load balance	No
Target host	Hostname of an application server of the SAP system
System number	The corresponding system number of the application server

Description	Any suitable description (required)
Language	EN for English
Client	The main client of the SAP system
User	User ID in the specified SAP client
Password	Password of the specified SAP user ID

4.19.2. Hints – Defining RFCs

- Transport Expresso may update the client field of an RFC destination at runtime. This may be necessary when releasing a transport request or creating a backup request as these actions are client-specific. In these situations, the specified user ID and password must be valid for all possible clients.

- When defining these RFC destinations, we recommend that you create and assign a special System user ID called **TE_RFC**. A system user ID is a special type of SAP user ID that cannot be used to access the SAP system via the SAPGUI. Therefore by using a system user ID, potential security holes, such as a remote logon to your production system, are avoided. Another advantage of a system user ID is that the password does not expire.

- For SAP GUI processing of the transport form and task screens the domain controller RFC user must be setup as a Service user type as a system user doesn't support popup screens.
  Finally, since the user ID requires authority to both Transport Expresso functions and many CTS functions and background jobs, we recommend that you assign Transport Expresso role **/BTI/TE:CTS_RFC** and standard SAP security role **SAP_BC_TRANSPORT_ADMINISTRATOR**.

- The RFC user in the TE Domain Controller also requires also reqiores **/BTI/TE:CTS_ADMIN_USER** and **/BTI/TE:CTS_ADMIN**.

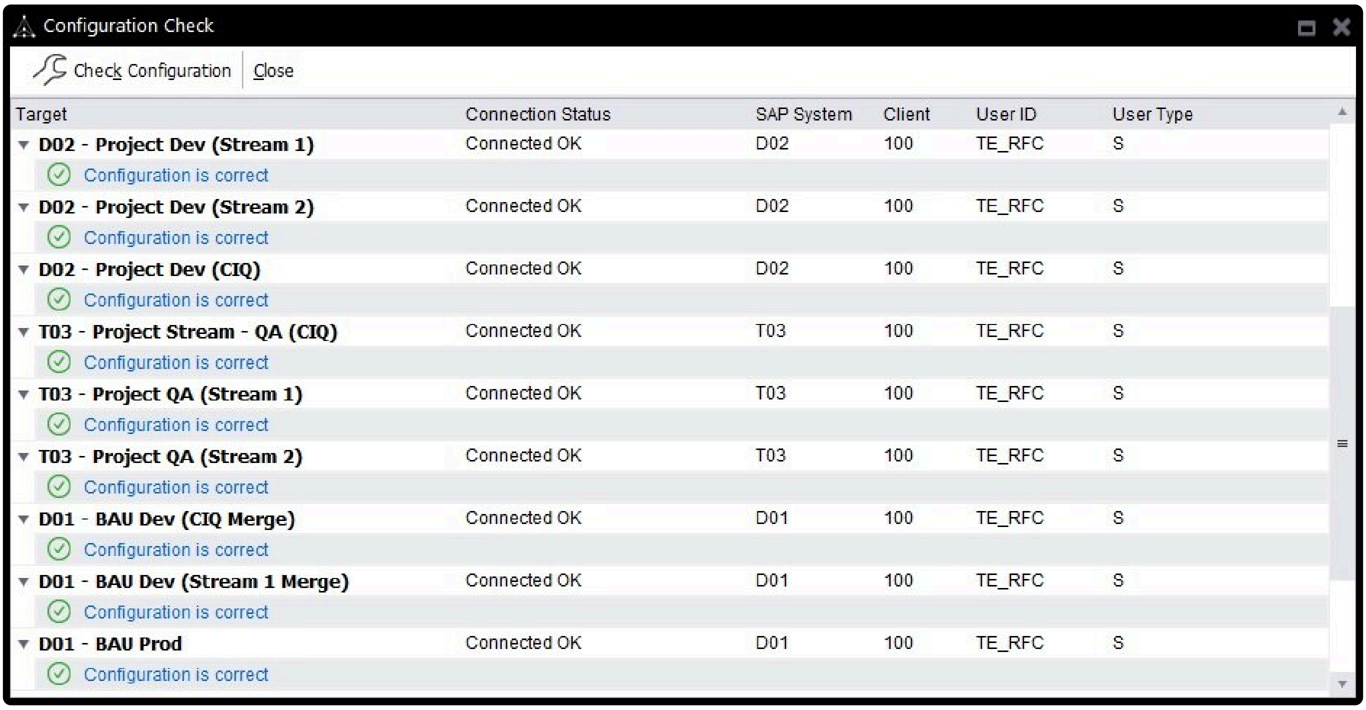
4.20. Checking the Configuration

When you have finished making changes to the Transport Expresso configuration we recommend that you check the configuration by clicking on the* Check Configuration* toolbar button (Menu *Tools -> Configuration*).

The configuration check window will appear and automatically perform a number of connection and validation checks in each of the SAP systems defined as an active target. Targets that are hidden are not checked.

In particular, the configuration check will verify that the RFC destinations that have been maintained in SAP transaction SM59 are correct and connect through to the matching target SAP system.

Check Configuration result list



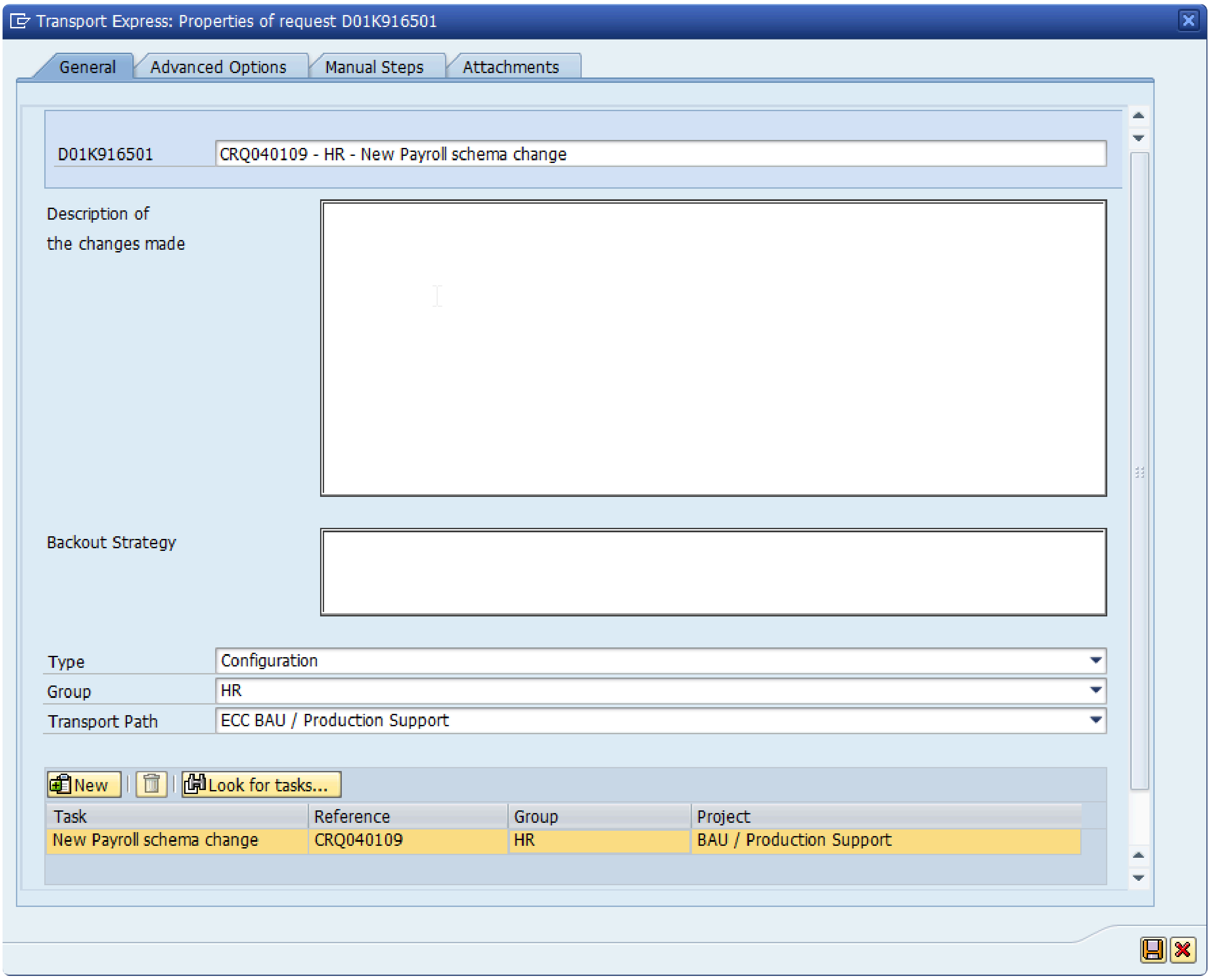
5. Advanced Configuration Topics

5.1. Completing Transport Forms and Tasks in the SAP GUI

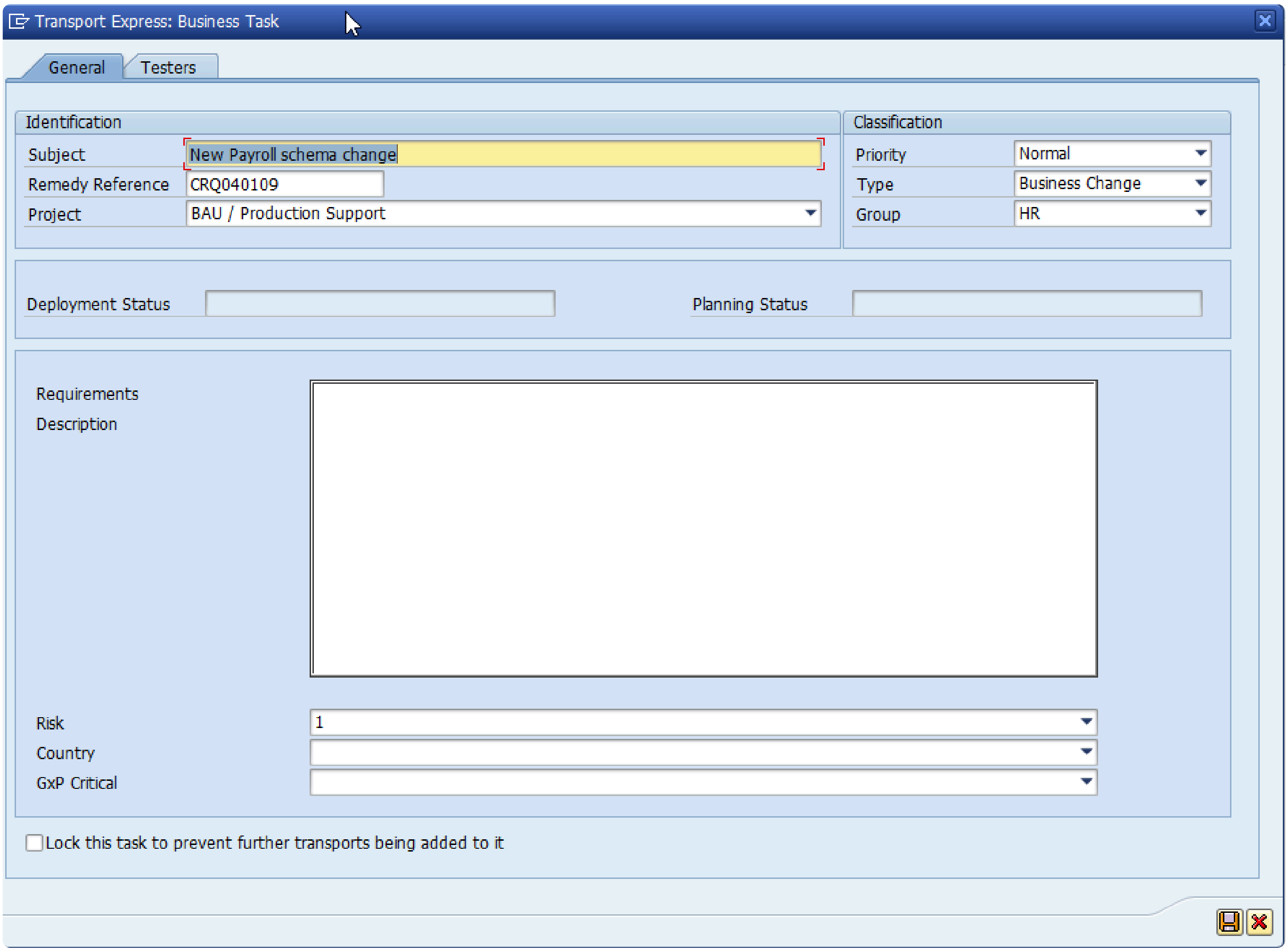
Transport Expresso has the ability to be able to create a transport form and create/assign a task within the SAP GUI when the transport is released or when objects are attached to a transport.

This then avoids the need to login to Transport Expresso to create the transport forms and the approval process is then started as normal. All custom fields and user exits are processed as normal and access to this is controlled via the TE authorisations.

Transport form creation screen in the SAP GUI:



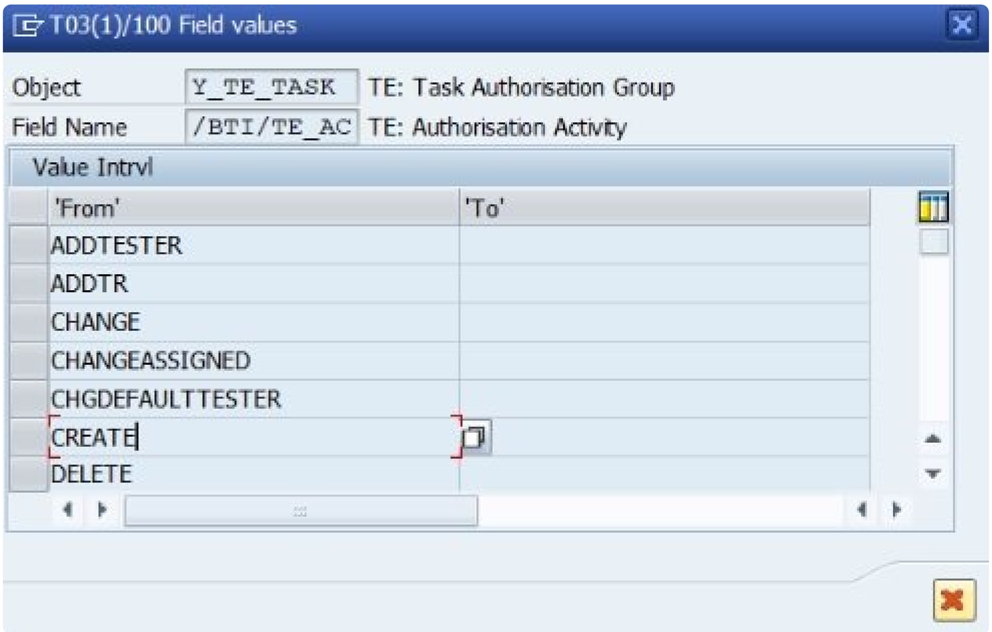
Task screen in the SAP GUI:



Please note: The ability to create a Business Task from the Transport Form window is controlled by the authorization object *Y_TE_TASK* with the value CREATE.
If you want the developer to assign the Transport Form to an existing Business Task, but not to be able to create a new one, then restrict the authorization by removing the value CREATE.

Developer usually gets the role /BTI/TE:STD_DEVELOPER_AUTHS assigned.

Authorization object with available values



5.1.1. Configuring SAP GUI Processing

The activation of the SAP GUI processing is controlled via table **/BTI/TE_CONTROL** in each development system. In here an "Active" entry must exist for the relevant users to switch on the processing.

If an alternative RFC destination is to be used (e.g. for testing purposes), entries can be maintained in table **/BTI/TE_CONTROL** for the relevant users and these must be marked as "Active". This forces Transport Expresso to use the specified RFC destination rather than the default TRANSPORT EXPRESS CONTROLLER one.

To switch this on for ALL users an Active entry is required in table **/BTI/TE_CONTROL** with a BLANK username. This will use the Active flag / RFC destination for all users in this case.

5.1.2. Switching on SAP GUI Processing

To switch on each of the development system functions table **/BTI/TE_ACTIVE** must be maintained in the Transport Expresso domain controller system. An entry is required in this table for each development system along with the functions to be switched on:

- Transport is released
- Transport is first used
- In-Line Conflict Analysis
- Show object keys in In-Line Conflict Analysis
- Unit test on release

Transport is released: To implement the functionality to create Transport Forms and Tasks when releasing transports in the SAP GUI, the **BADI /BTI/TE_BADI_TR_FORM** must be activated in the relevant development systems using SE19. This BADI is delivered active and pre-coded to check the "Transport is released" activation flag on the domain controller.

Transport is first used: To implement the functionality when objects are first added to a transport in the SAP GUI, activate the field exit TRKORR in the relevant development systems (See the section on In-Line Conflict Analysis in this document for details on how to do this). The code delivered in function module FIELD_EXIT_TRKORR_SAMPLE should be copied into the field exit FIELD_EXIT_TRKORR function module to achieve this. This then checks for the "Transport is first used" and "In-Line Conflict Analysis" activation flags on the domain controller.

In-Line Conflict Analysis: This functionality switches on Inline Conflict Analysis, to identify conflicts across parallel development systems

Show object keys in In-Line Conflict Analysis: This option results in Inline Conflict Analysis showing object keys in the results. If this is activated, then In-Line Conflict Analysis must also be active

Unit test on release: This option switches on Automated Unit Testing within the SAP GUI. Note that there is some configuration that needs to be done as well, this is detailed later in the Administration Guide.

In all cases, an RFC destination called **TRANSPORT EXPRESS CONTROLLER** must be created, linking back to the Expresso domain controller system. (See section on TE RFC Destinations in this document for details)

This needs to connect to the main client in the TE Domain Controller system where the users will login so their roles can be validated.

5.1.3. Hints – SAP GUI Processing

- Normally RFC users are setup as system users but in order for the transport form and task screens to be processed when connecting to the domain controller the RFC user must be setup as a **Service User** type in this case. Alternatively, a trusted RFC connection can be setup between the development systems and the TE Domain Controller. This will then use the credentials of 'Current User' (i.e. the developer) during the connection.

- To stop the SAP GUI screens from timing out when entering a TE transport form or TE task whilst using the field exit functionality it is recommended to increase the rdisp/max_hold_time parameter on all application servers of the TE domain controller and relevant SAP development systems. The recommended value for this is **360**.

- To enable field exits the system profile parameter abap/fieldexit needs to be set to **YES**. If not already set this will require a system restart.

5.1.4. Transport Form Organizer in SAP GUI

A sepereate TE Transport Form Organizer screen can be accessed in the SAP GUI to trigger the TE Transport Form screen of any released or modifiable transport without requiring the release authorisations. This can be used to populate the Transport Form at the start of the process (ie when the Developer or Functional Consultant has finished their work) or to update it later on in the process after the transport is released – for example if a Developer wants to add a Manual Step or Dependancy to a Transport Form they completed earlier.

This functionality is accessed via transaction **/n/BTI/TE_TR_FORM**

To use this transaction requires a TE authorisation in the Development system. The authorisation is included in /BTI/TE:CTS_USER.

5.1.5. Open TE Windows GUI from SAP GUI

It is possible to open the TE WIndows GUI from within the SAPGUI backed of the TE Domain Controller; this can be useful for customers that use SSO and want to trigger TE GUI via a customer portal.

The triggering of the TE Windows GUI is done using transaction **/BTI/TE_STARTGUI**

Please note that there is some additional setup required to use this functionality (including installation of some registry settings); this is detailed in online FAQs.

5.2. Cross-System Dependencies

Transport Expresso allows for dependencies to be defined between transports coming from different SAP development systems. For example, it might be necessary to define a dependency between a change made in an ECC system and another change made in a Business Warehouse system. Cross-system dependencies are defined on the transport form in the same way as for dependencies between transports coming from the same SAP development system – it is simply a matter of stating that transport A is dependent on transport B.

In order to enforce cross-system dependencies, Transport Expresso must be able to equate different SAP systems that serve the same purpose, for example an ECC Test system and a BW Test system. This is achieved by assigning the SAP systems to a common target role.

Technically, when Transport Expresso checks a dependency where transport A is dependent on prior

import of transport B, it checks whether transport B has been applied to the SAP system that transport A is being applied to, or that transport B has been applied to at least one other SAP system with the same role as the SAP system that transport A is being applied to.
Please refer to the previous sections Defining Targets and Defining Target Roles for more information about creating target roles and assigning them to target SAP systems.

5.3. ShiftLeft Analyzers

Transport Expresso includes 9 analysis functions that can be performed at task or transport request level within a target system and location (Inbox, Import queue, Outbox). This forms the General Analysis that is included as part of core Transport Expresso:

1. Check Dependencies
2. Overtake and Regression Checks
3. Check Locked Transport Forms
4. Check Authorisations
5. CheckTransport Release
6. Conflict Analysis
7. Check Merge Origin
8. Check Manual Steps
9. Check Manual Activities

In addition, the **ShiftLeft** and **DevMax** (ActiveControl plus) modules include over 35 more configurable analysis that can also be used to ensure any potential issues are indicated as early on in your SAP Change Management process as possible. These ShiftLeft analysis functions can be turned on or off individually within the configuration in Transport Expresso and they can be configured to prevent approval or import if required.

The rest of this section details each of the Transport Expresso and ShiftLeft analyzers.

5.3.1. General Analysis

Transport Expresso performs a General Analysis function automatically during approval and import.

The General Analysis includes all the standard analysis functions such as:

(0030) Check Dependencies
(0031) Overtake and Regression Checks
(0032) Check Locked Transport Forms
(0033) Check Authorisations
(0034) Check Transport Release

(0035) Conflict Analysis
(0036) Check Merge Origin
(0037) Check Manual Steps
(0039) Check Manual Activities
(0056) Check Future import date/time

The rest of this section details of the above analysis functions in turn.

Notes
1. The General Analysis will also perform any other configured analysis types that have been marked as *mandatory* for that control point.
2. Analysis types 0030 to 0037 represent the General Analysis functions so should not be used when setting up the configurable analysis types.

5.3.1.1. Check Dependencies (0030)

- Is there a dependency on another transport that has yet to be imported?

- Is the transport form attached to a task but not all the requests in that task have been imported yet or are not being approved now? Normally all transports attached to a task fulfil a business requirement so they should be approved / imported together.

Parameters:

None.

Notes:
This analyser is dependant on Target Roles set in Windows GUI configuration against the Target. If two targets in the same path are set with same target role, or if one of the targets does not have a role assigned, then you may see spurious warnings.

5.3.1.2. Overtake and Regression Checks (0031)

The Overtake and Regression checks are used to ensure that transports and changes are approved and imported in the correct sequence.

- **Overtake**: This is where newer changes, for example an emergency bug fix, are being moved before existing in-progress changes to the same objects. In this case there is a risk of deploying a partial change with the big fix that is incomplete and not yet ready.
  A check is made to see if the transport(s) contains a newer version of any objects that also appear

on older transports that have not yet been imported into the target system?
If so, when the older request is imported in future you risk overwriting the target system objects with old out of date versions.

- **Regression**: This is where older changes overwrite newer ones that have been deployed out of order. Here there is the risk of losing the latest changes and unexpectedly regressing the system to a previous version
  A check is made to see if the transport(s) contains an older version of any objects that have been previously imported into the target system?
  If so you risk overwriting the target system objects with old out of date versions.

In both cases **all** objects are checked across SAP transports including, but not limited to, development and configuration objects.

In the case of configuration changes checks are done for:

- Table configuration entries (TABU). Includes the identification of overlapping table key entries so that, for example, a conflict would only be identified if the actual table key contents overlap (including wildcards)
- View Cluster Maintenance: Data (CDAT). Includes the expansion of the associated tables for conflict checking
- Customizing: Table Contents (TDAT). Includes the expansion of the associated tables for conflict checking
- View Maintenance: Data (VDAT). Includes the expansion of the associated tables for conflict checking

Parameters:

KEY_NO_RELATED_VIEWS: By default, when transporting table entries, views that use the same table in key fields will be considered a conflict. This behaviour can be turned off with this flag.

KEY_NO_WILDCARDS: If this flag is set, wildcards are not considered when searching for conflicting table entries.

NO_CACHE: Turn off conflict cache (always recalculate the conflicts from the actual object lists).

SHOW_CONFLICTING_OBJ_KEYS: Show the actual table entries that are in conflict. (This is not purely display but can have performance implications since when you don’t show the keys, you can stop at the first conflict, but otherwise it needs to go on.)

5.3.1.3. Check Locked Transport Forms

(0032)

- Is the transport form locked to prevent approval or import?*

5.3.1.4. Check Authorisations (0033)

- Is the user authorised to perform the approval based on the settings in the target system approvers?
  If user is an administrator, priority approver or have the APPROVEALL authorisation then they will always be allowed. If not, they must be a designated approver for the relevant group or must have been delegated to allow approval

5.3.1.5. Check Transport Release (0034)

- For import queues is the transport released?

5.3.1.6. Conflict Analysis (0035)

Conflict Analysis checks if the transport contain objects that have also been changed on the target system?

This is used for conflict analysis when merging from one system to another (e.g. when merging from a production support development path to a project development path).

Parameters

None

5.3.1.7. Check Merge Origin (0036)

- For merges check that the origin of the transports that make up the merge request is the same system.
  This is relevant in case of consolidated merges and it checks if the transports you are merging are from the same source system as all the other ones that are in the current open merge.

5.3.1.8. Check Manual Steps (0037)

*Is there a dependency on any manual steps that have not been marked as complete?

5.3.1.9. Check Manual Activities (0039)

*Is there a dependency on any manual activities that have not been marked as complete?

5.3.1.10. Check future import date/time (0056)

Check future import date/time (0056) can be used to identify if any analysed Business Tasks have had future import scheduling defined.

5.3.1.11. Suppressing Analysis Results

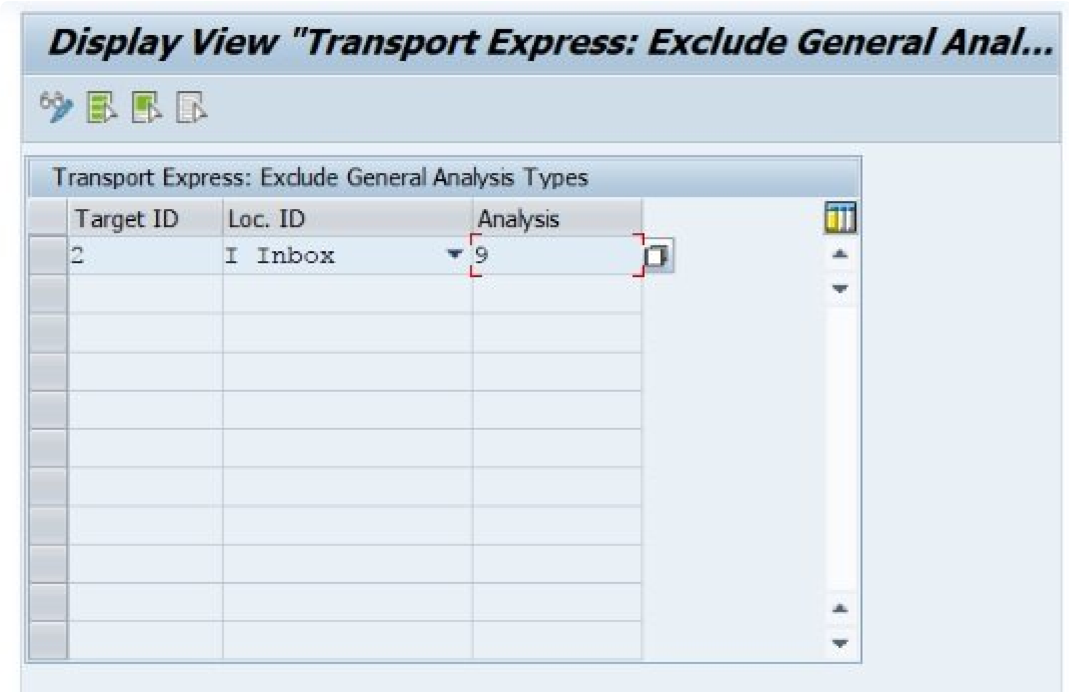
It is possible to suppress the running of an analysis type for a specific target and location by adding entries to table /BTI/TE_ANALEXCL.

This can be useful to stop the overtake / regression / conflict analysis types from being executed in target import queues when there are large numbers of transports to be imported.

If the analysis has already been executed and verified during the inbox approval it might be useful to disable these for the import queue to save time when importing transports.

Maintain the table /BTI/TE_ANALEXCL in the Transport Expresso Domain Controller via transaction SM30.

In this example the analyser 0009 ‘check releasability’ is skipped in the Inbox of the system.



5.3.2. Configurable Analyzers

5.3.2.1. Analysis Type Setup

The following are the key tables in Transport Expresso that control the configurable analysis:

Table	Usage
/BTI/ TE_ANLTYPE	Lists all the analysis types currently available within TE
/BTI/ TE_ANLTYPEP	Contains all the analysis type parameters. These are only required for the types that need them
/BTI/ TE_ANTYPEPT	Analysis parameter types: 01 BOOL TRUE or FALSE 02 COMBO Combination 03 COMBOLIST Combination list 04 DATE Date value 05 STRING String value 06 MEMO Multi-line 07 NUMERIC Numeric value
/BTI/ TE_ANREASON	Lists all the analysis error reason codes
/BTI/ TE_ANREAS_P	Configuration used to control the approval / import anyway functionality. This is stored by Reason, Analysis type, Target and Location. • If the Analysis type is blank the config applies to all analysis types • If the Target is blank or 9999 the config applies to all targets

	• If the Location type is blank the config applies to all locations
/BTI/ TE_ANRELINK	Used to link the error reason codes to the relevant analysis types

5.3.2.2. Hints – Configurable Analysis

It is possible to suppress the running of an analysis type for a specific target and location by adding entries to table **/BTI/TE_ANALEXCL**.

This can be useful to stop the overtake/regression/conflict analysis types from being executed in target system import queues when there are large numbers of transports to be imported. If the analysis has already been executed and verified during the inbox approval it might be useful to disable these for the import queue to save time when importing transports.

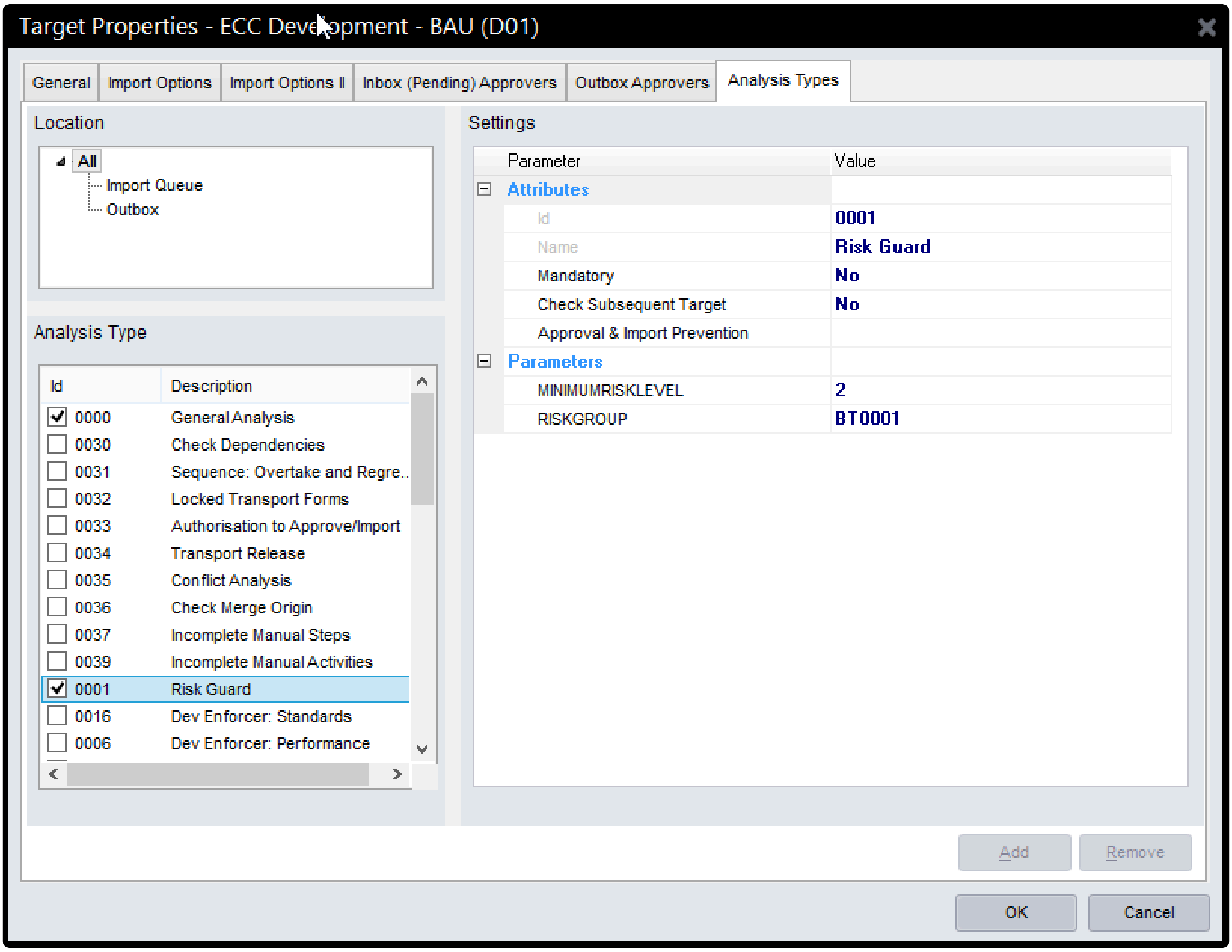
5.3.2.3. Analysis Type Configuration

The analysis types are configured against the relevant target systems and control points in Expresso.

Access to this can be found under menu options Tools -> Configuration menu in the **Targets and Transport Paths tab**.

To setup the analysis types for a specific target system open the target system properties and choose the **Analysis Types** tab.

The screen divided in to three segments:



1. Location:

- The Analysis Types can be set differently for each control point within the target. Only the control points that are switched on for the selected target in the transport path it exists in are selectable.
- Either select “All” to switch on the analysis types for all control points or select the required control point.

2. Analysis Type:

- These are the different Analysis Types that can be selected (based on /BTI/TE_ANLTYPE).
- The General Analysis will always be switched on as this is mandatory.
- To switch on an analysis type, use the relevant checkbox.

3. Settings:

- This is where the analysis attributes and parameters are selected.

- Click on the analysis number or name to highlight it to allow these values to be maintained.

Attributes:

- Mandatory: To make the analysis mandatory so it automatically runs during the General Analysis choose “Yes”
- Check Subsequent Target: To make the analysis run on the next target in the path rather than the current target choose “Yes”
- Approval & Import Prevention: To prevent approval or import if this analysis returns an error use the button. This will allow the “Prevent Approval”, “Import Approval” and “Admin Override” options to be set for each relevant reason code (based on /BTI/TE_ANRELINK).
- The “Admin Override” option allows TE Administrators (or anybody else that has role including authorisation activity APPROVEANYWAY (within Y_TEADMIN) the abolity to to override the warnings using the ‘Import Anyway’ button
- For the General Analysis this can be used to control this for each of the attached reason codes.

Parameters:

- If parameters are available for the selected analysis types these will be listed (based on /BTI/TE_ANLTYPEP).
- To enter a value in the parameter, highlight the required entry and choose the “Add” button. This will allow an entry to be made in the parameter value field.
- To remove a parameter value, highlight the required entry and choose the “Remove” button.

5.3.2.4. Risk Guard (0001)

Risk Guard checks all objects on the selected transport requests and highlights any that contain objects identified as a critical or risky. For example Company Code changes, Plant changes or changes to number ranges. If there are any changes to these types of objects then a message will be issued notifying the user of the level of risk for that request.

There are 4 tables that must first be populated in the Transport Expresso domain controller before Risk Guard will work. These tables are:

1. /BTI/TE_RISKL Risk Levels
2. /BTI/TE_RISKG Risk Groups
3. /BTI/TE_RISKGOB Risk Group Objects
4. /BTI/TE_RISKGOBT Risk Group Object Texts

Records for these tables can be created, modified and deleted using transaction SE16 or SM31 on the

Transport Expresso Domain Controller.

Note: Some sample entries are delivered in these tables but it recommended to copy these to local customer specific ones so they won't be overwritten during any upgrades.

Mass download/upload of Risk Guard data

It is possible to download whatever has already been maintained in Risk Group Objects and texts, and also to do an enmasse upload of this data, using the following processes:

Download: /BTI/TE_RUDOWNLOAD_RISK_DATA
Upload: /BTI/TE_RUUPLOAD_RISK_DATA

Parameters:

- MINIMUMRISKLEVEL: Minimum Risk Level from table/BTI/TE_RISKL
- RISKGROUP: Risk Group from table /BTI/TE_RISKG

5.3.2.4.1. Risk Levels

Table name: **/BTI/TE_RISKL**

There are 3 fields in this table:

- **RISKLEVELID**: 10 character field for the Risk Level Identifier.
- **RISKLEVEL**: 10 digit numerical field used to indicate the risk level. The higher the value of this field, the higher the risk.
- **TITLE**: 50 character comment field. This can be used to indicate the risk level in words. For example, “Low risk”, “Moderate risk”, “High risk”, “Extremely High Risk”, etc.

Below are some example entries for this table:

Risk Level Identifier	Risk Level	Comment
BT0001	1	Risk level 1
BT0002	2	Risk level 2
BT0003	3	Risk level 3
BT0004	4	Risk level 4
BT0005	5	Risk level 5
BT0006	6	Risk level 6
BT0007	7	Risk level 7

BT0008	8	Risk level 8
BT0009	9	Risk level 9
BT0010	10	Risk level 10

When setting up Risk Analysis, you can specify a risk level value. If that is set, the Risk Analysis will only report on objects that have a risk level greater than the specified value.

5.3.2.4.2. Risk Group

Table name: **/BTI/TE_RISKG**

There are 2 fields in this table.

Field **GROUPID** is the group identifier and the field **TITLE** is the description of the group.

Risk groups provide TE with a way of varying how risks are identified for different systems or control points. For example, a program called ZZ_TEST may be a moderate risk when going into a QA system but a high risk when moving into a Production system.

Below are some example entries for this table:

GROUPID	TITLE
BT0001	Basis Technologies Risk Group 0001

5.3.2.4.3. Risk Group Objects

Table name: **/BTI/TE_RISKGOB**

These are the fields in the table.

- **GROUPID**: Links the object to the group specified in table /BTI/TE_RISKG.
- **PGMID**, **OBJECT**, **OBJ_NAME**: Relate to the same fields in the object list for a transport. For example, to highlight the transports of any number range objects as risks, there needs to be 2 entries in this table, one for R3TR NROB * and one for R3TR TABU NRIV.
  Note that * can be used as a wildcard value. E.g. T0*
- **RISKLEVELID**: References the risk level table /BTI/TE_RISKL.
- **APPENDFLAG**: Checking this will include direct includes (eg. adding MARA with this flag set also adds EMARA and IST_MAT_FIELDS)
- **INVERSEFLAG**: Currently does not do anything.
- **DELETEFLAG**: Can be used if you want the Risk Guard analysis to indicate if a transport contains

a deletion to the object)

There is also the table **/BTI/TE_RISKGOBT** which contains the text to be displayed when the Risk Analysis finds any risks.

Below are some example entries for the **/BTI/TE_RISKGOB** table:

GROUPID	PGMID	OBJECT	OBJ_NAME	RISKLEVELID	TEXT
BT0001	LIMU	INDX	*	BT0009	Database indexes require rebuilding – take care importing into production
BT0001	LIMU	TABD	*	BT0007	Table definition changes may have an effect on production data
BT0001	R3TR	NROB	*	BT0008	Be careful when transporting number range objects
BT0001	R3TR	TABL	*	BT0008	Table definition changes may have an effect on production data
BT0001	R3TR	TABU	NRIV	BT0010	Number range intervals should not be transported unless during setup
BT0001	R3TR	TABU	PATH	BT0007	Be careful when transporting logical filenames and directories
BT0001	R3TR	TABU	T000	BT0008	The client table should never be transported
BT0001	R3TR	TABU	T001	BT0008	Be careful when changing the critical Company Code table
BT0001	R3TR	TABU	T012	BT0007	Be careful when transporting the House Banks table
BT0001	R3TR	TABU	T030	BT0007	Be careful when transporting the critical General Ledger table
BT0001	R3TR	TABU	TBDLS	BT0008	Be careful when transporting Logical Systems
BT0001	R3TR	XINX	*	BT0009	Database indexes changes should be carefully applied to production
BT0001	R3TR	XPRA	*	BT0006	Take care as this change will be executing program(s) after import

5.3.2.5. Dev Enforcer: Naming Conventions (0003)

This analysis is provided to allow the transport naming conventions to be checked to ensure they meet specific standards.

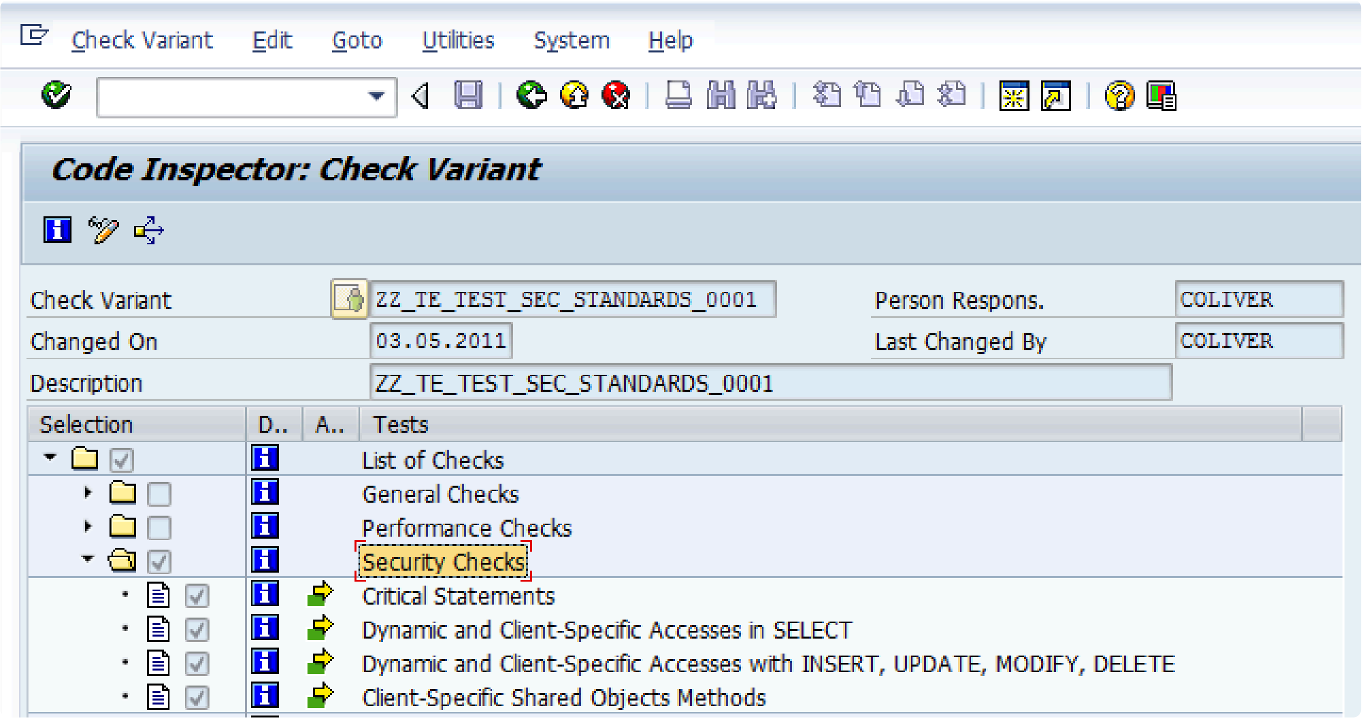
As transport naming conventions for this differ from customer to customer, this is generally delivered by BTI as per the specific requirements.

5.3.2.6. Dev Enforcer: Security (0004)

The Dev Enforcer: Security analysis is achieved by making a call to SAP Code Inspector in the relevant target system.

In transaction SCI it is possible to setup Code Inspector variants to perform the required security checks on SAP programs. These can be setup as General variants for all users or user specific ones.

For example, the Dev Enforcer: Security analysis could be setup as follows:



The button is used to maintain the actual values for each of the switched on options.

Parameters:

- **CISID**: SAP System ID for Execution. Specify the system ID (e.g. D01) where the Code Inspector variant is to be run from. This must be created in the system that the analysis is being performed on
- **CITARGET**: Target System for Execution if CISID is not specified. Specify the target system ID (e.g. 0001) where the Code Inspector variant is to be run from. This must be created in the target system that the analysis is being performed on
- **CIUSER**: Code Inspector Execution User. Leave blank for global variants

- **CIVARIANT**: Code Inspector Variant name

5.3.2.7. DevMax: Conflict Analysis (0005)

DevMax: Conflict Analysis check analyses a transport request against the target system and checks for conflicts before importing changes into that system. This is mainly used in the merge processing to identify objects changes in the merge target system that are also contained on the transport request being analysed.

This should be switched on and made mandatory for all merge target systems in Transport Expresso.

If any conflicts are found the details of the source system and merge target system transports are displayed along with the list of conflicting objects.

Parameters:

CHECK_CONF_FLAG : If set, the analyser will only consider targets in the analysis that have the “remote import analysis” flag set.

GLOBALMERGECHECK: By default, only transports that originate in the target system are checked for conflicts. If this flag is switched on, then all transports in the target are checked, regardless of their original system. There is a potential performance downside to having this functionality active.

SHOW_CONFLICTING_OBJ_KEYS: If set, the Analysis Check will show the actual table entries that are in conflict. This is purely display but can still have performance implications since when you don’t show the keys, you can stop at the first conflict, but otherwise it needs to go on.

USE_CACHE: If set, the analyser uses cached results, otherwise it is always recalculated.

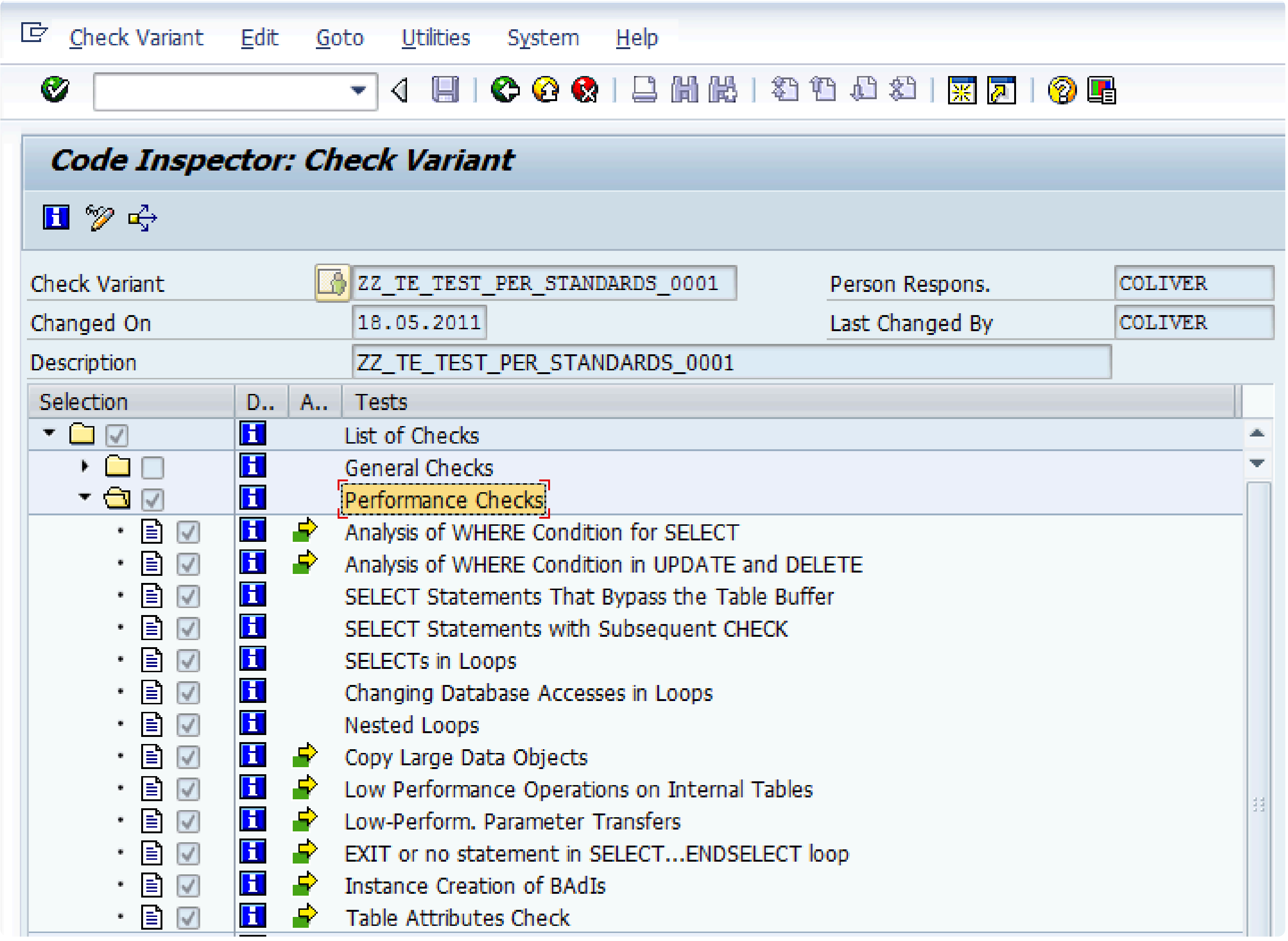
USE_CURRENT: By default, if the transport is past the import queue, the conflict analysis will be done in the successor target. If this is set, we can force it to run it on the current one even in this case.

5.3.2.8. Dev Enforcer: Performance (0006)

The Dev Enforcer: Performance analysis is achieved by making a call to SAP Code Inspector in the relevant target system.

In transaction SCI it is possible to setup Code Inspector variants to perform the required performance checks on SAP programs. These can be setup as General variants for all users or user specific ones.

For example, the Dev Enforcer: Performance analysis could be setup as follows:



Parameters:

- **CISID**: SAP System ID for Execution. Specify the system ID (e.g. D01) where the Code Inspector variant is to be run from. This must be created in the system that the analysis is being performed on
- **CITARGET**: Target System for Execution if CISID is not specified. Specify the target system ID (e.g. 0001) where the Code Inspector variant is to be run from. This must be created in the target system that the analysis is being performed on
- **CIUSER**: Code Inspector Execution User. Leave blank for global variants
- **CIVARIANT**: Code Inspector Variant name

5.3.2.9. Check Valid To Date (0007)

Check Valid To Date gets a unique list of tasks relating to the analysed transport requests and then checks the validity date of these tasks against the system date. This is based on the date contained in the specified custom field.

If the system date is greater than that of the custom field date then a message is issued stating that the change is no longer valid.

Parameters:

- **ANALYSISCAPTION**: Allows the analysis caption to be overridden. Enter the required text up to 100 characters. This text will appear in the analysis results
- **ERRORIFNOTSET**: If the valid to date is not set then display an error
- **IGNOREURGENT**: Ignore check if task priority is set to Urgent
- **TASKFIELDTEXTID**: Custom field text ID for Valid To date (from **/BTI/TE_CUSTF**)

5.3.2.10. Check Don’t Approve Before Date (0008)

Check Don’t Approve Before Date gets a unique list of tasks relating to the analysed transport requests and then checks the approval date of these tasks against the system date. This is based on the date contained in the specified custom field.

If the system date is less than that of the custom field date then a message is issued stating that the change is not ready to be approved yet.

Parameters:

- **ANALYSISCAPTION**: Allows the analysis caption to be overridden. Enter the required text up to 100 characters. This text will appear in the analysis results
- **ERRORIFNOTSET**: If the valid from date is not set then display an error
- **IGNOREURGENT**: Ignore check if task priority is set to Urgent
- **TASKFIELDTEXTID**: Custom field text ID for Valid from date (from /BTI/TE_CUSTF)

5.3.2.11. Check Releasability (0009)

Check Releasability looks at each unreleased transport request and checks to see if there are any problems that would cause the release to fail. A SAP function is used to perform this check and if any issues are found a message will be output.

Parameters: None

5.3.2.12. DevMax: CTS+ Conflict Analysis (0011)

DevMax: CTS+ Conflict Analysis performs the conflict checks for non-ABAP objects during the merge process to ensure that the transport being imported does not overwrite local changes in the merge target system. The transport attachments are exploded and the contents are analysed to determine if any conflicts are present.

For conflicting objects the last changed timestamps are compared and a message is output if it has been found that the transport to be imported has an earlier timestamp than the one in the merge target system.

Parameters: None

5.3.2.13. Check Date (0012)

Check Date checks gets a unique list of tasks relating to the analysed transport requests and then checks the date contained in the specified custom field against the system date.

The custom field date is compared to the system date based on the specified operator and if the comparison is true a message is issued stating that the change is not yet ready for deployment.

Parameters:

- **ANALYSISCAPTION**: Allows the analysis caption to be overridden. Enter the required text up to 100 characters. This text will appear in the analysis results
- **ERRORIFNOTSET**: If the date is not set then display an error
- **IGNOREURGENT**: Ignore check if task priority is set to Urgent
- **OPERATOR**: Date comparison operator. Valid values: >, <, >=, <=, =, <>
- **TASKFIELDTEXTID**: Custom field text ID for date (from /BTI/TE_CUSTF)

5.3.2.14. DevMax: BW Conflict Analysis (0013)

DevMax: BW Conflict Analysis looks for specific BI/BW objects that are renamed on import.

As the names differ between systems the conflict analysis is not reliable so if any are found in they are reported. This specifically refers to Routines (ROUT) and formulas (RSFO).

Parameters: None

5.3.2.15. Check Transport Release (0014)

Check Transport Release checks whether the selected transport requests are released or not and if not it issues a message to indicate this.

Parameters: None

5.3.2.16. Check Unicode (0015)

Check Unicode checks all transport request objects to see if they are Unicode compliant.

Parameters:

- **CHECKFLAG**: A flag to indicate if the analysis should report programs that do not have the Unicode Check flag set
- **CHECKCODE**: Indicates if a Unicode Syntax check should be carried out on programs and the scope of the syntax checking (see note below)
- **CHECKSID**: SAP System ID where the Unicode check is to be run

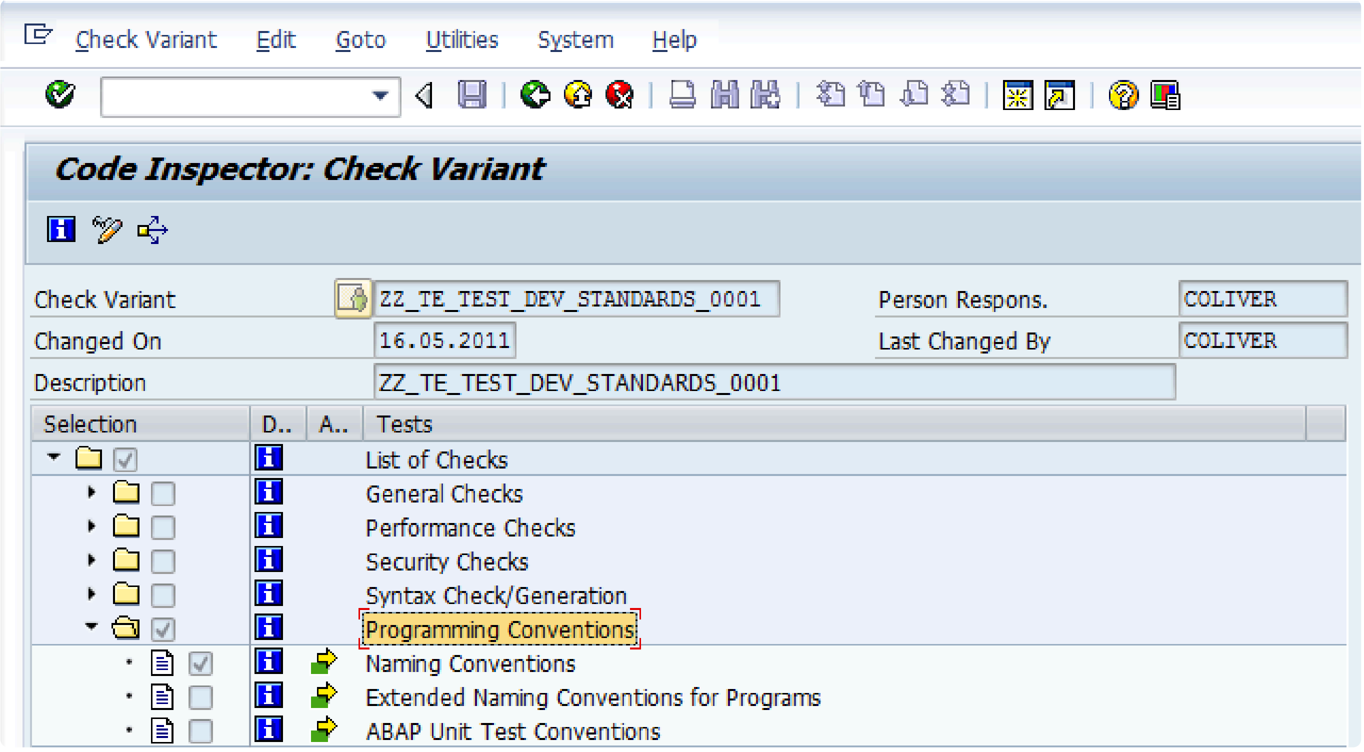
If the **CHECKFLAG** attribute is set ('X'), any programs without the Unicode Check flag set will be reported.
If the **CHECKCODE** attribute is set, a Unicode syntax check will also be carried out on the object. Setting this attribute to '1' means the syntax check is carried out on all programs, setting it to '2' will mean only programs without the Unicode Check flag set will be syntax checked.

5.3.2.17. Dev Enforcer: Standards (0016)

The Dev Enforcer: Standards analysis check is achieved by making a call to SAP Code Inspector in the relevant target system.

In transaction SCI it is possible to setup Code Inspector variants to perform the required programming conventions checks on SAP programs. These can be setup as General variants for all users or user specific ones.

For example, the Dev Enforcer: Standards analysis could be setup as follows:



With the following naming conventions for objects:

Parameters:

- **CISID**: SAP System ID for Execution. Specify the system ID (e.g. D01) where the Code Inspector variant is to be run from. This must be created in the system that the analysis is being performed on
- **CITARGET**: Target System for Execution if CISID is not specified. Specify the target system ID (e.g. 0001) where the Code Inspector variant is to be run from. This must be created in the target system that the analysis is being performed on
- **CIUSER**: Code Inspector Execution User. Leave blank for global variants
- **CIVARIANT**: Code Inspector Variant name

5.3.2.18. Check Unconditional Modes (0021)

Check Unconditional Modes will display the details of any Unconditional Modes set on the selected transports. Unconditional Modes are added on Transport Forms in the Advanced Options tab.

Transports with the following modes set will be highlighted by this analysis:

- 2: Overwrite original objects
- 6: Overwrite objects in unconfirmed repairs
- 8: Import customer table entries

Parameters: None

5.3.2.19. Show Future Manual Steps (0022)

This analysis will display the details of any manual steps that will need to be completed during import of the selected transports into targets in the current path. If the parameter is set, any Manual Steps that have already been completed for future targets are also included in the output.

Parameters:

- **DISPLAY_COMPLETED**: Show Manual Steps that have already been completed

5.3.2.20. Deep Impact Analysis (0023)

Deep Impact Analysis can be used to highlight the lower level dependencies between the repository objects contained within the transport(s) being analysed and other transports existing in the landscape. This can be used to avoid deployment errors where transports are imported without the necessary dependent objects being present in the target SAP system.

The process checks the objects included in the analysed transports and determines whether any of the objects referenced within those are either part of the group of changes being approved/imported or have already been imported beforehand.

For example, if a database table is being transported, a check would be made to ensure that all referenced data elements are not missing. The same would apply to a program being transported to ensure that any referenced data dictionary objects, function modules, classes, methods, etc. are not missing. This can then reduce the number of import failures due to hidden dependencies between changes and transports.

Deep Impact Analysis is used to perform technical / repository checks so therefore doesn’t include configuration objects in its analysis.

Note that there is some pre-requisite Diffuser configuration setup that needs to be performed for Deep

Impact Analysis to run correctly.

Parameters:

- **GROUP_IMPORT_METHODS**: Fast import/Import All methods to ignore transport sequence. Default is methods 2 and 5
- **IGNORE_SEQUENCE**: Ignore the transport sequence when calculating missing dependencies (transports with missing dependent objects that are contained in transports later in the import sequence will not be reported) . If not set then Fast import/Import All methods specified in GROUP_IMPORT_METHODS will ignore the transport sequence anyway. It’s good practice to set IGNORE_SEQUENCE = ‘X’ on non-Import Queue.
- **LEVELS**: Specify the number of levels to go down in object hierarchy
- **MAX_OBJ_TIME**: Maximum time to analyse an object. Default = 60 seconds

5.3.2.21. Previous Import Errors (0024)

This analysis can be used to highlight any transports that are likely to fail when being imported into the next target, as they have failed during import to previous systems.

Parameters:

- **IGNORE_LATEST_IMPORT_OK**: Flag to indicate whether or not to ignore transports if the latest import was successful

If any of the selected transports were imported with errors into previous systems in the path, they will be highlighted by this analysis. The results of all imports into the same target will be displayed. Setting the input parameter will suppress the display of any transports which had previous import errors, but for which the latest import was successful.

5.3.2.22. DevMax: MDM Conflict Analysis (0025)

DevMax: MDM Conflict Analysis is used to identify MDM overtakes and conflicts. It will highlight:

- Other transports with full MDM exports that potentially conflict with the transports being analysed
- Transports that contain full MDM exports which potentially could conflict with everything else

Parameters: None

5.3.2.23. Check Import Order (0026)

Check Import Order analysis check is used in import queues only to check whether the selected transports are sorted into the correct Transport Expresso calculated sequence prior to import. If the user has not sorted the transports into the correct order the analysis will highlight this fact along with the correct sequence that should be used.

Parameters:

- **EXCLUDE_UNRELEASED**: Flag to indicate whether or not to include un-released transports in the analysis
- **IGNORE_COMPLETENESS**: Flag to indicate whether the analysis should return an error if the sequence is correct but there are some missing transports in the selection

5.3.2.24. Lock Control Point / Import Queue (0027)

Lock Control Point / Import Queue analysis check can be used to lock a control point or import queue to prevent approvals or imports. This can be useful when a system is taken off line for a refresh to prevent any imports from being processed.

The analysis needs to be made mandatory so that it’s always run when approvals or imports are processed.

Parameters: None

5.3.2.25. Check Own Changes (0028)

Check Own Changes can be used to check the ownership of a transport form during approval / import.

If the current user is the owner of any of the transports being analysed and they are not allowed to approve their own changes a message can be output to report this to the user and prevent approval / import of their own changes.

If the current user is not the owner of any of the transports being analysed and they are only allowed to approve their own changes a message can be output to report this to the user and prevent approval / import of their own changes.

Parameters:

- **PERMITOWNCHANGES**: Flag to indicate whether the current user is allowed to approve their own transport forms or not.
  Blank = Not allowed to approve your own transports
  X = Only allowed to approve your own transports
- **OWNERFIELD**: Field to be checked to determine the ownership of the transport form. If nothing is specified the ORIG_OWNER field will be checked. If you specify REQUESTOR, then it will check the current transport form owner.

5.3.2.26. Check SAP Objects and OSS Notes (0038)

Check SAP Objects and OSS Notes can be used to check whether any of the selected transport requests contain changes to SAP objects or OSS notes.

If so, the relevant objects will be listed along with any OSS note numbers included in the transports.

Parameters: None

5.3.2.27. Check Calendar (0040)

Check Calendar analysis can be used to check a factory calendar (in any system) and be configured to give a warning message if today is not a ‘work day’ in the factory calendar.

Parameters:

- **SYSTEM**: The System ID of the system the factory calendar resides in
- **CALENDAR**: The ID of the factory calendar
- **TEXT_NAME**: The name of the standard SAP text (created using SO10) that is displayed if today is not a ‘workday’ in the factory calendar

5.3.2.28. Check for Local Non-Transportable Requests (0041)

Check for Local Non-Transportable Requests can be used to check and report local non-transportable transport requests where the SAP transport target is blank.

Parameters: None

5.3.2.29. Dual Domain Controller Overview (0042)

Dual Domain Controller Overview can be used to check the status of any Dual Domain controller integrations. The transports are analysed to check whether the transfer of them to another Transport Expresso Domain Controller can be carried out or not.

It will highlight the following:

- Requests that have already been interfaced
- Requests that have been filtered out based on the configuration (so will not be transferred)
- Requests that are merge requests so will not be transferred
- Requests that are valid and will be transferred

Parameters: None

5.3.2.30. Test Impact Radar (0043)

The Test Impact Radar analysis can be used to highlight what top level SAP objects (e.g. Transactions, programs, etc.) are impacted by the selected transport(s). For example, if a database table structure was changed it could be used to identify all transactions and programs that use that table to help target testing effort.

It can also indicate what Test Scripts are impacted by the changes in the transports if these have been uploaded into Transport Expresso. I.e. identify what test scripts should be executed as a minimum as a result of the changes in the transports.

Note that there is some pre-requisite software and configuration setup that needs to be performed for the Test Impact Radar analysis check to run correctly. Please refer to the TE Administration Guide for details of this setup.

Parameters:

- **CHECK_LINKS**: Check if the link creation is up to date
- **MAX_LEVEL**: Maximum recursion level for analyser (Default = 10)
- **MAX_OBJ_TIME**: Maximum time to analyse an object (Default = 60 seconds)
- **TARGET**: Target ID where the dependencies will be checked

5.3.2.31. Check Unreleased Tasks in

Requests (0044)

Check Unreleased Tasks in Requests can be used to check and report any unreleased sub-tasks inside transport requests.

Parameters: None

5.3.2.32. Check Request Tasks not yet in a TOC (0045)

Check Request Tasks not yet in a TOC can be used to ensure that all transport sub-tasks have been included in a Transport of Copies (ToC), for example, if ToC's are being used to deploy development changes to QA.

Parameters: None

5.3.2.33. TOC Analysis (0046)

TOC Analysis can be used to check if a transport is a Transport of Copes (ToC) and if so report it.

If, for example, ToC's have been used to deploy development changes to QA it could be that the ToC's should not move past QA to production in the transport path as the original development transports should be used in this case. The analysis can be used to prevent the ToC's from moving past QA in this case.

Parameters: None

5.3.2.34. BPCA (0047)

SAP Business Process Change Analyzer compares the objects included in a transport to the objects contained in the TBOMs of the target system.

Note that BPCA is a standard SAP functionality, and is a pre-requisite for this TE Analysis Check to run correctly.

Parameters:

- **DESTINATION**: System ID of the Solution Manager system where SAP Business Process Change Analyzer has been setup. (mandatory field)

- **EXCLUDE_GROUP**: Can be used to excluded specified TE Groups from the analysis
- **EXCLUDE_TYPE**: Can be used to excluded specified TE Type from the analysis
- **FORCENEW**: Can be used to force a new analysis, even if BPCA has run previously on the same transport(s)
- **MULTIPLE**: Specifiy if you want to analyse multiple transports during a sinngle analysis run
- **VARIANT**: Specifiy the variant of the BPCA analysis that you have setup on Solution Manager (mandatory field)

5.3.2.35. Changes to Same Objects (0048)

Changes to Same Objects can be used to identify other transports containined the same objects in the *same control point* as the ones being analysed.

Parameters: None

To analyze same objects along the transport path you can use the new analyzer *0055 Changes to same objects (path)* .

5.3.2.36. Allowed Objects Check (0049)

Allowed Objects Check can be used to stop TE Business Tasks containing Transport Forms that contain anything other than a pre-defined set of objects being approved.

Parameters: None

Configuration:

1) Create your Risk Group in table **/BTI/TE_RISKG** in the TE Domain Controller eg STANDARD

2) Define the SAP objects that you want to be part of the Risk Groups that you have created in table **/BTI/TE_RISKGOB** in the TE Domain Controller (eg your agreed list of objects that can be delivered in 'Standard' changes)

3) Populate table **/BTI/TE_ANRGTYPE** with the Task Types that you want to check (taking the serial ID from table /BTI/TE_TYPE) and the associated RIsk Groups you created in (1) above.

Notes: The Allowed Objects Check uses same the same tables as TE Risk Guard – but since it is a different analyser to the Risk Guard analyser, it means you can configure both analysis to run at the same control point, but with different Risk Groups.

5.3.2.37. Disallowed and Critical Objects Check (0050)

Disallowed and Critical Objects Check can be used to check if Transports contain particular objects.

This Analyser is essentially the same as the TE Risk Guard analysis, but since it is possible to have both Analysers running in the same control point, you can set the Disallowed and Critical Objects Check analyser to not allow ‘Approve Anyway’ but set the standard Risk Guard to allow ‘Approve Anyway’.

Parameters:

MINIMUMRISKLEVEL: Minimum Risk Level from table/BTI/TE_RISKL
RISKGROUP: Risk Group from table /BTI/TE_RISKG

5.3.2.38. Check Documentation (0051)

Check Documentation analyzer can be used to check if particular Document Categories have been attached/linked to a TE Business Task as part of the approval in a particular TE Control Point.

This can help to automatically check if, for example, a functional specification has been attached to a TE Business Task at the point a Dev Outbox approval is being performed, or if UAT Test Evidence has been attached at the point a Production Inbox approval is being performed.

The Check Documentation analyser does not check the contents of the documents, it purely validates that the defined documents have been attached.

It is possible to check for a maximum of 5 different document categories in a particular control point.

Parameters
CATEGORY1 – populate with the document category that you want TE to check for in this control point
CATEGORY2 – populate with the document category that you want TE to check for in this control point
CATEGORY3 – populate with the document category that you want TE to check for in this control point
CATEGORY4 – populate with the document category that you want TE to check for in this control point
CATEGORY5 – populate with the document category that you want TE to check for in this control point

5.3.2.39. Unit Test automation (0052)

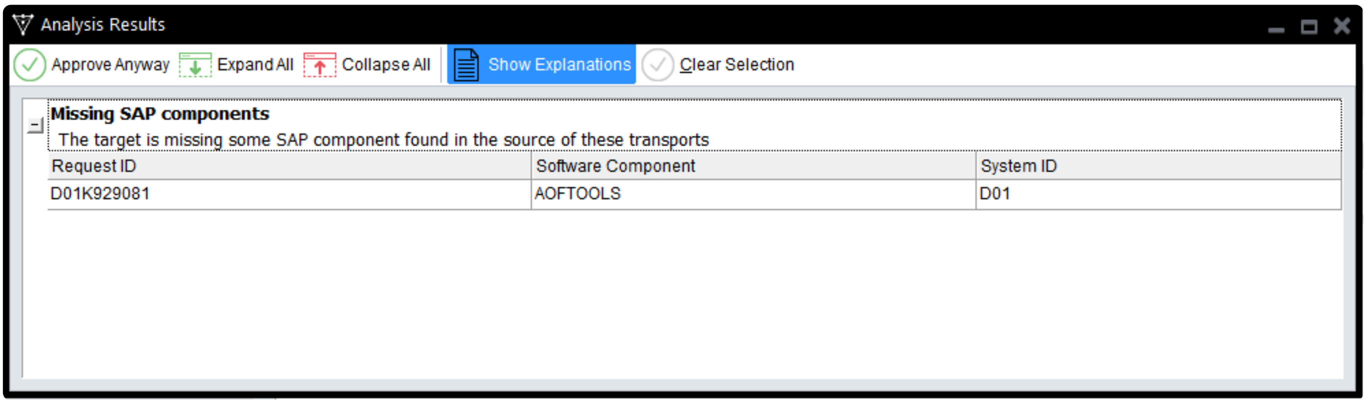
Unit Test Automation analysis can be used to automate unit testing in your SAP Development system.

This Shiftleft Analyser hooks into standard SAP functionality available within SAP Code Inspector, and ensures that Approvers at the configured control points have visibility of any development issues.

Parameters
CIUSER: Username that the SAP Code Inspector variant has been created against
CIVARIANT: Name of the SAP Code Inspector variant

5.3.2.40. Check Component Version (0053)

Identify *Component Version differences (0053)* analyzer can be used to report if a transport has a different component version than the next system that it is to be imported into.

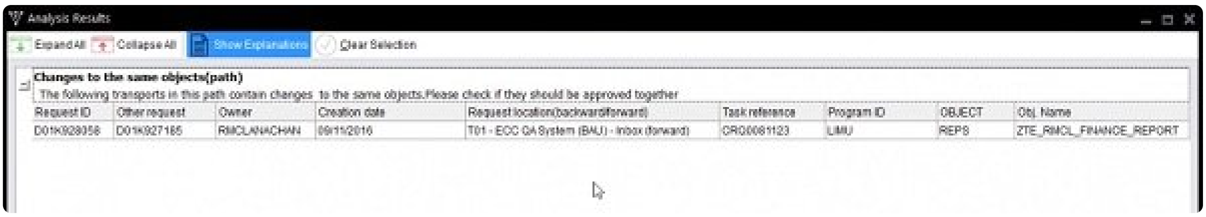


Configuration Steps

Parameters: None

5.3.2.41. Changes to same objects in path (0055)

This new ShiftLeft Analyser enables you to indicate what other transports in a TE path contain the same objects as those contained within the transport(s) being analysed. It was requested by a few existing customers that want to stop new versions being imported into a system until an older version that had already been imported into that system had been tested and moved forward.



The analyser can look for the object in other transports i) Forward, ii) Backward or iii) Forward and

Backward in the TE path, depending on how the exact requirement

Note that another ShiftLeft analyser “Changes to same objects” can be used to identify other transports containing the same object(s) *in the same control point.*

Configuration Steps

Parameters

CHECK_BACK_AND_FORWARD: Define whether you want to look only Forward, only Backward or both Backward and Forward in the Path.

IGNORE_SAME_TASK: Can be used if you want to ignore other transports assigned to same Business Task that contain the same object(s).

KEY_NO_RELATED_VIEWS: By default, when transporting table entries, views that use the same table in key fields will be considered a conflict. This behaviour can be turned off with this flag.

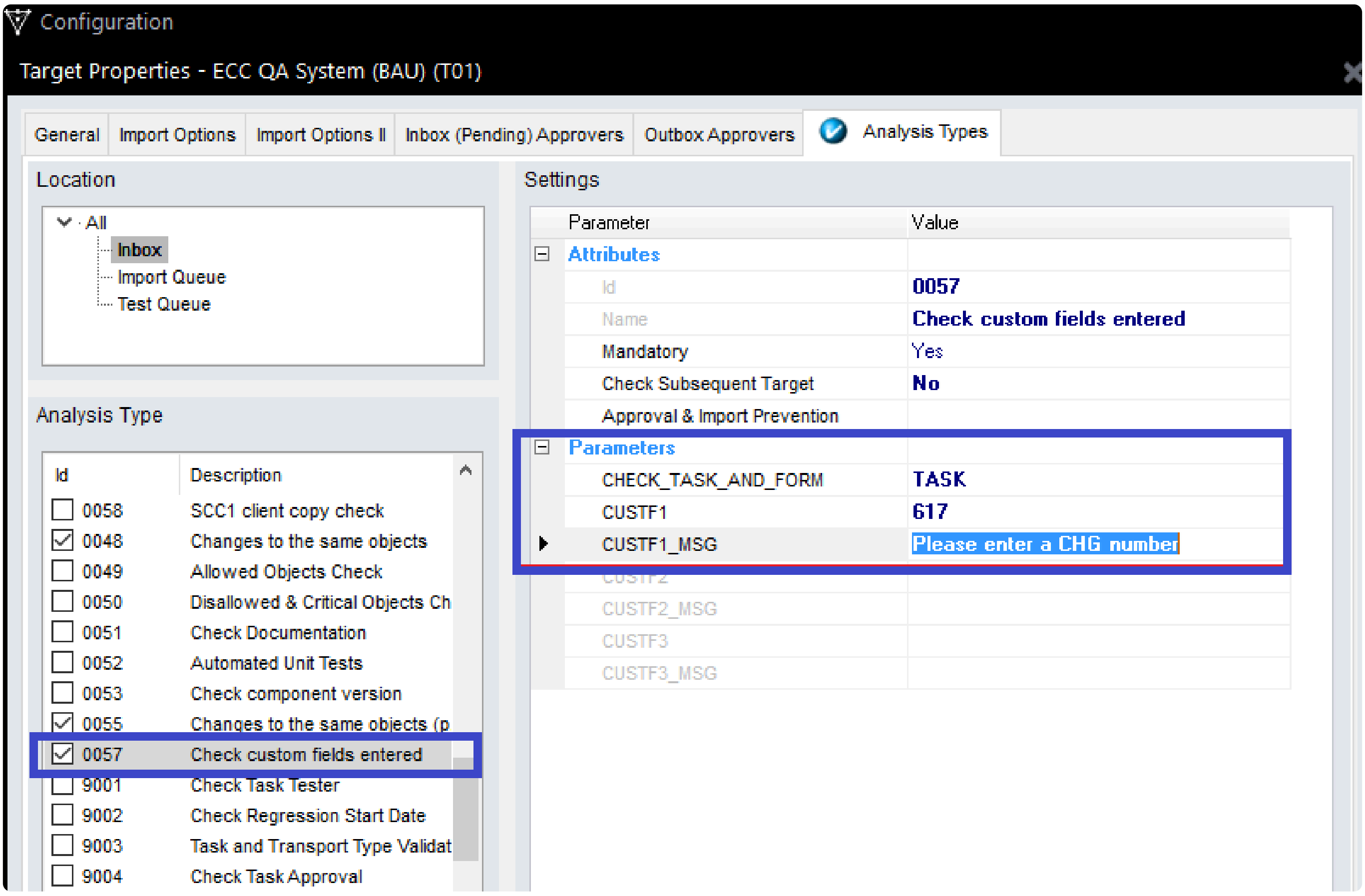
KEY_NO_WILDCARDS: If this flag is set, wildcards are not considered when searching for conflicting table entries.

5.3.2.42. Check Custom Field entered (0057)

A new New ShiftLeft **Check Custom Field Entered** analyser can be used to check if a custom field has been populated or not.

This is useful for customers that do not want a particular custom field to be mandatory at the point the Transport Form or Business Task is created, but want to ensure that it has been populated by a certain point in the process, e.g. for customers that have a separate Change Ticket raised as part of their process for moving SAP Change to Production.

Configuration Steps



CHECK_TASK_AND_FORM = TASK or FORM or TASK & FORM – this is the level of the TE Hierarchy that you want the Analyser to check ”

CUSTF1 = This is the number of the custom field that you want to check. You can get this number from the Configuration Screen “Fields” tab

CUST1_MSG = This is the message you want to appear in the analyser warning if the field is blank.

5.3.2.43. SCC1 Client Copy Check (0058)

SCC1 Client Copy Check (0058) can be used to check in a Development Test Queue that a client dependant transport was copied to the other clients in that Development system.

Parameters

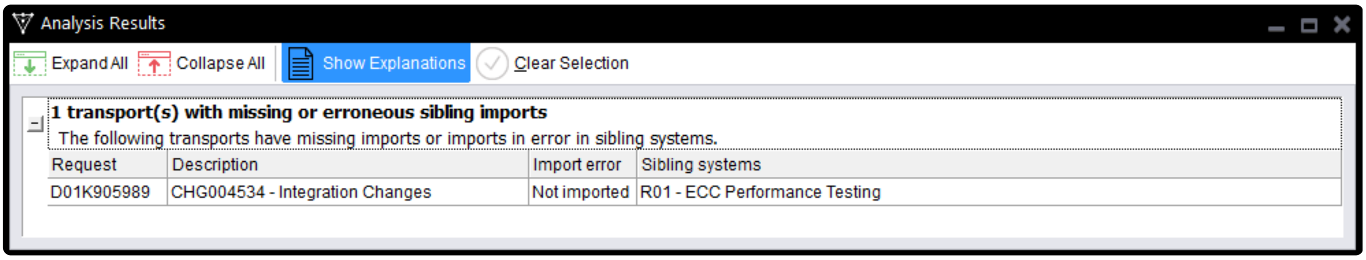
None

5.3.2.44. Check sibling system imports

(0059)

Check sibling system imports (0059) can be used to analyse if a transport has been imported into a sibling system in a path.

An example of its use is where an SAP customer has parallel regional SAP QA systems. Using this analyser can ensure that the transport does not progress onwards to Production until it has been approved and imported into all of the QA systems.



Configuration Steps

Parameters:

TARGETROLEID: Enter the appropriate Role ID (from backend table /BTI/TE_TARGROLE) if you only want to check the sibling systems that are assigned to the specified target role. If it is not set, then the analyser will check all sibling systems.

5.3.2.45. Critical Impact Analysis (0061)

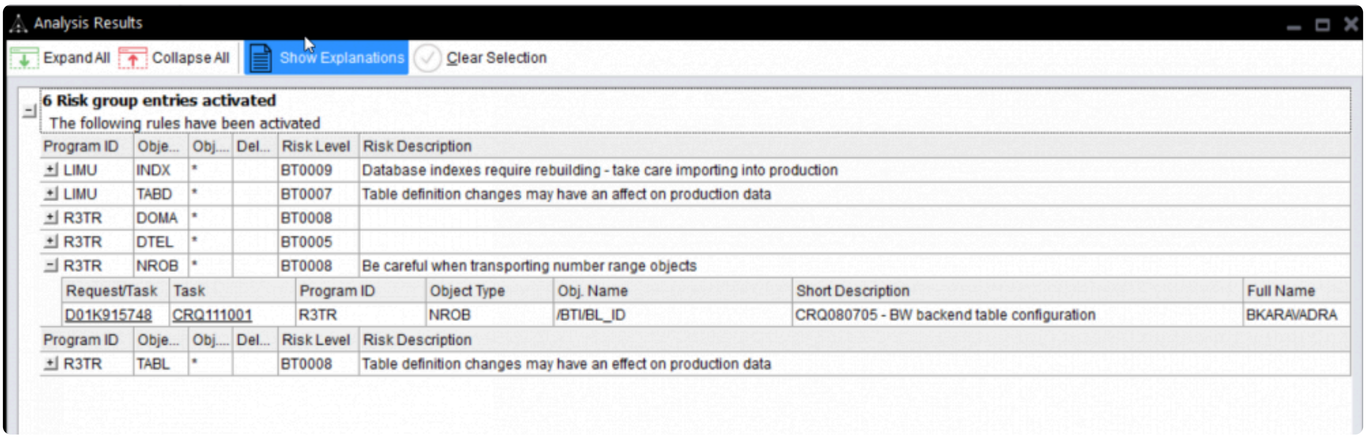
Critical Impact Analysis (0061) can be used to check to identify critical impacts by using a combination of existing Risk Guard and Test Impact Radar functionality.

For an analysed transport, the check will:

1. Traverse up the dependency hierarchy to find all objects above that are possibly affected.
2. Check this set of objects against a set of objects configured in a Risk Group
3. The intersection of the two sets of objects creates the output

The output of the analyser shows:

i) a ‘summary’ the list of the objects in the risk group that are affected by the transport(s) being analysed.
ii) a ‘detail’ list for each of the objects in the ‘summary’ list, to show all of the objects from the original transport(s) that affect this particular risk group object.



Configuration Steps

Parameters:
INCLUDE_DUPLICATES: if there are duplicates in the results, whether you want to see them or not. (the default is No)
LEVELS: How many levels up to check.
MINIMUMRISKLEVEL: Minimum Risk Level from table/BTI/TE_RISKL
RISKGROUP: Risk Group from table /BTI/TE_RISKG

Note:
This analyser requires an updated License Key. If you are upgrading from a previous version and having issues trying to configure the analyser, it is probably because you need a new key.

5.3.2.46. Check Interdependencies in Path (0062)

Check Interdependencies in Path (0062) analysis uses a combination of the existing Test Impact Radar, Deep Impact Analysis and Overtake sequencing analysis checks to do the following:

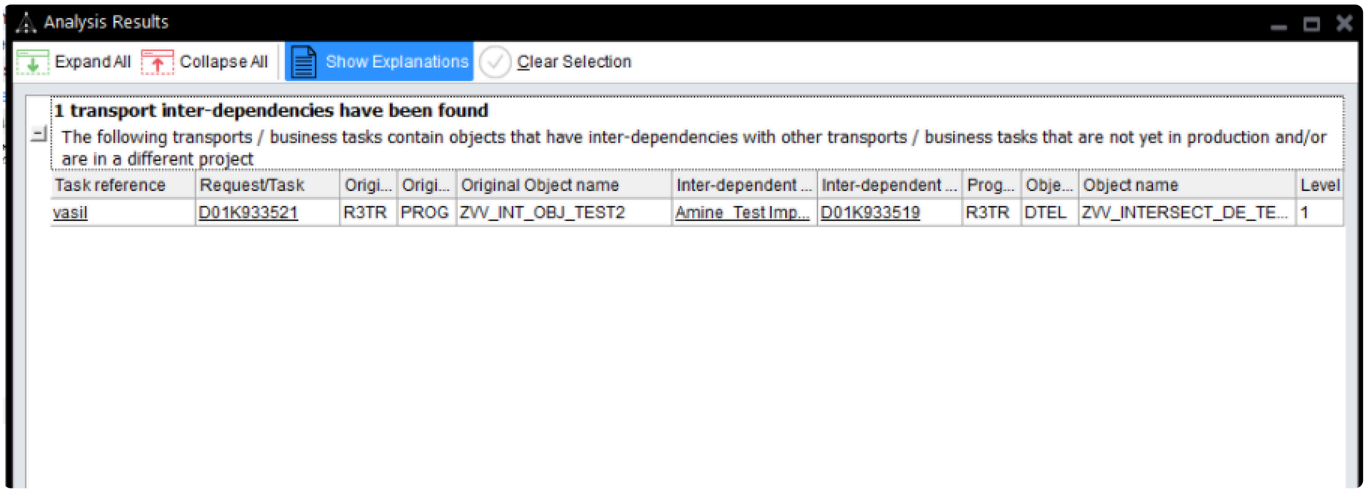
1. Explodes out all dependent objects for a transport/change (to configurable number of levels)
2. Adds in all objects above the transport objects in the dependency hierarchy
2. Checks to see if any of the exploded out objects are in transports in the path, in the same target as the transport being analysed or in front of the transport being analysed (i.e. not in production yet) – to provide an intersection of the transports/objects between the transport(s) being analysed and other transports in the path.

It is possible to run the Check Interdependencies in Path analyser in three ways:

i) to report on the intersection of transports/objects if the intersecting transports do not have the same value as a Custom Field on the Business Task(s) being analysed

ii) to report on the intersection of transports/objects if the intersecting transports are not in the same Project(s) as the Business Tasks I am analysing
iii) to report on the intersection of transports/objects if the intersecting transports are not in the Business Tasks I am analysing.

Picture check interdependencies



Configuration Steps

Parameters:
ANALYSIS_TYPE: Whether you want to run the Analysis by i) Custom Field, ii) Project or iii) Task
CUSTOM_FIELD: the Custom Field number if you have selected that Analysis type.
LEVELS: Specify the number of levels to go down in object hierarchy.

5.3.3. Custom Analysis Types

Further custom analysis types can be added to standard out of the box ShiftLeft analyzers to allow customer specific functionality to be implemented.

In order to do this the relevant analysis table entries need to be maintained in:

- /BTI/TE_ANLTYPE
- /BTI/TE_ANLTYPEP
- /BTI/TE_ANREASON
- /BTI/TE_ANREAS_P
- /BTI/TE_ANRELINK

It is recommended to number any custom analysis types and reason codes starting with a ‘9’ to distinguish them from standard ones and to prevent them from being overwritten during upgrades. E.g. 9001

To implement an analysis type one of the standard TE analysis function modules should be copied to a Z version so the framework and parameters can be copied and utilised.

The recommendation is to copy function module **/BTI/TE_ANALYSIS_CHECKDATE** as this utilises analysis parameters and custom field processing both of which are likely to be required in any custom analysis types.

Once the table entries and function module are available they will appear for use within the Transport Expresso configuration alongside the standard TE ones.

5.3.4. Emailing Analysis Results

Within Transport Expresso, it is possible to email analysis results to key stakeholders, using existing Custom Notifications Functionality.

Configuration Steps

Step	Details
1	Switch on Custom Notification as part of variant for program /BTI/TE_RNOTIFICATION_ENGINE.
2	Add your required notification in table /BTI/TE_NOTIF_CU. Notes: NOTIF HTML: The standard /BTI/TE_SCHEDULED_ANALYSIS HTML template should be used. HANDLING CLASS: /BTI/TE_CL_CUST_NOT_SCHED_ANL
3	Schedule a variant of program /BTI/TE_RANALYSE_REQUESTS_LOC for the specific analyser/ path/location for which you want email to be sent. Note: Flag ‘create notification entry’ must be set.

5.4. Documentation

5.4.1. Document Categories

It is possible to add documents into Transport Expresso, in both the SAP GUI, Windows GUI and Web UI.

Documents can be added at Task or Transport Form level, and also in Test Queues. The original document can be uploaded directly (in which case a copy of the document is stored in the TE Domain Controller, or alternatively a URL link can be added to reference where the document is stored elsewhere.

As part of the process for adding documents, you can specify the document category (eg Functional

Spec, Unit Test Evidence, UAT Test Script, Email, etc)

These categories are configured in table **/BTI/TE_ATT_CAT** in the Domain Controller.

Document Categories can be restricted so that they can only be used for Business Tasks, Transport Forms or Test Results. This is controlled via the CLASS field. The valid entries for this field are:
TASK
REQUEST
TESTRESULT

If the CLASS field is left blank, the document category is valid for all object types.

Default Document Categories

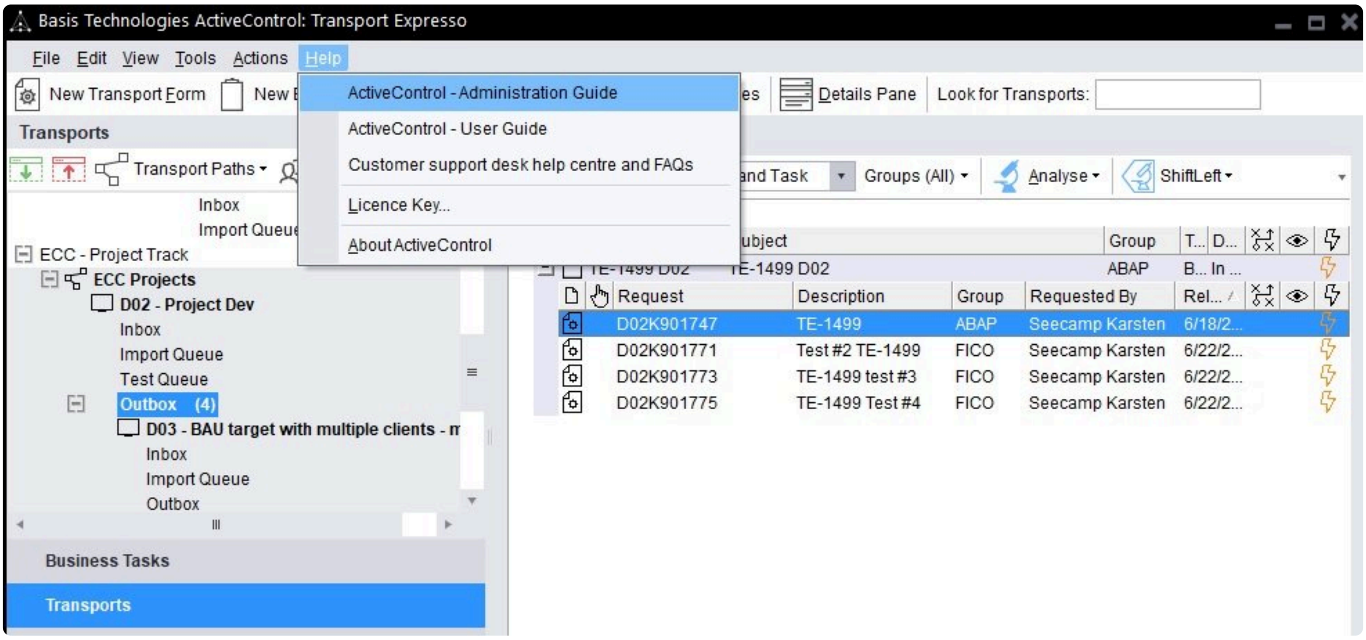
It is possible to set default document categories so that a configured Category is pre-populated during the process of uploading a Document in both the TE Web UI and also the TE Windows GUI; this is useful for customers that always upload the same types of documents or alternatively do not want to benefit from the Document Category functionality.

Defaults can be specified (for Task, Request and Test Queue level) via the DEFAULT_CAT field in the **/BTI/TE_ATT_CAT** table, by entering an “X” against the row that you want to be defaulted.

5.4.2. Documentation Links

It is possible to add URL documentation links via the web UI and Windows GUI help menus to point at standard BTI or customer specific TE documentation.

These document links will then be visible via the Help menu in both the TE Windows GUI and the TE Web UI.



Document links can be maintained in the TE Domain Controller via table **/BTI/TE_HLP_LINK**.

5.5. Control Point Skipping

It is possible to configure certain Transport Forms to skip certain control points in the path, based on the following fields.

- Transport form group
- Transport form type
- Task group
- Task type
- Task priority
- Any custom fields

Example scenarios of where this functionality might be useful include where you do not require Merge BAU transports to be approved through every step of your Project landscape process, or similarly, where you do not want Maintenance changes to skip certain control points because they do not need the same level of approval as other changes being delivered.

Configuration of Control Point Skipping

The configuration of the skip capability is done within the TE Domain Controller backend, and is a two step exercise:

1. Switching on the Skip user exit by adding a row in table /BTI/TE_EXITC for */BTI/ TE_EXIT_SAMPLE_0710 *

(You can either use this sample FM in /BTI/TE_EXITC or create a Z version)

2. Setting up the skipping you require in your process via configuration table /BTI/TE_SKIPCP

(by adding rows for the relevant task/form fields that you want to skip CPs for along with the targets/ locations)

Please note the following information when configuring /BTI/TE_SKIPCP

- Class = either REQUEST or TASK
- Field = either GROUPID or TYPEID or PRIORITY (or the custom field number if you have checked the CUSTOMFIELD flag)
- ID = long serial no. for Group ID or Type ID, taken from table /BTI/TE_GROUPS or /TE_TYPE, Priority will equal 1,2,3,4
- Target = Target ID from within TE Windows GUI
- Location = the following naming convention properties I = Inbox Q = Import Queue T = Test Queue O = Outbox

5.6. Inline Conflict Analysis

Transport Expresso provides a capability to notify team members, at the point of assigning a change to a transport, if the change conflicts with another change already made to the same content in another development system. When a conflict is detected, the conflicting transports are displayed and the team member is given the opportunity not to save their changes.

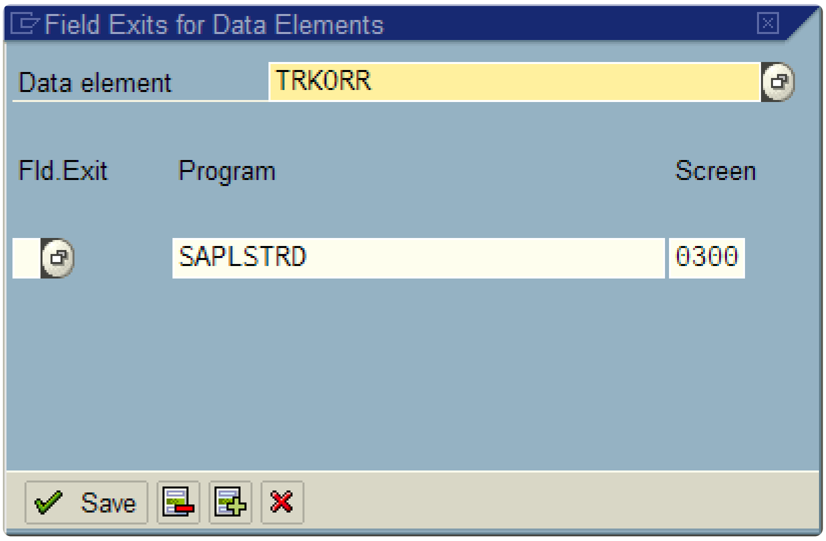
When the inline conflict analysis is performed, Transport Expresso connects from the current SAP development system to the Transport Expresso domain controller, which in turn connects to the other configured SAP development systems to check for conflicting changes. A target SAP system is deemed to be a development system if the target attribute “Show transport requests created in this SAP system within Transport Expresso” is enabled.

In order to restrict the systems that Transport Expresso checks during the analysis, the relevant entries need to be maintained in table /BTI/TE_INLINE. For example, this could be used to check from the ECC project development system (field SYSID) to the ECC BAU development system only (field CHECK_SYSID). The INACTIVE flag allows specific systems checks to be switched off if required.

In addition, the client to check when connecting to the relevant development system must be specified in the target configuration Import Options tab in field “Before Importing, check whether the same content has been changed in this SAP client”. This must be done in the target system that is being connected to for the conflict analysis.

This capability uses an ABAP field-exit which must be implemented in each SAP development system in which you wish to perform the inline conflict analysis. The steps to enable this are:

1. Ensure that field-exits are enabled in the SAP development system. You can use standard SAP report RSPFPAR to check that the system profile parameter abap/fieldexit is set to YES.
2. Create RFC destination TRANSPORT EXPRESS CONTROLLER to connect to the Transport Expresso domain controller.
3. Execute standard SAP report RSMODPRF to maintain the list of field-exits in the SAP system. Do not enter any values on the selection-screen.
4. Choose menu item Field exit | Create. Enter data element TRKORR in the popup window and click continue.
5. You are now prompted to create function module FIELD_EXIT_TRKORR. This function module can be assigned to any “Z” function group. As described above, the code delivered in function module FIELD_EXIT_TRKORR_SAMPLE should be copied into the field exit FIELD_EXIT_TRKORR function module to achieve this. This then checks for the “Transport is first used” and “In-Line Conflict Analysis” activation flags on the domain controller.
6. Save and activate the function module and then press back to return to report RSMODPRF.
7. The data element TRKORR will now appear in the report list. Select the checkbox next to it and click the toolbar button Assign prog./screen.
8. In the popup window, enter program SAPLSTRD in the program field and screen number 0300 in the screen field. Click the Save button.



9. Lastly, select the checkbox next to the TRKORR data element again and choose menu item Field exit | Activate.
   Transport Expresso’ inline conflict analysis capability is now active. You can test that it is working by making a change to the same ABAP program in two different SAP development systems.

5.7. Non-ABAP / Java transports and CTS+

In order to deploy non-ABAP / Java transports, Transport Expresso utilises CTS+ so this must be setup and configured beforehand.

For each non-ABAP / Java system to be managed by Transport Expresso a new target and RFC destination must be setup as described in the Configuring Transport Expresso section. In this case there are some differences in the setup.

For example, you might have the following non-ABAP / Java systems:

- JD1 – Development
- JT1 – Test
- JP1 – Production

The CTS+ controller system in this example is CT1

RFC Destinations

An RFC destination is required for each system but for non-ABAP / Java systems this must connect to the relevant CTS+ controller system. In the example above these would be setup as follows:

- TRANSPORT EXPRESS JD1 – connects to CTS+ controller system CT1
- TRANSPORT EXPRESS JT1 – connects to CTS+ controller system CT1
- TRANSPORT EXPRESS JP1 – connects to CTS+ controller system CT1

Target Systems

Each non-ABAP / Java system needs to be created as a TE target system in the same way as is done for ABAP systems. When setting up these targets in TE there are some differences compared to ABAP systems:

Clients	For the target client specify the client of the CTS+ controller system.
Ignore System Id during import (CTS+ only)	For CTS+ systems the SAP system ID is different to the system that is the CTS+ domain controller. In this case the flag should be set to inform Transport Expresso that the target is a CTS+ system.

Transport Paths

When creating the transport path the “Valid Source Clients” should be setup for the relevant CTS+ development system and referencing the client for the CTS+ controller. E.g. JD1:100

Once the above setup has been done TE will then automatically use CTS+ to process and import the non-ABAP / Java transports.

Note: For non-ABAP / Java merge targets please refer to the Target Properties Import Options II section for more details on how to setup the conflict detection.

5.8. Template Protection

Transport Expresso can be be used by SAP customers using a Master Template / Child Developments based landscape, to ensure the Template system is protected.

Template Protection takes the form of object blacklisting – to prevent objects from being created in either the master template or child development systems

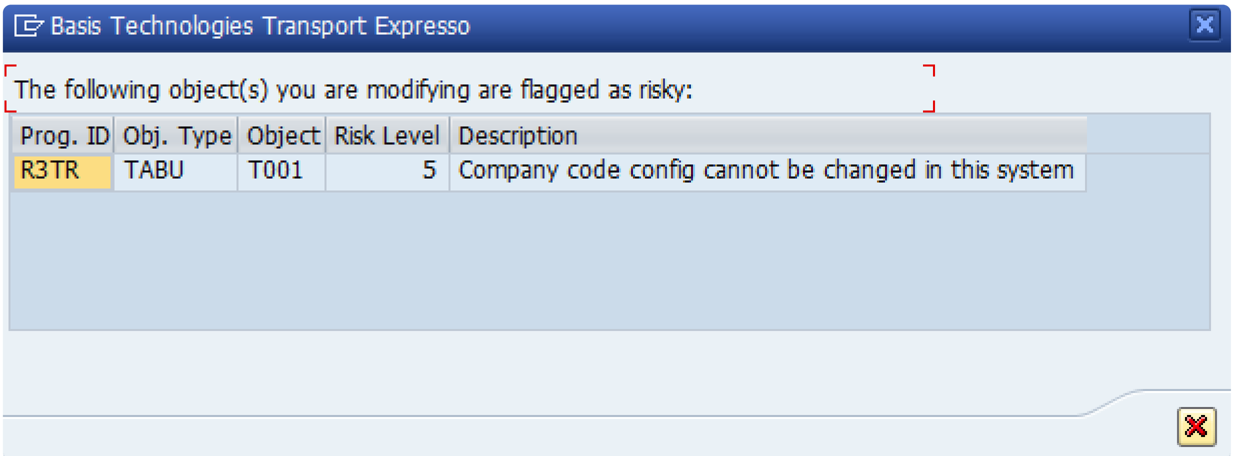
This capability uses Risk Guard / Inline Conflict Analysis functionality within Transport Expresso.

Configuring Object Blacklisting

1. A list of objects in the blacklist can be uploaded en-masse / maintained in the TE risk object groups configuration table **/BTI/TE_RISKGOB**

1. Each development system is then configured for the appropriate risk object groups along with a risk level that if exceeded with trigger the error/warning, in table **/BTI/TE_RISK_INL**

When an object contained within the blacklist is then added to a transport, the developer will receive message when saving to a transport.



Depending on the configuration, this message can be either an error or a warning.

5.9. Branched Development Systems

Transport Expresso provides additional support for branched SAP development streams, such as when a Production Support development stream is copied to a project development stream to allow project changes to be made in parallel to and independent of continuing Production Support changes.

The problem to be overcome with branched development systems is ensuring that Production Support changes are applied completely, correctly and at the right time to the project development stream. Transport Expresso provides additional tools needed to control and manage the branched development streams as an integrated whole by:

1. Tracking when changes must be applied to the project development system.
2. Maximising productivity by analysing changes to determine those that can be automatically applied and those which must be manually merged because of conflicts with project work already undertaken.
3. Providing a reconciliation capability to give confidence that all changes have been applied completely and without regression.

It is important to note that whilst the methodology for managing branched development systems may result in production support transport requests being imported into the project development system, such transport requests are not imported into the downstream systems of the project development stream, such as the project Quality Assurance system.

Instead, Transport Expresso creates special transport requests called merge requests (similar in nature to backup requests) in the project development system and it is these requests that are transported throughout the project development stream. This differentiation is made to reduce complexity and confusion caused by transports being source from multiple systems.

5.9.1. When to apply changes?

Production support changes should only be applied to the project development stream after they have been imported into the Production system, otherwise there is a risk that the project will introduce changes that the business is either not ready for or do not want, when it goes live.

To this end, it is necessary to add the target for the project development system to the transport path for the Production Support development stream. The project development system must appear as a child of the Production system. Once changes are applied to the Production system, they will flow to the import queue of the project development system and will be automatically analysed to determine whether the changes can be applied automatically (as described further on the next page).

5.9.2. Analysing changes for conflicts

When production support changes reach the import queue of the project development system, Transport Expresso will automatically analyse the changes to determine if there are any conflicts with changes already made in the project development system.

For performance reasons, Transport Expresso only checks whether the changes conflict with changes already made in the target SAP system (that is, the project development system) if the target’s import option “Check whether the same content has been changed in this system before importing” is enabled. When this option is enabled, you must also specify the client in which client dependent changes are analysed. Specify the client in which you make client dependent configuration changes.

If the changes are found to conflict, then unfortunately the production support changes must be manually merged with the changes already made in the project development system. Such transport requests appear in the import queue with a blue icon to indicate that they should be manually applied. Changes that do not conflict may be imported automatically.

5.9.3. Importing changes that do not conflict

Transport requests that do not conflict may be imported automatically, by selecting them in the project development system’s import queue and clicking the Import toolbar button.

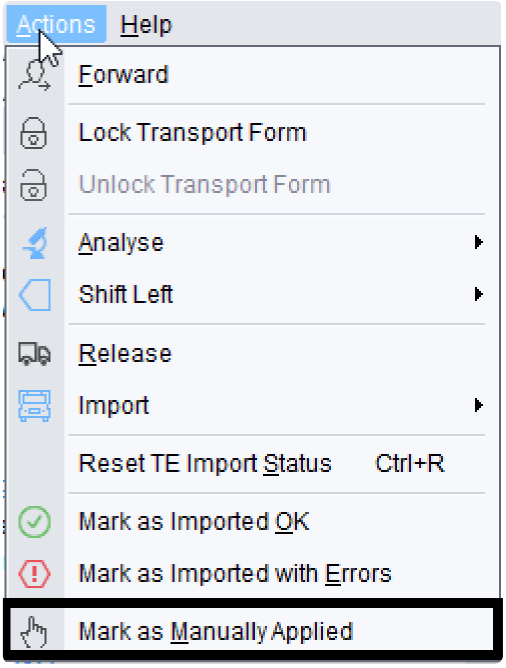
If the target option “Create a merge transport request in this system after importing changes” is enabled, Transport Expresso will create a special transport request, called a merge request, in the project development system after the changes of the import run have been imported. The merge request contains all the items that were on the production support transport requests and is used to transport the same changes to the downstream systems of the project development stream.

Transport Expresso automatically associates the merge request with the same tasks (that is, business issues and requirements) as the production support changes. This supports later reconciliation that those business issues and requirements have been applied to the project development stream before the project goes live.

5.9.4. Indicating that changes have been manually applied

If Transport Expresso determines that production support changes conflict with changes already made in the project development stream, then those changes should be applied manually, merging the production support changes with the project changes.

Once this activity is complete, the responsible team member must notify Transport Expresso that the changes have been manually applied and on which transport request of the project development system the changes were applied (also referred to as a merge request, however this merge request is not created automatically by Transport Expresso). This is done by selecting the applicable transport requests in the project development system’s import queue and clicking on the Mark as Applied Manually option via the Actions toolbar.



Once again, Transport Expresso automatically associates the merge request with the same tasks (that is, business issues and requirements) as the corresponding production support transport requests.

5.9.5. Transporting the merge requests

When demanded by the project, merge transport requests (either manually or automatically created) should be transported to the downstream systems of the project development stream (such as QA), most likely along with other changes made by the project.

No special action is required to do this, other than to complete a transport form for each of the merge requests – as must be done for all transport requests being transported via Transport Expresso.

When the transport form is opened, the merge requests will automatically be associated with the same tasks as the corresponding production support transport requests.

5.9.6. Reconciliation

Before the project goes live, reconciliation report /BTI/TE_RSYSTEM_COMPARISON should be run to check that all the changes that have been applied to the production system have also been applied to a system of the project development stream (most likely the project Quality Assurance system).

This report identifies production support changes that have not been applied to the project development system or merge requests that have not been transported to the concerned project system.

5.10. E-mail Notifications

5.10.1. Standard email notifications

Transport Expresso can send e-mails notifications to individuals to:

- Notify approvers when changes are waiting to be approved (provided the changes are associated with one or more tasks).
- Notify team members that their changes have been imported successfully or with errors. It is possible to additionally notify administrators when a transport is imported with errors.
- In the case of branched development systems, notify team members if their changes should not be imported because of conflicts with changes already made in the project development system.
- Notify team members when changes are waiting to be tested by them (provided that the changes are associated with one or more tasks).
- Notify administrators when a serious error occurs that prevents changes from being imported or an import error occurs. Non administrator users can also be informed of these issues for specific transport paths by maintaining entries in table **/BTI/TE_NOTIFUSR**.

In some cases, the notification e-mail also contains an attachment to allow an individual to action the e-mail immediately. For example, an approver can double-click on an attachment to display further information about the changes waiting to be approved and then approve them if desired.

In order to send e-mail notifications, report **/BTI/TE_RNOTIFICATION_ENGINE** must be scheduled to run periodically in the Transport Expresso domain controller. This report allows you to filter those target SAP systems that various types of notifications should be sent for, as sometimes you may not want each type of notification to be sent for each target SAP system.

Before sending a notification e-mail, Transport Expresso attempts to determine the recipient’s Internet e-mail address from their SAP user ID. If an Internet address is not specified then the e-mail is sent to the SAP user ID and must be viewed using the SAPoffice Business Workplace (transaction SBWP).

In order to send e-mails to Internet e-mail addresses, a connection to an external e-mail server must have been configured for the Transport Expresso domain controller. In systems running on SAP’s Web Application Server 6.20 and higher, this is easily done using SAPconnect’s built-in SMTP connection.

Transport Expresso provides HTML templates, stored in the Web Repository (transaction **SMW0**), for each type of notification. These templates can be copied and adapted if desired.

5.10.1.1. Action Reminder Notifications

It is possible to send automated reminder emails to Testers and Approvers when they do not perform their required action in a configurable timeframe.

TE Reminder emails can be sent to configurable audience if a TE Business Task has sat in a particular Inbox, Outbox or Test Queue for longer than a configurable period of time.

These reminders can be configurable at a Path level, or down to an individual Target or Target Location. It is also possible to send out emails dependent on the TF Group and Type.

Two reminders can be sent, each one potentially to different audiences. Eg the first reminder to the responsible person, the second reminder to a more senior manager.

Configuring TE Reminder Notifications

Setting up TE Reminders is done as follows:

1) Configure /BTI/TE_RNTF_ALR with the required reminders.

TARGET: the target ID of the configurable target
LOCATION: the location within the target (Inbox, Outbox, Test queue)
PATH: path id for the configured target
ROLEID: Business role ID of a task
ALERTDAY1: number of days the first reminder e-mail should be sent
ALERTDAY2: number of days the second reminder e-mail should be sent
GROUPID1: the groupid of the recipients of the first reminder e-mail
GROUPID2: the groupid of the recipients of the second reminder e-mail

Notes:
PATH:- If using Path level reminders, configure /BTI/TE_NOTIFUSR to specify the recipients.
ROLE ID:- Configure any Business Roles (in the TE Windows GUI Configuration screen) if you want to send any Reminders based on RoleID. (the serial ID is found in /BTI/TE_ROLEU)
GROUPID1 and GROUPID2:- Configure /BTI/TE_NOTIF_RE with any Groups you have specified in Step 1.

2) Switch on the ‘Remind Approvers’ and/or ‘Reminder Testers’ notifications in your /BTI/TE_RNOTIFICATION_ENGINE program variant.

5.10.2. Custom email notifications

In addition to the many standard types of notifications that can be enabled, Transport Expresso also allows the configuration of additional ‘Custom Notifications’.

For each notification you wish to send, an entry needs to be put into table **/BTI/TE_NOTIF_CU**. The field values are described below:

Field	Description	Notes
NOTIFID	A unique identifier for the custom notification	
NOTIF_NAME	A description of the custom notification	
NOTIF_HTML	The name of the HTML template for the custom notification	Use transaction SMW0 to copy and update an existing HTML template
TARGET LOCATION	If the custom notification is to be triggered when a Transport Form moves into a specific control point, the target and location should be entered	Both the Target and Location fields need to be filled out
DEPL_STAT	If the custom notification is to be triggered when a Task reaches a particular Deployment Status, then the status ID should be entered here	Task status IDs can be found in table /BTI/ TE_TASKSTAT
PLAN_STAT	If the custom notification is to be triggered when a task reached a particular Planning Status, then the status ID should be entered here	Task status IDs can be found in table /BTI/ TE_TASKSTAT
RECIPIENTS	Determines the recipients for this custom notification	See the recipients table below for details
TASK_ROLEID	If the recipients of the custom notification are assigned to a role on the Task, the appropriate ROLEID must be entered here	The Task Role IDs can be found in table /BTI/ TE_ROLEU

The recipients of the custom notification are determined by the value of the RECIPIENTS field in the custom notification table above. The possible values are:

Value	Recipient(s)
O	The Transport Form owner
T	All testers assigned to the Task
N	Users assigned in the system error notification table /BTI/TE_NOTIFUSR for the path which the Transport Form is in
R	Users assigned to a particular role on the Task. The role ID must be entered into the TASK_ROLEID field in the custom notification table
Y	Users configured in the recipients table /BTI/TE_NOTIF_RE for this custom notification

The selection-screen of the notification report requires a SAPGUI connection string to be specified, for example: /H/appserver/S/3201 (where ‘01’ refers to the SAP system number). The SAPGUI connection string is needed for e-mail attachments so that a SAPGUI connection can be made to the domain controller SAP system.

For testing purposes, the selection-screen of the notification report also allows for all generated e-mails to be sent to the current user, rather than to the recipients themselves.

5.10.2.1. Analysis Result notifications

It is possible to send General Analysis or Shiftleft analyis results to defined users in an automated email.

This can be used to report any analysis issue where approve/import anyway has been run.

Analysis Result notifications can be sent for specific Paths, Targets, and Locations, and optionally also based on the Type and Group of the Transport Form that had the analyser warnings.

Configuration Steps

1) Create users groups and assign the relevant users in table **/BTI/TE_ANLNFGRU** table in TE Domain Controller,

2) Define the conditions for sending out Analysis Results in table **/BTI/TE_ANLNFGRP** in the TE Domain Controller,

Result notifications
PATH: Path where the analysis is run (Mandatory)
TARGET: Target where the analysis is run (Mandatory)
LOCATION: Location (Inbox, Outbox, Import Queue) where the analysis is run (Mandatory)
TYPEID: Transport form type (Optional). Only set to restrict the results for specific transports
GROUPID: Transport form group (Optional) . Only set to restrict the results for specific transports
REASON: Reason code for analysis issues (e.g. 21 is for the Risk Guard analysis). If not specified the email
will show all analysis issues
USRGROUP: User group (from /BTI/TE_ANLNFGRU) where you want to send the emails to

3) Switch on the ‘Analysis results’ notification in **/BTI/TE_RNOTIFICATION_ENGINE** program.

5.10.2.2. Import Errors – Additional Recipients

Standard email notifications available through /BTI/TE_RNOTIFICATION_ENGINE include notifying Transport Owners whenever a transport imports with RC8 or above.

It is also possible to notify additional stakeholders via configuration

This is done via configuration in the TE Domain Controller by doing the following:

1) Creating the required additional import error notifications via table **/BTI/TE_NOTIF_IE**

2) Defining the recipients for the notifications created in (1) via table **/BTI/TE_NOTIF_RE**

5.10.3. Hints – Email Notifications

- To prevent attachments from being added to emails generated by Transport Expresso, ensure that the parameter **Add Attachments in Email** is unchecked (in TE Domain Controller run job /BTI/TE_RNOTIFICATION_ENGINE and update the variant if required).

- To mark users to not receive any email notifications they can be maintained in table **/BTI/TE_EMAILIGN**. These users can then be excluded via user exit 0510 and removed from the list of recipients.

- To ensure that approval and testing emails direct the user to the web UI please ensure that the **BSP sever address** parameter in the email notification program variant is set to the correct value. *E.g. http://:80/*

- For Single Sign-On (SSO) rather than using the index.html page above please use the main.html page instead as this will bypass the login screen and use the current user logon ticket. To override this maintain the required page in the **Web UI HTML Path** parameter.

5.11. Authorisations

5.11.1. User Authorisations

ActiveControl has the ability to be able to control which functions users are able to access and which objects are visible to the user when they log into the GUI.

Administration users are automatically given access to all functionality but non-admin user access can be controlled by setting up the required access using SAP authorisation profiles.

Basic authorisation to the ActiveControl application for all users requires one of the following TE roles to be assigned:

Role Name	Description
/BTI/TE:CTS_USER	This role contains all of the basic authorisations that are required to log into ActiveControl application and needs to be assigned to every ActiveControl user.
/BTI/ TE:CTS_ADMIN_USER	This role contains all of the basic authorisations that are required to use the application, plus some ActiveControl and SAP standard authorisations required for actions aimed more at Basis and Configuration users of ActiveControl.

These roles are included within the standard user roles supplied with ActiveControl, which are described in detail later in this document.

In addition to these basic authorisation roles, the authorisation concept works in two different ways. Firstly, users can be restricted in what is visible to them when logged into ActiveControl. The details of how this is configured are described below in the View Authorisations section. Secondly users can be restricted in what they do in the system. This is described in the Activities Authorisation section. Both concepts are now controlled through configuration tables in ActiveControl and assigning the appropriate profiles in the user master records of users.

5.11.2. View Authorisations

View authorisations can be set up so that different groups of users only see the data objects relevant to them when using ActiveControl. For example, if you have completely different teams delivering projects and/or performing Production support activities, each team member only sees the transport paths, transports and configuration relevant to their area.

The main concept in view authorisations is the Authorisation Group. An Authorisation Group can be allocated to each TE object (Path, Project, Group etc.). Each user is then allocated a SAP Role giving them access to certain Authorisation Groups. A user will therefore only see the objects allocated to an Authorisation Group they have access to.

Authorisation Groups can be assigned to the following Objects in TE:

- Paths – If there are multiple teams, such as Production Support and Project teams, each team member only sees the transport paths relevant to them. So a Production support team member would only see the Production Support paths in TE and could only allocate a transport to those paths
- Projects – Different teams may only be able to allocate Tasks to certain projects

- Groups – The valid Groups can be restricted on Tasks and Transport forms
- Types – The valid Types can be restricted on the Tasks and Transport Forms
- Change Paths – The change paths can be restricted when creating Tasks
- User Roles – The user roles can be restricted when creating Tasks
- Custom Fields – Whether a custom field is visible to a user
- Import Methods – Import methods available can be restricted

Currently, all View Authorisations configuration is done in the SAP GUI.

Note: If an object (Path, Project, etc.) is not allocated to any Authorisation Group, all users will have view access to it by default so if this is not required please ensure that all object values are allocated to at least one authorisation group.

- Authorisation groups can be maintained in table /BTI/TE_AUTHGRPS.
- To allocate an Authorisation Group to a TE object an entry needs to be maintained in the table /BTI/TE_AUTHOBJS on the domain controller.

Table fields for /BTI/TE_AUTHOBJS

Field Name	**Label**	**Description**
OBJECT_TYPE	Object Type	This is the TE object type. Allowed types are in table /BTI/ TE_AUTHOTYP. These table includes all of the objects that can be assigned to Authorisation Groups, including Paths, Projects, Groups, Types and custom fields
OBJECT_KEY	Internal ID	The internal ID of the TE Object. This will be the numeric ID used as the object key in TE: • Path: Field PATH from table /BTI/TE_PATH • Project: Field ID from table /BTI/TE_PROJ • Group: Field GROUPID from table /BTI/TE_GROUPS • Type: Field ID from table /BTI/TE_TYPE • Change Path: Field PATH from table /BTI/TE_CPATH • User Roles: Field ROLEID from table /BTI/TE_ROLEU • Custom Fields: Field FIELDID from table /BTI/TE_CUSTF • Import Methods: Field METHOD from table /BTI/ TE_IMPMET
AUTH_GROUP	Authorisation Group	The authorisation group that is to be associated with this object. The valid list of authorisation groups should be maintained in table /BTI/ TE_AUTHGRPS
CUSTOMFIELD_VAL	Custom Field Value	(Reserved for future use)

Once entries in the authorisation objects table have been maintained, roles will need to be created and allocated to users so that ActiveControl can determine which authorisation groups each user has access to. The authorisation object that controls this access is Y_TEAUTH_V.

Authorisation Object Y_TEAUTH_V fields

Field Name	Label	Description
/BTI/ TE_AG	Authorisation Group	This is the authorisation group (or groups) the user has access to. An * in this field indicates the user has access to ALL authorisation groups
/BTI/ TE_C1	Path Category 1	A category can be allocated to a path. This could be to indicate all paths that are BW or XI, for example. And these entries can be used to allow access only to certain categories. The categories a user has access to should be put in this field. An * indicates the user has access to ALL categories.
/BTI/ TE_C2	Path Category 2	(Reserved for future use)
/BTI/ TE_TA	Target Dev System	This is the development system (or systems) for which the user is able to see transports without a Transport Form. This access restriction should only be required if there are multiple 'source' development systems. The SID of the development system(s) should be entered here. An * in this field indicates the user has access to all configured source systems.

Once the required roles for View Authorisations have been created, they should be allocated to the appropriate users.

5.11.2.1. Important Restrictions Regarding View Authorisations

It should be noted that although View Authorisations allow for a very granular way of restricting the objects that are displayed to users when they log into ActiveControl, the complexity and overhead of the role and user maintenance should be taken into account during the initial design phase.

It is also important to understand that assigning Authorisation Groups can have unintended consequences if not all objects within the object hierarchy are allocated to the same set of groups. For example, the View Authorisations configuration may give a user access to see a particular path, but not access to see Tasks (or Forms) that are part of a particular Project. This means the user will not be aware of all of the transports waiting for approval in a control point, but only those they have authorisation to see. They could therefore inadvertently only approve the transports they have authorisation to see, without knowing the full picture.

In general it is only recommended to use View Authorisations to separate out TE objects at the highest level, for example, to give separate views to the project delivery and production support teams, or to give separate views to two completely separate project teams using the same ActiveControl Domain

Controller.

5.11.3. Activity Authorisations

Activity Authorisations can be configured to further restrict user access in addition to the View Authorisations.

Activity Authorisations allow the actions the user can perform on visible objects can see to be restricted. The activities are broken down into 6 categories, with each category being controlled by a separate authorisation object:

5.11.3.1. Activity Authorisation Objects

Authorisation Object	Description
Y_TECONF	This authorisation object controls access to the configuration options within ActiveControl, such as creating Target systems and Paths
Y_TEUSER	This authorisation object controls initial access to the ActiveControl GUI and certain activities allowable by user, such as the ability to delegate approval rights to another user.
Y_TE_TASK	This authorisation object controls all activities that can be performed on a Task in ActiveControl, including creating, changing and assigning users.
Y_TEFORM	This authorisation object controls all activities that can be performed on a Transport Form in ActiveControl, including creating, changing, releasing and assigning users.
Y_TEIMORT	This authorisation object controls all activities concerning the import of transports into systems, including marking transports as imported manually and re-importing transports as required.
Y_TEADMIN	This authorisation object controls access to the administrative functions within ActiveControl, including setting UModes on transports and manually changing the process flow of transports as required.

These authorisation objects should be used to create the appropriate roles for each user type.

5.11.3.2. Activity Authorisation Object Details

Each authorisation object related to Activity Authorisations is detailed below. Only a sub-set of activity codes are valid for each authorisation object, and these are also shown below.

Authorisation Object	Field	Description	Valid Entries

Y_TECONF	/BTI/ TE_OB	TE Configuration Object	TARGET, PATH, OTHERCONFIG, TARGETROLES, SCHEDULE, GROUP, TYPE, LABEL, PROJECT, FIELD, ADMIN, PAPPROVE, USERROLES, CHGSTEPTEMPLATE, CHGPATHSTEP, CHGPATH, USER, MANDATORYFIELD, TASKSTATUS
Y_TECONF	/BTI/ TE_AC	Activity Code	CREATE, CHANGE, DELETE
Y_TEUSER	/BTI/ TE_AC	Activity Code	DELEGATE, FORCEDELEGATE, CONFIGCHECK, CONFIG, APPROVEALL, TESTALL, VIEWCONIMPORTQUEUE, DEPLSTATUS, PLANSTATUS
Y_TE_TASK	/BTI/ TE_AC	Activity Code	CREATE, CHANGE, CHANGEASSIGNED, DELETE, LOCK, UNLOCK, ADDROLE, REMOVEROLE, ADDCHGPATH, REMOVECHGPATH, ADDTESTER, REMOVETESTER, CREATETR, CHANGETR, DELETETR, ADDTR, ADDUSER, REMOVEUSER, REMOVEFORM, CHGDEFAULTTESTER, CHGPATHSTEPUSER, TESTAPPROVE
Y_TE_TASK	/BTI/ TE_DS	Deployment Status	List the Deployment Statuses that the activity is permitted for or “*” for all
Y_TE_TASK	/BTI/ TE_PS	Planning Status	List the Planning Statuses that the activity is permitted for or “*” for all
Y_TE_TASK	/BTI/ TE_PR	Project	List the Projects that the activity is permitted for or “*” for all
Y_TE_TASK	/BTI/ TE_PT	Task Priority	List the Task Priorities that the activity is permitted for or “*” for all
Y_TE_TASK	/BTI/ TE_GP	Task Group ID	List the Task Group IDs that the activity is permitted for or “*” for all
Y_TE_TASK	/BTI/ TE_TY	Task Type ID	List the Task Type IDs that the activity is permitted for or “*” for all
Y_TEFORM	/BTI/ TE_AC	Activity Code	CREATE, CHANGE, CHANGEOTHERS, DELETE, LOCK, UNLOCK, RELEASE, RELEASEOTHERS, FORWARD, FORWARDOTHERS, ADDTASK, REMOVETASK, DELETEOTHERS
Y_TEFORM	/BTI/ TE_GP	Form Group ID	List the Form Group IDs that the activity is permitted for or “*” for all
Y_TEFORM	/BTI/ TE_TY	Form Type ID	List the Form Type IDs that the activity is permitted for or “*” for all
Y_TEIMPORT	/BTI/ TE_AC	Activity Code	IMPORT, BACKOUT, MARKASIMPORTED, ADDTOIMPORTQUEUE, RESETIMPORTSTATUS, MARKASMANUALLYAPPLIED
Y_TEIMPORT	/BTI/ TE_TR	Target role	List the Target Roles that the activity is permitted for or “*” for all
Y_TEIMPORT	/BTI/ TE_TA	Target ID	List the Target System IDs that the activity is permitted for or “*” for all
Y_TEADMIN	/BTI/ TE_AC	Activity Code	APPROVEANYWAY , ADDTOCONTROLPOINT, REMOVEIMPORTLOCK, STOPONERROR, ASSIGNSCHEDULE,

			SETUMODES
Y_TEADMIN	/BTI/ TE_TR	Target Role	List the Target Roles that the activity is permitted for or “*” for all
Y_TEADMIN	/BTI/ TE_TA	Target ID	List the Target System IDs that the activity is permitted for or “*” for all
Y_TEADMIN	/BTI/ TE_CP	Location	List the Locations that the activity is permitted for or “*” for all

5.11.4. Important Restrictions Regarding Activity Authorisations

It should be noted that although Activity Authorisations allow for a very granular way of restricting user access within ActiveControl, the complexity and overhead of the role and user maintenance should be taken into account during the initial design phase.

Although standard SAP allows a range of values to be entered into authorisation object fields, using the ‘From’ and ‘To’ options, this functionality should NOT be used within ANY ActiveControl authorisation object. Only single values or multiple values are allowed within ActiveControl authorisation objects. The usage of ranges may result in unintended results during Windows GUI authorisation checks.

Several of the authorisation objects contain fields which are reserved for future use. These fields should always have the value of ‘*’ to allow full access. Entering any other values in these fields may result in unintended results during authorisation checks.

5.11.5. Standard Roles delivered with ActiveControl

A set of roles and composite roles are delivered with ActiveControl which can be copied and changed as required at client sites.

If the client wishes to take full advantage of the flexibility and granularity of the new authorisation concept, the following standard roles are supplied with ActiveControl, and can be used or copied and changed as required.

All of these are composite roles made up of a set of simple roles and have been created as a guide to best practice when setting up the ActiveControl authorisations concept:

Composite Role	Description
/BTI/TE:STD_VIEW_ROLE	The standard role for view only access to ActiveControl. This contains:

	• /BTI/TE:CTS_USER • /BTI/TE:STD_VIEW_AUTHS
/BTI/ TE:STD_DEVELOPER_ROLE	The standard developer role for creating and maintaining transport forms and tasks. This contains: • /BTI/TE:CTS_USER • /BTI/TE:STD_DEVELOPER_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/TE:STD_PLANNER_ROLE	The standard role when using the planning functionality within ActiveControl and executing planning steps. This contains: • /BTI/TE:CTS_USER • /BTI/TE:STD_PLANNER_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/ TE:STD_TEAM_LEAD_ROLE	The standard role for team leaders and approvers in ActiveControl. This contains: • /BTI/TE:CTS_USER • /BTI/TE:STD_DEVELOPER_AUTHS • /BTI/TE:STD_PLANNER_AUTHS • /BTI/TE:STD_TEAM_LEAD_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/TE:STD_TESTER_ROLE	The standard role for testers in ActiveControl. This contains: • /BTI/TE:CTS_USER • /BTI/TE:STD_TESTER_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/ TE:STD_CHANGE_TEAM_ROLE	The standard role for change teams. This contains: • /BTI/TE:CTS_USER • /BTI/TE:STD_CHANGE_TEAM_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/ TE:STD_PROJECT_MGR_ROLE	The standard role for project managers. This contains: • /BTI/TE:CTS_USER • /BTI/TE:STD_PROJECT_MGR_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/TE:STD_BASIS_ROLE	The standard role for transport maintenance, import and error handling. This contains: • /BTI/TE:CTS_ADMIN_USER • /BTI/TE:STD_BASIS_AUTHS • /BTI/TE:STD_DEVELOPER_AUTHS • /BTI/TE:STD_TEAM_LEAD_AUTHS • /BTI/TE:STD_VIEW_AUTHS
/BTI/TE:STD_ADMIN_ROLE	The standard role for configuration and administration access to ActiveControl. This contains:

	• /BTI/TE:CTS_ADMIN_USER • /BTI/TE:STD_ADMIN_AUTHS • /BTI/TE:STD_BASIS_AUTHS • /BTI/TE:STD_DEVELOPER_AUTHS • /BTI/TE:STD_PLANNER_AUTHS • /BTI/TE:STD_TEAM_LEAD_AUTHS • /BTI/TE:STD_VIEW_AUTHS

Most clients should be able to use these ‘out-of-the-box’, but if changes are required, it is important that the client only updates copies of the ActiveControl delivered roles, as these standard roles may be updated during subsequent upgrades or other ActiveControl application updates.

5.11.5.1. Hint – legacy authorisation concept

For clients that wish to continue using the legacy authorisations concept, which broadly grouped users into Administrators and non-administrators, ActiveControl comes delivered with the following two compatibility roles:

/BTI/TE:COMP_ADMIN_ROLE	This role should be assigned to all users that currently have Administrator access
/BTI/TE:COMP_STD_USER_ROLE	This role should be assigned to all other users

Once assigned to users, these roles will give people the same Activity Authorisations as they had in earlier ActiveControl versions.

5.11.6. Approvals and Test Results Entry Authorisations

To control approvals and test results entry / approval for non-administrators the following activities can be allocated to users.

Activity	Authorisation Object	Description
APPROVEALL	Y_TEUSER	(User Activities) Allows approvals to be processed in all locations in Transport Expresso. Overrides the approvers configured in the target system inbox and outbox approvers
TESTALL	Y_TEUSER	(User Activities) Allows test results entry and “Save and Approve” to be processed in all locations in Transport Expresso. Overrides the testers allocated to the tasks

TESTAPPROVE	Y_TE_TASK	(Task Activities) Must be allocated to all users who to allow “Save and Approve” during test results entry

5.11.7. Configuration of Screen Variants

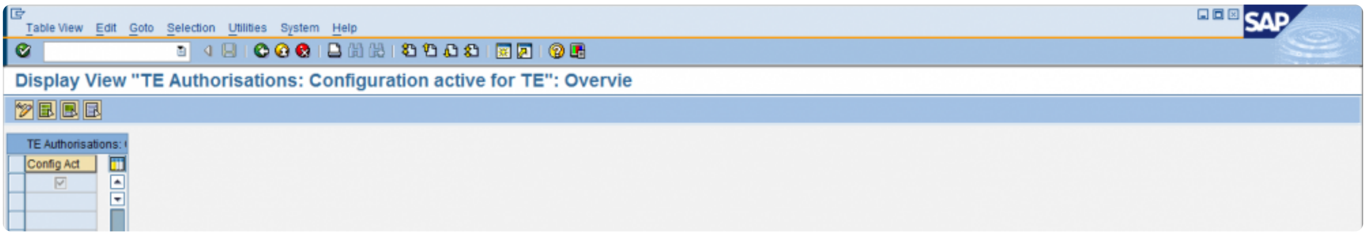
The current authorisations concept for ActiveControl is described in the section above, and should be configured by all clients using this version of the application. It was possible to configure screen variants for the Task and Form screens using the legacy authorisation configuration. This functionality can still be used although authorisation checks are no longer carried out using the legacy configuration.

Screen Variant configuration is being updated in the upcoming versions of ActiveControl, but the following section remains in this guide to describe how screen variants can still be configured.

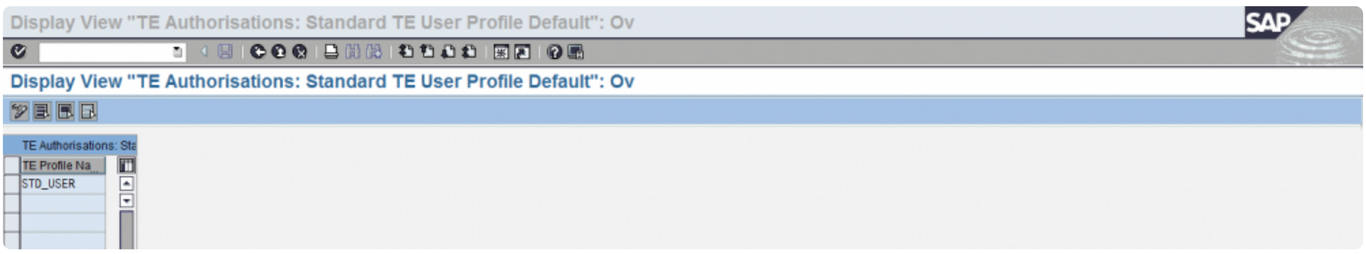
NOTE: All references to authorisations and profiles in this section refer the legacy authorisation concept in ActiveControl and are no longer used for actual authorisation checks throughout the application.

The tables which need to be populated within SAP and the values that are required in order for this functionality to work so that it reflects the settings shown below:

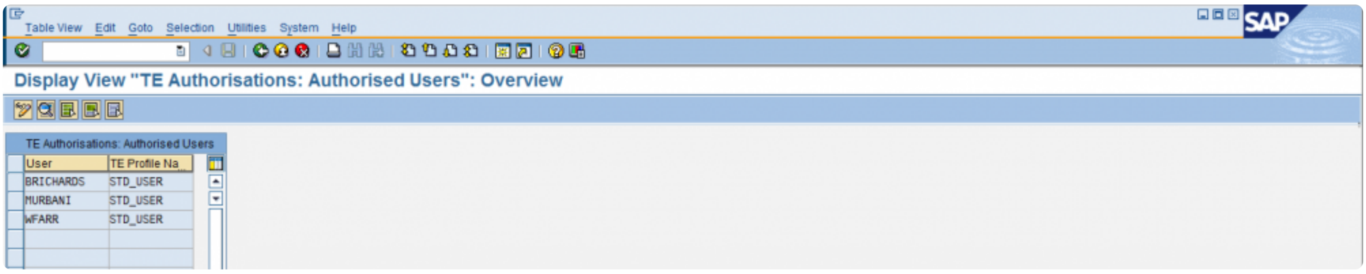
Step 1: Switch on legacy authorisations ‘active’ flag so that the process will be allowed to run.
Table: /BTI/TE_AUTHACTV



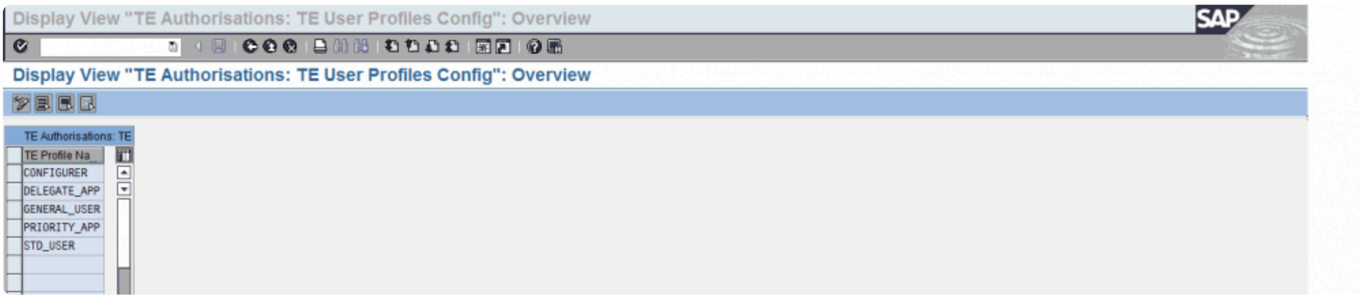
Step 2: Define default standard user profile assigned to users not defined in authorised user table
Table: /BTI/TE_STDPRF



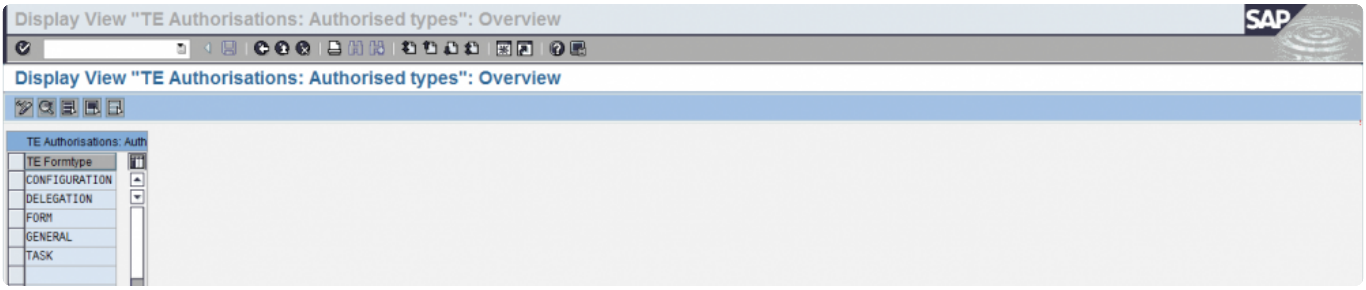
Step 3: Define TE authorisation users. If not specified all users will get the role defined in /BTI/ TE_STDPRF
Table: /BTI/TE_ACCESS



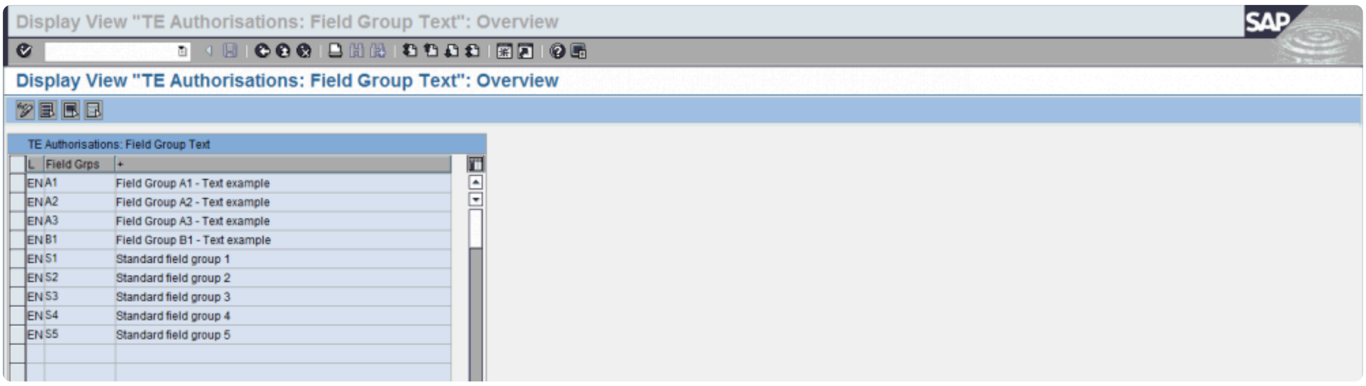
Step 4: Define TE profile which an ‘object’ is to be assigned to
Table: /BTI/TE_USRPROF



Step 5: Define ‘objects’ which activities can be assigned to
Table: /BTI/TE_AUTHTYPE

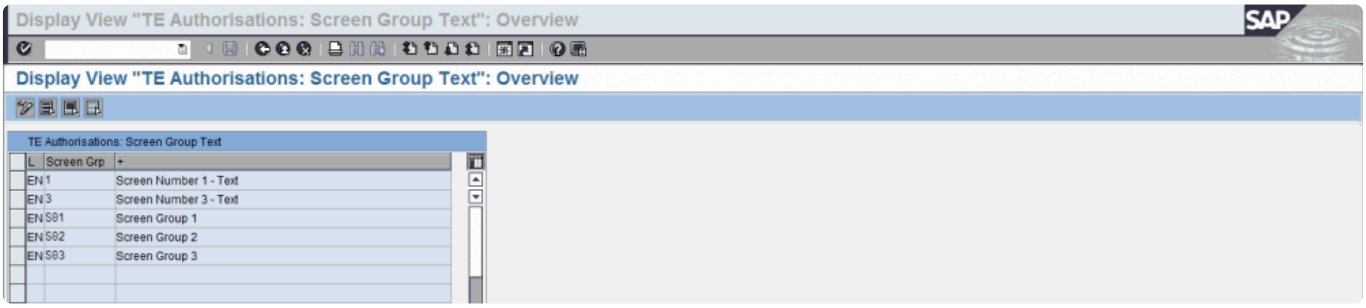


Step 6: Define fields groups to be used for grouping fields – see steps 8 & 9 for more detail
Table: /BTI/TE_FLDGRPT



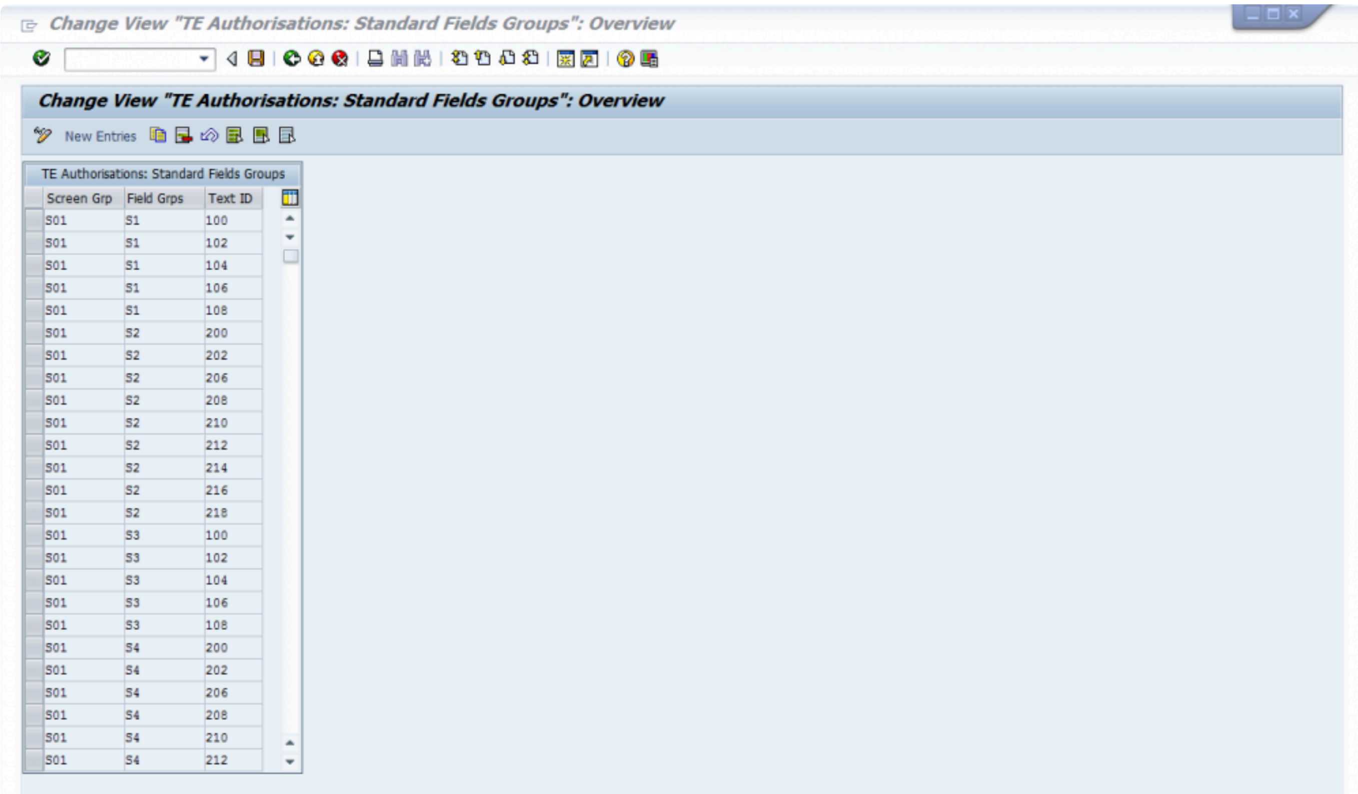
Step 7: Define screen groups to be used for group fields – see step 8 & 9 for more detail

Table: /BTI/TE_SCRNGRPT



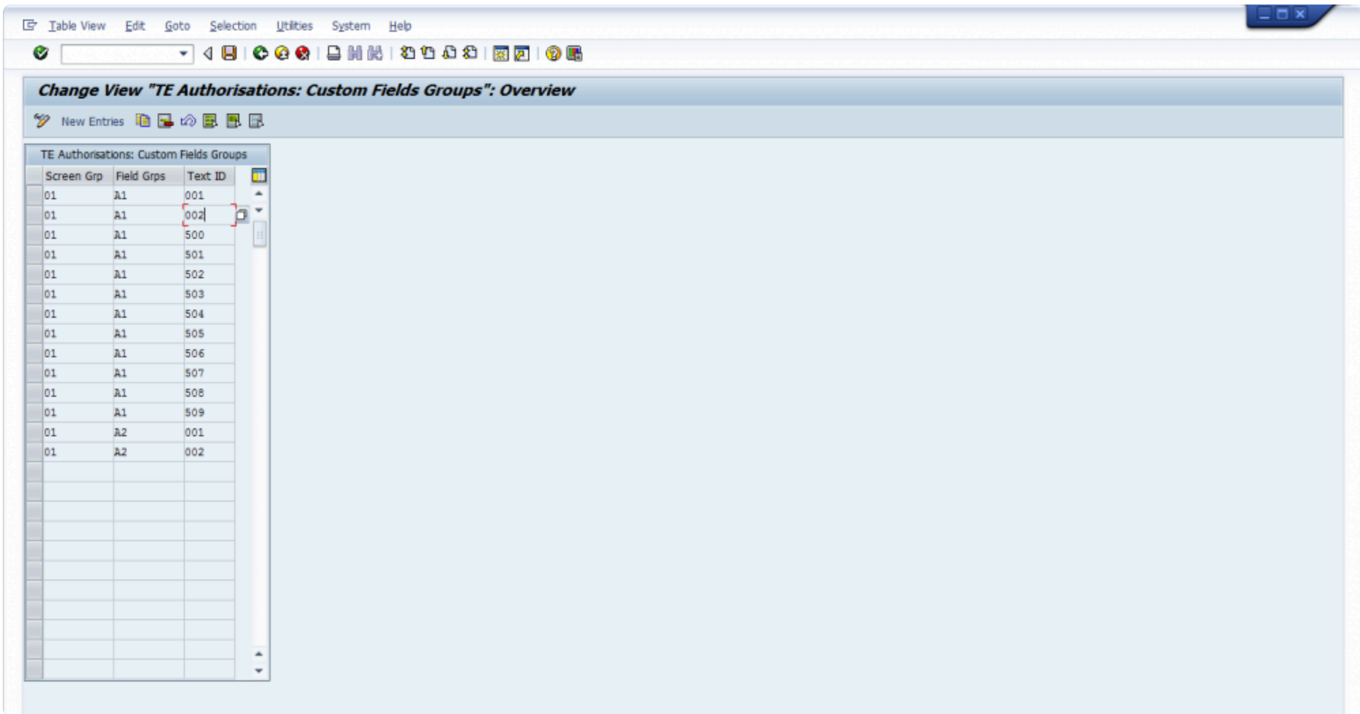
L	Screen Grp	+
EN	1	Screen Number 1 - Text
EN	3	Screen Number 3 - Text
EN	S01	Screen Group 1
EN	S02	Screen Group 2
EN	S03	Screen Group 3

Step 8: Assign standard fields to field / screen groups
Table: /BTI/TE_STNDFDEF
• Note: The fields referred to in this table (Text ID column) are defined in table /BTI/TE_STNDF. The fields can be grouped together into sections, for example, to create a set of display only fields. E.g. Screen group S01 / Field Group S5 could be created and assigned with a group of fields to be made display only.



Screen Grp	Field Grps	Text ID
S01	S1	100
S01	S1	102
S01	S1	104
S01	S1	106
S01	S1	108
S01	S2	200
S01	S2	202
S01	S2	206
S01	S2	208
S01	S2	210
S01	S2	212
S01	S2	214
S01	S2	216
S01	S2	218
S01	S3	100
S01	S3	102
S01	S3	104
S01	S3	106
S01	S3	108
S01	S4	200
S01	S4	202
S01	S4	206
S01	S4	208
S01	S4	210
S01	S4	212

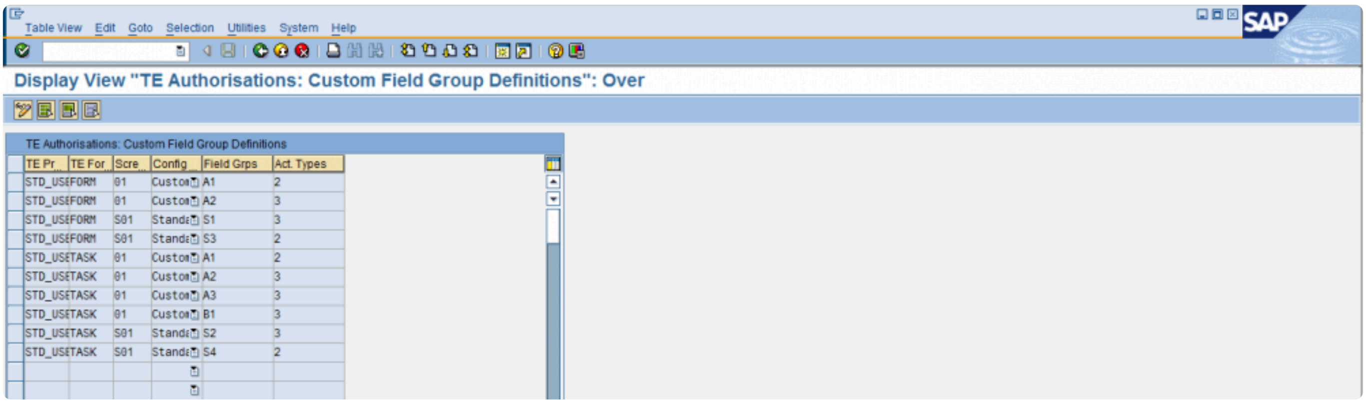
Step 9: Assign custom fields to field / screen groups
Table: /BTI/TE_CUSTFDEF
• Note: To make a custom field editable there needs to be an entry in this table for it. The custom fields are defined in table /BTI/TE_CUSTF. The fields can be grouped together into sections, for example, to create a set of display only fields. E.g. Screen group 01 / Field Group A3 could be created and assigned with a group of custom fields to be made display only.



Step 10: Assign field / screen group to a form type (i.e. Task or Transport Form object) TE profile

• Note: This only needs to be configured if certain standard or custom fields are to be made display only. Activity type 2 = Change and 3 = Display only. Entries need to be added for each combination of screen group and field group to be controlled for Tasks and Transport Forms.

Table: /BTI/TE_CUSTGRD



5.11.8. Forced Password re-entry

It is possible to enforce a password re-entry during approval within Transport Expresso to ensure that the approvals process meets certain regulatory compliance such as FDA.

This is switched on/off via PASSWORD_APPROVE flag in backend table **/BTI/TE_CONFIG**.

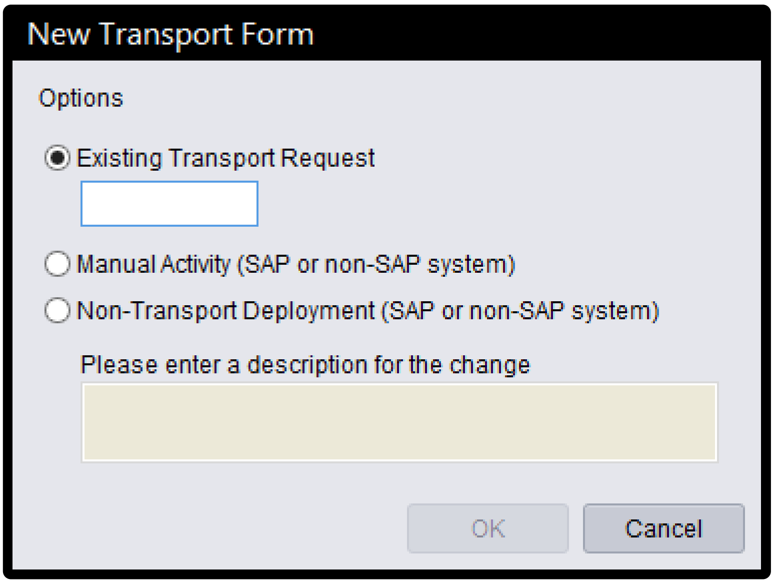
When switched on, every approval will requires a password confirmation

5.12. Manual Activities and Non-Transport Deployments

It is possible to manage manual activities and non-SAP changes within Transport Expresso.

This can be used to manage non-Transportable changes and activities and still enforce an approval and audit process. These types of changes will still use the concept of transports and paths and so will follow the existing process and logic in Transport Expresso. They can either be sent down an existing SAP path or a new path created specifically for each non-SAP system.

When a transport form is created there are 3 options:



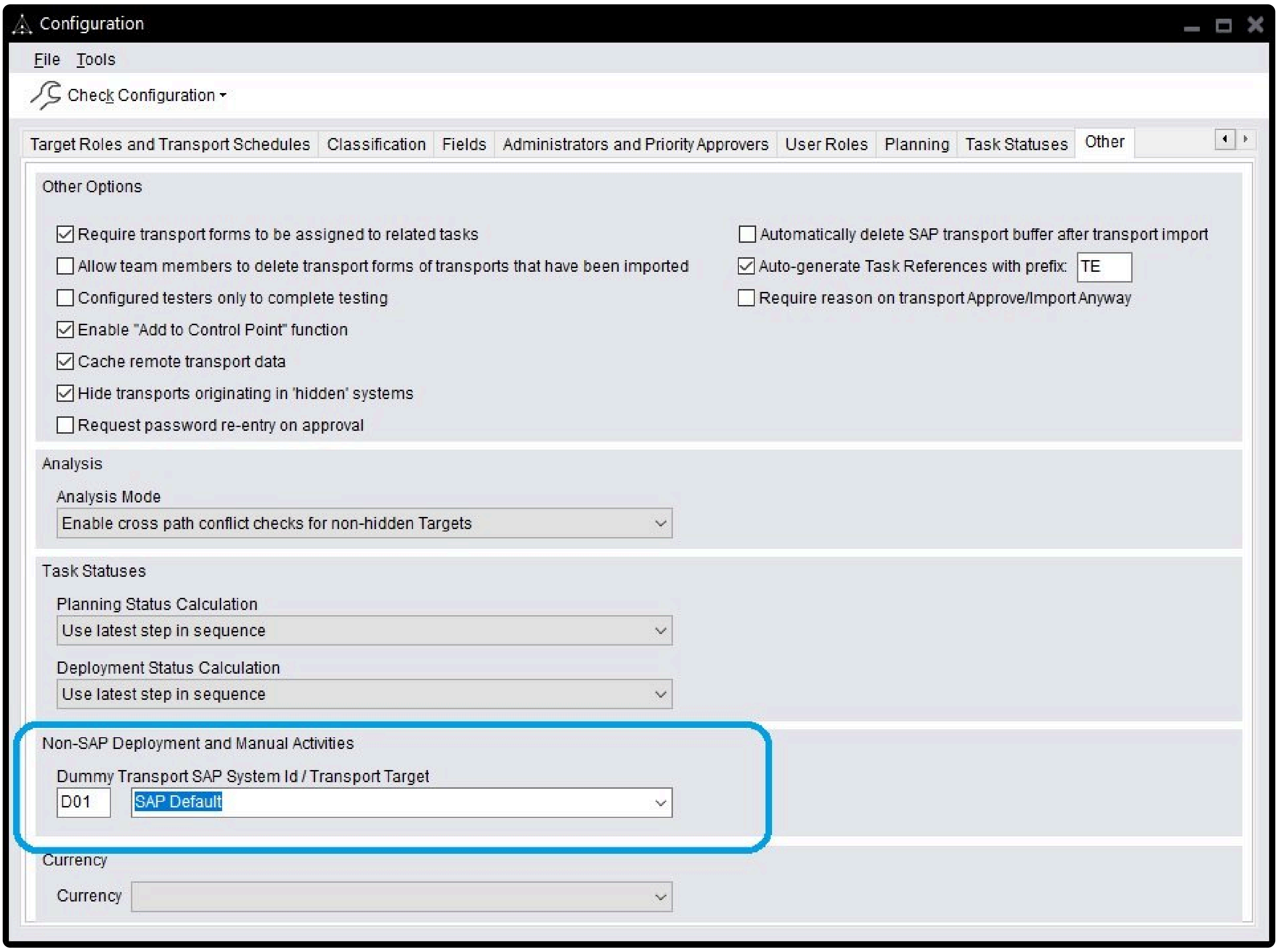
1. Existing Transport Request
2. Manual Activity (SAP or non-SAP system) – For example, creation of a SAP number range or RFC destination or for non-SAP systems, this could be the installation of a printer or any other manual action
3. Non-Transport Deployment (SAP or non-SAP system) – For example, this could be used to deploy an script or executable to any system

For the Manual Activity and Non-Transport Deployment types a description will need to be entered and a dummy SAP transport will be created. This transport is just a holder for the change to allow it to be sent down any transport path which can either be an existing SAP systems path or a path that’s created for non-SAP systems as well.

Manual Activity type changes automatically create a manual step in the transport form. This can be updated to choose the systems the activity is relevant for and then be marked as complete for each system rather than performing an import. Once completed the import queue will be automatically skipped for the relevant system.

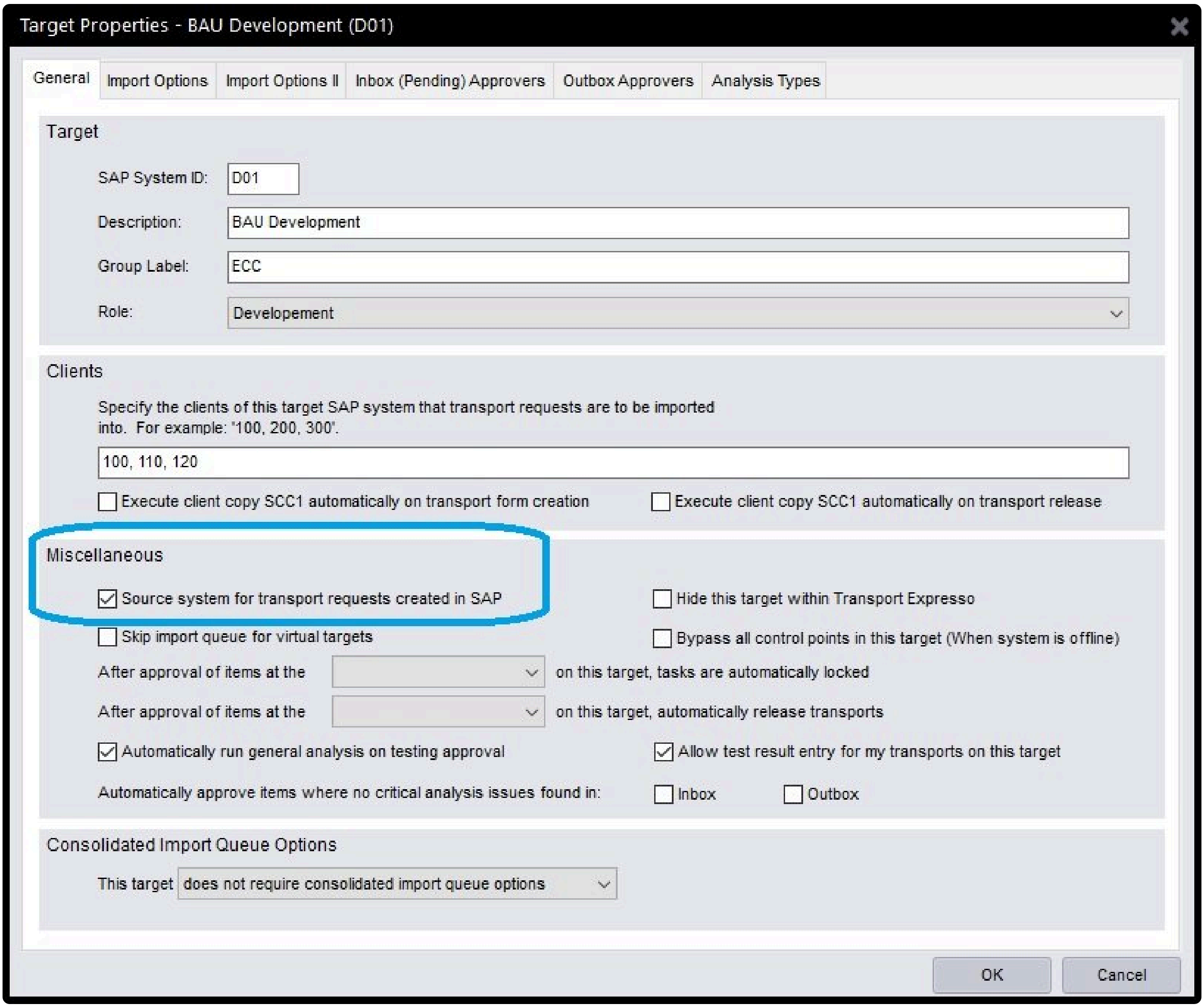
Non-Transport Deployment type changes are handled in the same way as normal SAP transports but instead of a transport import a custom import method can be called via a user exit to perform the deployment. The required deployment can be attached to the transport form and used by the deployment method to execute the change.

In order to support these new change types a dummy transport will be created in a nominated SAP system. It is recommended to use the TE domain controller system for this but not essential. A SAP transport target can also be specified if required but using “SAP Default” will allow SAP to determine this automatically.



The transports do not need to be released as there will be no import process for them so if required they could be deleted afterwards as part of a clean-up.

In addition, in order for the Transport Expresso caching to function correctly the SAP system configured here also needs to be created as a TE target system and marked as a source system for transports. (This doesn’t need to be added to any transport paths):



5.13. Back-out

Sometimes, despite best intentions, unwanted or adverse changes might be applied and you need a way to quickly and safely restore the affected SAP system to its pre-import state. Transport Expresso **Backout** supports this requirement through the creation of backup requests.

A backup request is a special transport request that Transport Expresso can be configured to create in each client of the target SAP system before a selection of transport requests is imported. The purpose of a backup request is to export (and thereby save) an image of the content that is about to be changed by the import process. Each attempt to import a selection of transport requests is logged and is referred to as an import run.

Transport Expresso associates each backup request with its corresponding import run. If necessary, it is possible for an administrator to back out the changes applied by an import run by clicking on the Backout

Import Run toolbar button in the History pane when displaying the target SAP system’s import queue. When this is done, Transport Expresso restores the pre-import state of the SAP system by simply importing the backup request back into the SAP client from which it was exported. If the target SAP system is configured with multiple clients, then the backup request created for each client is imported into each of the corresponding clients.

Creating backup requests slows the import process and so Transport Expresso will only create backup requests for a target SAP system if the import option “Automatically create backup transport requests” is enabled. In addition, the following technical requirements must be observed:

1. A virtual system called **BAK** must be defined in TMS. This virtual system is necessary because backup requests are transport requests of type “transport of copies” and the virtual system BAK is specified as the target system in the transport request header (as displayed in transaction SE10).
2. The logon details specified on the target system’s RFC destination (see RFC Destinations) must be valid for each client specified in the target’s properties. This is required so that Transport Expresso can log into the correct client when creating and applying backup requests, so that client dependent content can be correctly backed up and restored.

1. If using Transport Backout, you also need to set the STMS parameter ‘tardeletions’ = “True” in each of the systems where Backout transports will be created.

1. Import runs must be backed out in reverse chronological order in order to guarantee the integrity of the SAP system. Of course, changes can only be backed out if backup requests were created when the import run was applied.

Note: TE Backout is only intended for use on ECC/ERP SAP systems. It will not work fully on BW or Java type systems.

5.14. Adding External Transports to TE

External third party transports can be uploaded into Transport Expresso via the TE Windows GUI and also the SAP GUI.

This can be done by any user, and is not a Administrator function.

There is no pre-requisite activity required in terms of creating RFCs or TE Targets to upload external transports into Transport Expresso

Adding External Transports in the TE Windows GUI

External Transports are added in the Windows GUI via the **External Transport Request** option on the [New Transport Form] screen.

From this screen, the cofile and data file for the external transport is uploaded to either the TE Domain Controller or a specific local development system.

When you first add an external transport, an entry is created to link the SAP transport prefix (SID) to the Domain Controller or the local Development system that you selected. From that point onwards, the system that you chose will always be where external transports of that SID are uploaded. (this information is stored in /BTI/TE_TARG_EXT table in the Domain Controller)

A TE Transport Form can then be populated for the transport, and moved through the approvals workflow in the usual manner.

Adding External Transports in the SAP GUI

For any TE users that prefer to upload external transports via the SAP GUI instead of the TE WIndows GUI, this can be done using program **/BTI/TE_RUPLOAD_TR_REQUEST** in the TE Domain Controller.

5.15. Transport of Copies

Transport Expresso includes the ability to enable authorised users to create Transport of Copies (TOC) of existing transport(s) to enable customers to push TOCs into their test systems.

To enable the TOC functionality within Transport Expresso requires the following configuration:

1. Add entry to table /BTI/TE_TOCONFIG

Use SAP transaction SE16 within TE table **/BTI/TE_TOCONFIG** – add a configuration entry depending on your requirements.

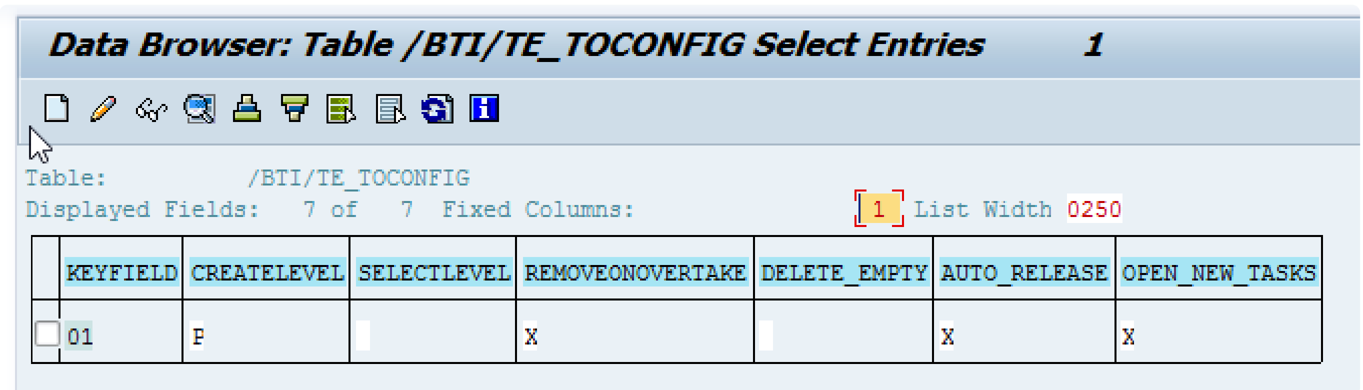

Data Browser: Table /BTI/TE_TOCONFIG Select Entries 1

Table: /BTI/TE_TOCONFIG
Displayed Fields: 7 of 7 Fixed Columns: 1 List Width 0250

KEYFIELD	CREATELEVEL	SELECTLEVEL	REMOVEONOVERTAKE	DELETE_EMPTY	AUTO_RELEASE	OPEN_NEW_TASKS
01	P		X		X	X

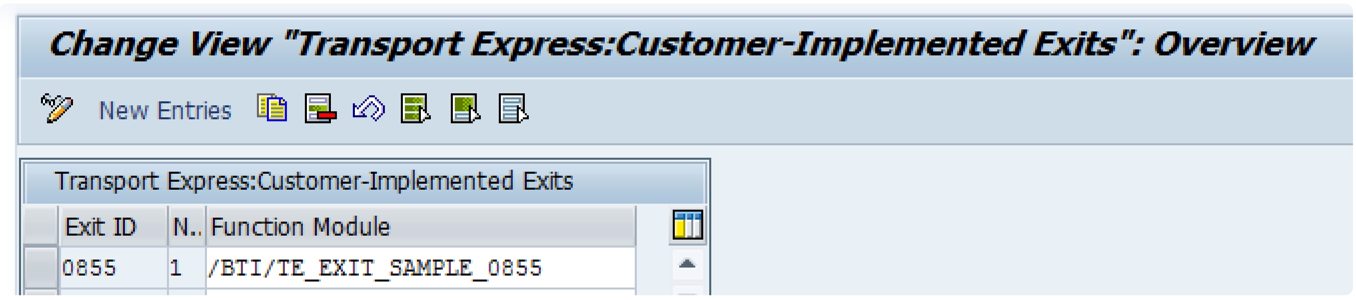
The configuration flags are as follows:

- *CREATELEVEL* allows you to dictate at what level the TOCs are created at. E.g. if you have two Transport Forms that are part of two different Projects, configuring CREATELEVEL = P will result in two seperate TOCs being created.

- *SELECTLEVEL*
- *REMOVEONOVERTAKE*
- *DELETE_EMPTY* will remove any SAP Tasks which contain no objects.
- *AUTO_RELEASE* will automatically release any unreleased SAP Tasks that are included in the Transport(s) that you are creating a TOC for.
- *OPEN_NEW_TASKS* will automatically create new SAP Tasks assigned to the same consultant as those included in the Transport(s) that you are creating a TOC for.

2. (optional) Add User Exit 0855

Use SAP transaction SE16 within TE table **/BTI/TE_EXITC** – add an entry for user exit 0855



Note this is an optional step that will auto-create/populate Transport Form for your TOC. Without the user exit switched on, the TOC will be created, but no Transport Form created for it.

5.15.1. TOC object splitting

When using the Transport Expresso 'Transport of Copies' functionality, it is possible to split out the original transport into several seperate TOCs based on the objects contained within the original transport.

This is a two-step configuration process:

1. Create **Groups** for each of the TOCs that you want to create by populating table **/BTI/TE_TOCOBGRP**

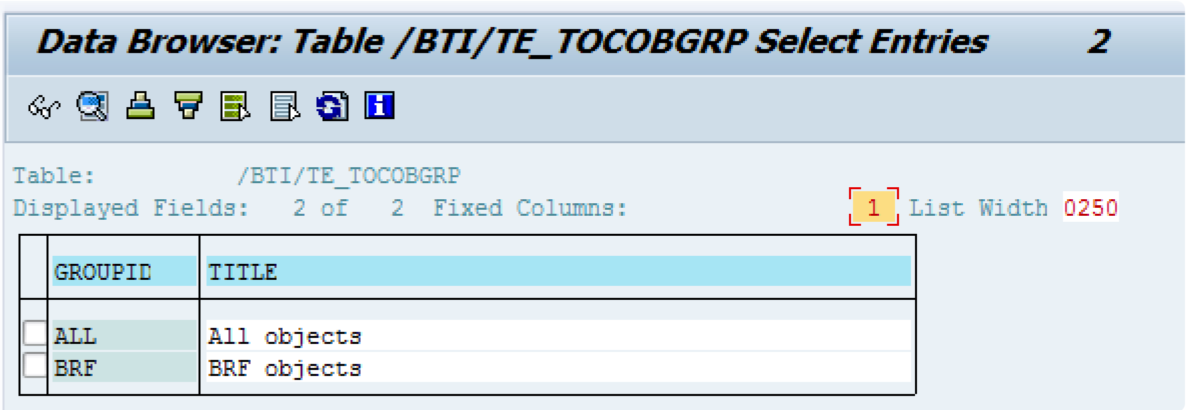

Data Browser: Table /BTI/TE_TOCOBGRP Select Entries 2

Table: /BTI/TE_TOCOBGRP
Displayed Fields: 2 of 2 Fixed Columns: 1 List Width 0250

GROUPID	TITLE
ALL	All objects
BRF	BRF objects

(in above screenshot, we intend to split out each transport into two TOCs, one for BRF objects, and one for everything else)

2. Allocate what objects you want to allocate to each groups by populating table **/BTI/TE_TOCOBJ**

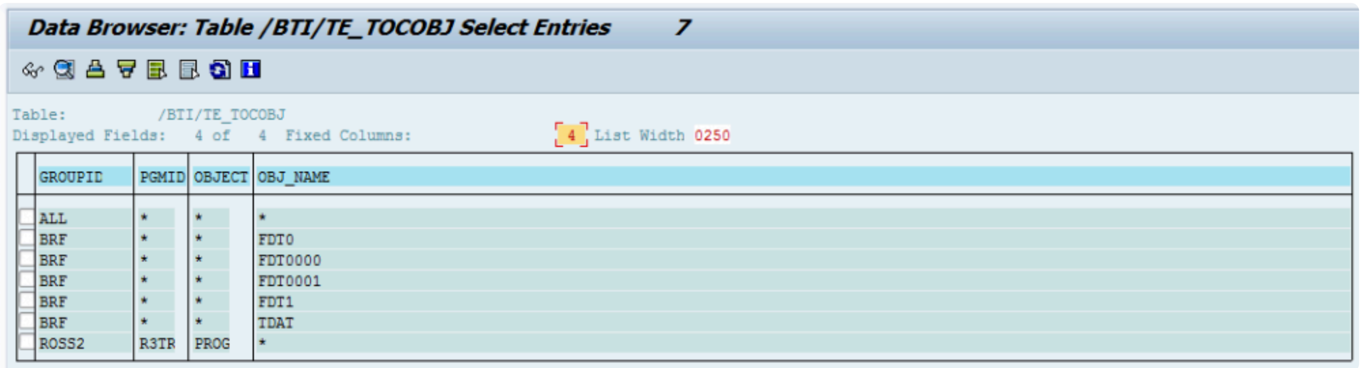

Data Browser: Table /BTI/TE_TOCOBJ Select Entries 7

Table: /BTI/TE_TOCOBJ
Displayed Fields: 4 of 4 Fixed Columns: 4 List Width 0250

GROUPID	PGMID	OBJECT	OBJ_NAME
ALL	*	*	*
BRF	*	*	FDT0
BRF	*	*	FDT0000
BRF	*	*	FDT0001
BRF	*	*	FDT1
BRF	*	*	TDAT
ROSS2	R3TR	PROG	*

(in above screenshot, we intend to create one TOC for the various BRF related objects, and one for everything else)

Note that wildcard * can be used.

5.16. Client-based Transport distribution

Some SAP customers have a SAP client architecture requirement to distribute transports to particular system clients in the landscape, based on rules and the source client of the transport.

Although this is not a common scenario, it is possible to do it within Transport Expresso using configuration.

Configuring transport distribution rules

1) Populate table **/BTI/TE_IMP_CLI** in the TE Domain Controller with your required transport distribution rules

PATH: the TE path for which the rule is being defined
SOURCE SYSTE: the source system (SID)
SOURCE CLIENT: the source system client
TARGET: the target system in the path where the transport has/not to be imported into particular client
SORT ORDER: used for sorting the clients in a particular target
TARG CLIENT: The client of the target system
SKIP: An X should be entered in this field for the rules where you want the transport to not be imported into the defined client defined in the rest of the rule

2) Switch on TE_EXIT_SAMPLE_0065 in /BTI/TE_EXITC table in the TE Domain Controller.

Notes:
i) the import queue is not skipped, it is during the import that the skipping occurs based on the rules defined
in the configuration table
ii) the clients will be sorted based on SORTORDER
iii) if a client is not defined in the configuration it will be ignored
iiii) if no entries are found for a transport it will be imported in all the clients defined in the config
iv) the transports can still be imported using both single one-by-one or block import.

5.17. Consolidated Import Queues

If you have the same SAP systems configured on more than one path in Transport Expresso (e.g. to separate BAU and project changes into different paths through the same SAP systems), it is possible to set up a Consolidated Import Queue (CIQ).

This gives a complete view of all transports waiting to be imported into that system and can be useful during cutovers and for system refreshes.

Even if a target is part of a CIQ, transports can still be imported using the individual Target Import Queues, as well as using the consolidated queue. A CIQ can be made up of any number of targets, all of which must point to the same physical system. Configuration can be used to show the CIQ within the respective paths or be shown as a separate entity in the path window of the GUI.

An example of when you may want to use a CIQ is if you configure Transport Expresso to have two paths using the same systems, one for Production Support / BAU and one for Minor Projects. In Transport Expresso the paths could look something like this:

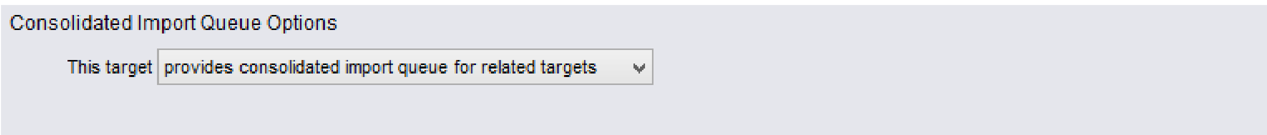
Production Support / BAU:	D01 -> T01 -> PRD -> TRN
Projects:	D01 -> T01 -> PRD -> TRN

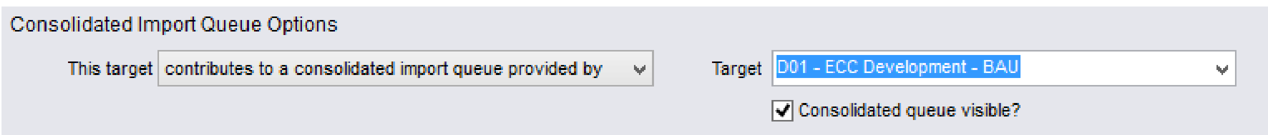
If you want to see all of the transports waiting to be imported into PRD, you could look at the Import Queues of each of the PRD Targets in each path, but you could also configure a CIQ that will show you the transports waiting to be imported into PRD in both paths.

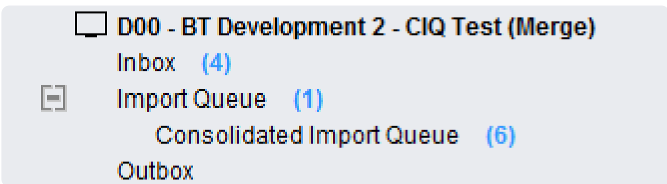
- Note: It is important to remember that when importing using a CIQ, all import options are taken from the CIQ Target configuration and NOT the individual Targets that make up the CIQ. For example, if the individual Targets are set up to create backup / merge transports, but the CIQ Target is not configured to do so, when importing using the CIQ a backup / merge transport will not be created, whereas if you import transports using the individual Import Queues, then backup / merge transports would be created.
- To be able to see Consolidated Import Queues within the GUI, users must have the VIEWCONIMPORTQUEUE activity in the TE_USER authorisation object. This is delivered in the TE Basis and Admin roles.

5.17.1. Configuring a CIQ

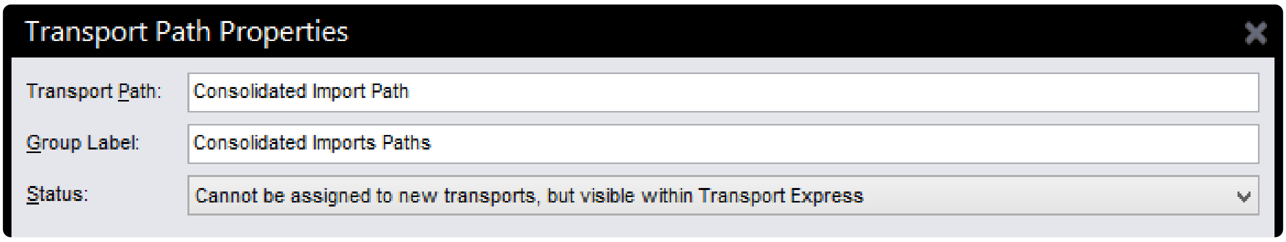
To configure a Consolidate Import Queue:

1. Create a Target in Transport Expresso for the SAP system that you wish to show a consolidated view for. This Target cannot have any control points configured. To act as a CIQ, this Target must have the configuration option below set:


2. Configure the Import Options for the CIQ target.
3. In each of the individual Targets that make up this CIQ, the configuration options below must be entered. I.e. you need to point each individual target for the SAP system to the relevant CIQ target:


4. If you want the CIQ to be displayed within the individual paths, select the consolidated queue visible check box. When looking at the path in the GUI, you will see the CIQ as a child object to the individual Import Queue.


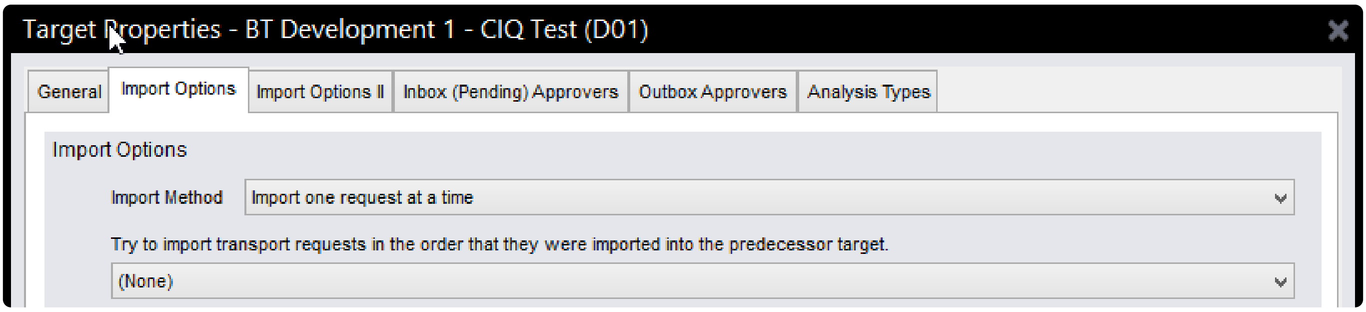
5. If you want to display the CIQ as part of a path (i.e. separately and not visible within the individual paths), create a path as normal, but set the path status to:



This will allow you to show this and any other CIQ's as separate entities in the GUI Path/Target view but not allow transport forms to be created for them as these should still use the individual paths:

Once a CIQ has been configured in Transport Expresso, it will automatically show all transports waiting in the Import Queue of each related individual Target. In the screen shot above, the T01 CIQ has been configured to show all the transports in both the 'BT QA Test' T01 Target and the 'BT Project Test' T01 Target. It shows that there are 16 transports and 2 transports waiting in each of the respective Import Queues. Therefore the CIQ is showing 18 transports. The order in which Transport Expresso imports the transports in a CIQ is dependent on the Import Options configuration of the CIQ Target.

To import the transports in release order, the import options for the CIQ Target and all the related Targets must have the same configuration:



To import the transports in the same order as a previous system, the CIQ Target should have something selected for the configuration option above. It does not matter which Target is selected here, as the actual 'previous system' that Transport Expresso will check is the one configured in each individual Target that makes up the CIQ.

5.18. Unit Test Automation

Unit Test Automation hooks into standard SAP functionality available within SAP Code Inspector, but can be used in Transport Expresso to

1) run automatically as a ShiftLeft Analyser at the configured TE Control Point(s) – ensuring that Approvers have full visibility non-adherant transports. This is detailed earlier in the Admin Guide.

2) run automatically at the point of transport release – ensuring that Developers get visibility of issues

Configurating Unit Test Automation for transport release

The unit test automation can also be performed automatically on transport release. This is switched on in table /BTI/TE_ACTIVE by adding the *Unit test on release* active function.

The SAP Code Inspector variant and user parameter also needs to be configured in the TE Domain Controller in backend table **/BTI/TE_ACTPARMS**.

If this is switched on then, any unit test automations will be run and failures reported to the user in both the SAP GUI and in the Windows GUI when a transport is released.

5.19. Integration

ActiveControl offers a variety of ways to integrate inbound and outbound scenarios using documented API's. ActiveControl provides an Integration Framework that can 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.

In addition, as ActiveControl is a Netweaver certified product, all standard SAP integration techniques are available, including tRFC and IDoc communication. But for the purposes of this document, it is assumed that web services will be the preferred integration method and these are therefore described in detail in this document.

ActiveControl integrations have already been setup with existing Basis Technologies' customers on the following tools:

- BMC Remedy
- ServiceNow
- Solution Manager
- JIRA
- Cherwell
- Footprints

5.19.1. JIRA Integration

ActiveControl 7.00 includes JIRA integration capability, this includes inbound, outbound and error logging.

Note that this functionality does still require some configuration to map Transport Espresso to your installation of JIRA. This activity falls outside of the scope of a standard TE implementation or upgrade, and is a chargeable activity which will require Basis Technologies technical resource working with a customer JIRA technical resource to setup the required integration, field mapping of standard and custom fields etc.

5.19.2. Cherwell Integration

ActiveControl 7.00 includes Cherwell integration capability.

Note that this functionality does still require some configuration to map Transport Expresso to your installation of Cherwell.
This activity falls outside of the scope of a standard TE implementation or upgrade, and is a chargeable activity which will require Basis Technologies technical resource working with a customer Cherwell technical resource to setup the required integration, field mapping of standard and custom fields etc.

5.19.3. Footprints Integration

ActiveControl 7.00 includes Footprints integration capability.

Note that this functionality does still require some configuration to map Transport Expresso to your installation of Footprints . This activity falls outside of the scope of a standard TE implementation or upgrade, and is a chargeable activity which will require Basis Technologies technical resource working with a customer Footprints technical resource to setup the required integration, field mapping of standard and custom fields etc.

5.19.4. Integration Scenarios

The standard integration scenario is to combine ActiveControl and a third party IT Service Management product, and possibly a Test Automation product to create a fully integrated end-to-end process for managing change.

This typically requires both inbound and outbound integration:

1. Change created in third party ITSM system

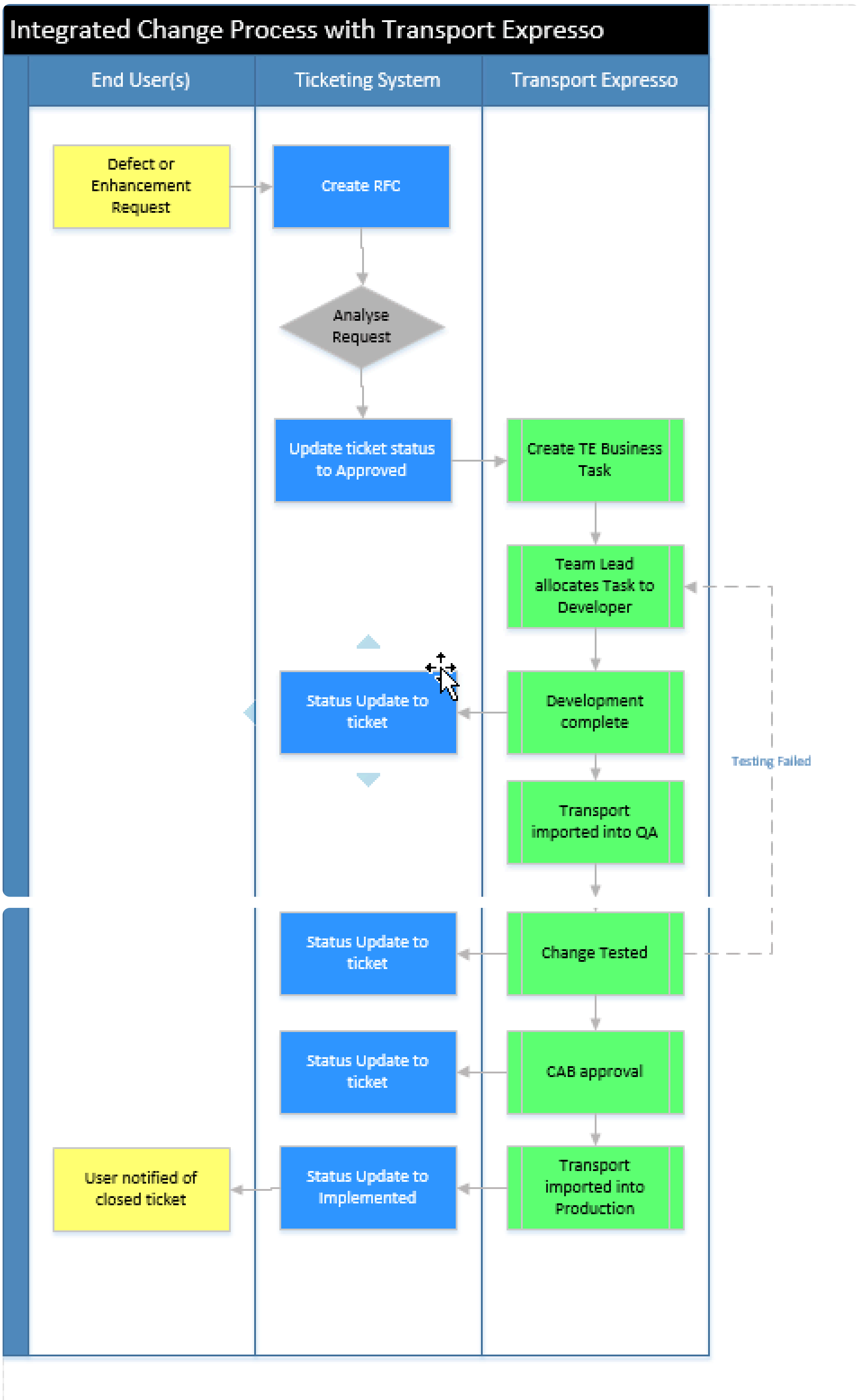
2. Change approved for development in ITSM system
3. Change interfaced to ActiveControl / TE (inbound integration)
4. Change managed through ActiveControl / TE for deployment to Test and Pre-Prod with updates sent to ITSM system to reflect progress (outbound integration)
5. Change deployed to production through ActiveControl / TE and ITSM system updated (outbound integration)
6. Change verified and closed in ITSM system

Note: This section of the Administration Guide will describe in detail how such integration can be easily accomplished using the ActiveControl Integration framework, but it should be noted that the framework can be extended for use in many other integration scenarios.

5.19.5. Integration Process Flow

The Integration Framework provides an open architecture for passing messages into and out of the system in a multitude of ways.

Although integration can be set up in many ways, one of the more common scenarios is explained in detail below:



In this scenario we have bi-directional integration between an external ticketing system and transport express. This gives a direct link between the ticketing system and the underlying technical changes that make up the business change. So, whether looked at from the perspective of the ticketing system, or through ActiveControl, there is only one version of the 'truth' for all changes across the landscape.

From a more detailed perspective, we can look at the integration scenarios:

1. Once a proposed enhancement or defect resolution is approved and a system change is deemed necessary, the external system creates a Business Task in TE representing the change. The ticket in the ITSM system and the TE Business Task are then tied together for the remainder of the process
2. The creation of the Business task in TE marks the start of the development process. The Task can be allocated to a developer who then performs the development and/configuration, and completes unit testing.
3. Once the developer has finished their work, they release the technical change (the transport) and the development team lead is notified by Transport Expresso and approves the change. TE will automatically run a number of configured analysis checks at this point to ensure the change is ok to move on in the process.
4. The change is imported into the Quality Assurance system (maybe after another approval from the Testing manager) and is now ready for testing.
5. TE updates the status of the ticket in the ITSM system to show that it is now in testing or ready to be tested.
6. Test collateral and results can be added to either the ticketing system or TE and the ITSM system automatically updated.
7. CAB approval is sought and TE analysis is completed in real time to report dependencies between changes and the impact of different approval scenarios.
8. Once approved by CAB the status of the change in the ticketing system is updated and the change is imported into the Production system at the appropriate time
9. The ticketing system is updated to show the change has been implemented.

5.19.5.1. Inbound Integration Process

There are two inbound calls in the above scenario:

1. Creation of the Business Task in TE
2. Approval of Testing/Entry of test results once testing complete

Both of these calls would be web service calls to standard TE APIs (although alternative techniques are available and are described later in this document). The calling system (i.e. the ticketing system) would be responsible for queuing of messages and ensuring errors were dealt with appropriately. Some mapping may be required depending on the data passed from the ticketing system to TE for classification of the change.

5.19.5.2. Outbound Integration Process

The outbound calls from Transport Expresso to the external ticketing system can all be based on the

Deployment Status of a change within TE. Integration scenarios based on TE status changes are delivered as standard with the TE Integration Engine and therefore require no development.

The steps to set up this type of status based integration are:

1. Complete base TE Integration engine configuration. This includes identifying the end points of the integration and any mapping requirements. The mapping engine can be configured for most standard scenarios, but if complex mapping is required, Transport Expresso user exits can be implemented to enhance the standard mapping routines. For more details on TE user exits and how they are implemented, please refer to later section of this Administration Guide.

2. A trigger program should be scheduled to pick up the Task status changes that need to be interfaced to the external system(s). This trigger program selects the appropriate TE records, dependent on the configuration set up above, and passes it through the mapping engine. It then stores the mapped integration transactions into a set of standard tables.

Program Name: **/BTI/TE_INTEG_TRIGGER**

Selection Option	Description
External System The system external system the trigger program is to be run against	
Task ID	Task(s) the trigger program will be run against
Task Type	Task Type(s) the trigger program will be run against
Task Reference	Task Reference the trigger program will be fun against
Task Priority	Task Priority the trigger program will be run against
Send previous changes	Select this checkbox if Task status changes is ‘backwards’ in the process and this change should be sent to the external system
Run as though Last Run on	The date and time of the ‘last’ run can be entered manually if this flag is checked
Run Date	The date of the last run (if manually entered)
Run Time	The time of the last run (if manually entered)

3. A send program is then scheduled to pick up the mapped transactions and send them out to the configured external systems. It retrieves the required records and then uses the configured send methods for each particular integration scenario to actually push the data out to the receiving systems. If a standard send method is not available for a particular external system (maybe the ticketing system is a ‘home-grown’ application), then custom send methods can be created and utilised in the Integration Framework.

Program Name: **/BTI/TE_INTEG_SEND**

Selection Option	Description
External System	The system external system the send program is to be run against
No. of Retries	The number of times the send program will try to send an integration transaction before issuing an error
Transaction Number	Specific integration transactions for the send program to process
Supress Notifications	Makes sure that no notification emails are sent when the transactions are processed

4. The outcome of the send process is recorded for audit purposes. If successful, any updates configured are made to the TE data objects, alternatively if errors have occurred, the send program will try to re-send (if configured to do so) a certain number of times before marking the transaction in error and sending a notification to the relevant person(s) within the organisation.

5. At any time, the Integration Reporting Console can be used to see the status of all integrations, the status and history of each transaction and can also be used to update the underlying transactional data, if required, to fix errors.

Program Name: **/BTI/TE_RINTEG_AUDIT**

Selection Option	Description
Date	Date range for the report
Time	Time range for the report
All transactions/ Transactions in error	Select if all transactions should be displayed or just transactions in error
External System	Show only transactions for a specific external system
Transactions	Show only specific transaction numbers
Field Name	The external system field name
Field Value	The value in the external field

5.19.6. Outbound Integration

This section guides you through the steps that are needed to configure outbound integration within ActiveControl.

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

5.19.6.1. Integration – Configuration Overview

The table below shows a list of database tables with descriptions that need to be maintained followed by a more in depth description of how to configure the tables.

Name	Description
/BTI/TE_INT_CLAS	Integration Object Class List
/BTI/TE_INT_PC	Process Codes
/BTI/TE_INT_PROC	Process Identifier
/BTI/TE_INT_CONV	Conversions
/BTI/TE_INT_USR	Notification Users
/BTI/TE_INT_MAPP	Mapping Table
/BTI/TE_INT_FLDE	Complex Mapping (user exits)
/BTI/TE_INT_SYST	Integration System List Table

5.19.6.1.1. Detailed Configuration Table Information

5.19.6.1.1.1. External System(s)

The integration framework can be used to perform outbound integration on potentially any external system.

Two tables need to be maintained here, table '/BTI/TE_INT_SYST' is the table that holds all the external system id's and descriptions along with any RFC Destinations that may possibly be needed for example for a Solution Manager system, also table **/BTI/TE_INT_CLAS** needs to be maintained and this holds the class that the framework references.

/BTI/TE_INT_SYST – TE Integration System List

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want.

	An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
EXTSYS_ID	Single word identifier for external system. E.g. REMEDY
EXTSYS_NAME	Full description of external system
RFC_DEST	Some external systems that you want systems with could possibly be SAP systems for example Solution Manager so the RFC destination is held here.

/BTI/TE_INT_CLAS – Integration Object Class List

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want. An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
CLASSNAME	Held here is the class name where the bulk of the integration processing is done. Integration works on the principle of having a class for each external system that we need to integrate with. This is what is called in the integration send program. E.g. /BTI/TE_CL_INTEGRATION_SOLMAN.

5.19.6.1.1.2. Update Processes

Currently the integration framework is capable of updating external records in two ways in either ‘Create’ mode or ‘Update’ mode, these ‘modes’ are known within the integration framework as process codes and to try and ensure forwards compatibility these have been made configurable but would obviously require code changes if any other process codes were to become available. These process codes are held in table ‘/BTI/TE_INT_PC’. These two process codes would need to be shipped for standard functionality.

/BTI/TE_INT_PC – Process Codes

Field	**Description**
PROCESS_CODE	The process codes used by the integration framework to perform some kind of action. The framework gets shipped with two standard process codes CREATE and UPDATE.
CODE_DESCRIPTION	Description of above code.

5.19.6.1.1.3. Integration Points

The standard out of the box ActiveControl integration framework integrates at task level with third party software using task status changes as integration points.

A process code will need to be attached to a task deployment or planning status which subsequently needs to be attached to a control point within Transport Expresso. Assuming deployment/planning statuses have already been attached to control points within the path, we need to:

To link the process code with a deployment/planning status table **/BTI/TE_INT_PROC** needs to be maintained here the status and process code is attached to the external system that is being integrated with.

/BTI/TE_INT_PROC – Process Identifiers (per system)

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want. An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
EXTSYS_NAME	Full description of external system
IDENTIFIER	This identifier is the crux of the integration framework and denotes a point of integration, more than likely this would be some kind of internal id, in our OOTB example it is a task status. This point of integration is attached to a process code denoted above and this is what would cause an integration to be performed when this identifier is reached.
PROCESS_CODE	The process codes used by the integration framework to perform some kind of action. The framework gets shipped with two standard process codes CREATE and UPDATE.
IGNORE_CHANGES	This flag is set when you wish to ignore previous changes in case the integrated object has skipped through more than one integration point since the integration trigger program was last run.

5.19.6.1.1.4. Conversions

The integration framework can also take into account value conversions.

For instance where a value in TE could equal one thing maybe its corresponding value in an external could be different although they both mean the same thing. For example:

A TE priority maybe ‘1’ for ‘Low’ however, the same ‘Low’ priority in a Remedy system for example could be ‘4’.

The table **/BTI/TE_INT_CONV** can be used to map the two values together and address these issues.

/BTI/TE_INT_CONV – TE Integration Conversion Table

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want. An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
EXTSYS_NAME	Full description of external system
EXTERNAL_REF	This is the field name of the external field that is on the system to be integrated with.
EXTFLD_ID	This is the TE field value that the conversion needs to take place on.
EXTFLD_VAL	This is the converted value that needs to be fed into the integrated system.

For example in our OOTB box example we are performing Solution Manager Integrations only on certain types of task and these types of tasks are set up in solution manager as Support Notification ticket types.

5.19.6.1.1.5. Notification Users

It is also possible to set up ‘Notification Users’ per external system that can be notified when an integration message has gone into an error status. This is run through the Email Notification Engine and the table that needs to be maintained is **/BTI/TE_INT_USR**

/BTI/TE_INT_USR – Notification Engine Users (per system)

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want. An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
EXTSYS_NAME	Full description of external system
USERID	SAP Logon ID of person that needs to be notified of failed integrations.

5.19.6.1.1.6. Mapping

An essential part of the integration framework is mapping Transport Expresso fields to the equivalent fields on any external system.

This is achieved using the table **/BTI/TE_INT_MAPP**. Ideally, this process will need to be undertaken before the framework can be used. For general fields the TE field should be entered complete with table name into field TEFIELDREF and the external fieldname must be entered in the EXTERNAL_REF field.

There is also the functionality to be able to reference any TE Custom fields the custom field ID's would need to be added to TECUSTFIELD_REF, also multiple line itemed fields are able to be handled here such as text fields. Finally, on the mapping table there is a KEY_FIELD field this is used to hold the external system record key in general use a specific non display custom field on the task would be created for this purpose.

/BTI/TE_INT_MAPP – Integration Mapping

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want. An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
EXTSYS_NAME	Full description of external system
TEFIELDREF	This is the TE Field that needs to be mapped to a field on the external system. This table name is required in the field as well. I.e. /BTI/TE_TASK-PRIORITY
EXTERNAL_REF	This is the fieldname that the frameworks calling web service needs to reference to map across the data.
KEY_FIELD	This field is the link between the TE record, in our task record we have set up a custom field which is hidden from view and in here we store the ID of the created record on the integrated system.
TECUSTFLD_REF	ID of TE Custom field to be mapped.
DEFAULT_VAL	Defaulted Value to be mapped over to the integrated system field.

5.19.6.1.1.6.1. Complex Mapping

For complex mapping scenarios, a specific function module can be created on the ActiveControl domain controller to perform whatever mapping or transformation that may be required.

/BTI/TE_INT_FLDE – Mapping User Exits

Field	Description
EXTSYS_NO	Main external system identifier, this is the identifier of the system that you wish to integrate with we can have as many systems as we want. An example of this could be: 1 – Remedy 2 – Solution Manager 3 – Service Desk
EXITFIELDNAME	External field that this refers to
EXITFUNCNAME	The function module to be executed to perform this exit

5.19.7. Inbound Integration

For inbound integration scenarios ActiveControl provides several SOAP web services; currently, these are:

- Create a Business Task
- Change a Business Task
- Read a Business Task
- Analyse a Business Task
- Read the results of an analysis for a Business Task
- Approve a Business Task
- Enter Test Results for a Business Task

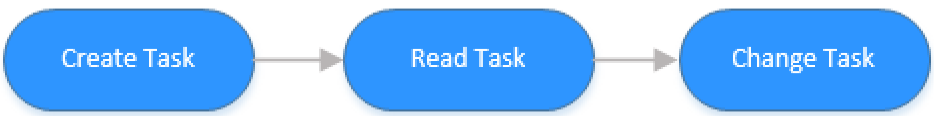
Each web service is detailed in the following sections.

5.19.7.1. Inbound Process Flow

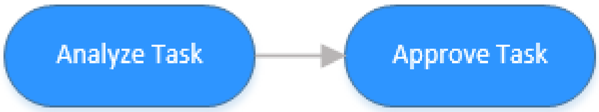
The standard inbound integration process flows would be:

- **Create/Change a Business Task in Transport Expresso**

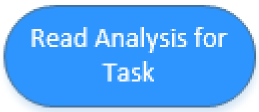
Creating or changing a Business Task requires simple calls to the appropriate web service. When changing a Task, the current field values should be read first to ensure changed data is not overwritten. The process flow should therefore be:



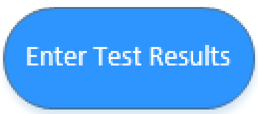
- **Approve a Business Task**
  When approving a Business Task it is important that the Task Analysis is completed to first to ensure that the approval can take place safely. The approval web service will not stop the approval if analysis results are ignored. The process flow for approving a Business Task in TE should therefore be:



- **The analysis results for a Task can be retrieved for any specific Target/Location by calling the Analysis Read web service**



- **Enter test results for a Business Task**
  When entering test results for a Business Task, it must be decided if this result is simply being saved or saved and approved. Only by using the save and approve will the change move to the following control point in the Path.



5.19.7.2. Web Services

The technical definitions are available as WSDL both for the main definition and test endpoint .

The following documentation, which details every action available, has been generated from the WSDL above.

Port type _-BTI_-TE_TASK_WS

5.19.7.2.1. Create a business task

Allows a new business task to be created in Transport Expresso with the details specified.

-bti-teTaskCreateWs

Input:

-bti-teTaskCreateWs

parameters type _-bti_-teTaskCreateWs

- **XDescription – optional; type string**
- **XTask type _-bti_-teStXtask**
  Id type char20 – type string with restriction maxLength(20)
  Caption type char100 – type string with restriction maxLength(100)
  Reference type char20 – type string with restriction maxLength(20)
  Groupid type char20 – type string with restriction maxLength(20)
  Typeid type char20 – type string with restriction maxLength(20)
  Testerid type char20 – type string with restriction maxLength(20)
  Priority type char1 – type string with restriction maxLength(1)
  Projectid type char20 – type string with restriction maxLength(20)
  Locked type char1 – type string with restriction maxLength(1)
  Path type numeric2 – type string with restriction maxLength(2) pattern(\d*)
  StatDepl type char20 – type string with restriction maxLength(20)
  StatPlan type char20 – type string with restriction maxLength(20)
  StatDeplMan type char1 – type string with restriction maxLength(1)
  StatPlanMan type char1 – type string with restriction maxLength(1)
- **XtCustfields – optional; type _-bti_-teTextfieldTt**
  item – optional, unbounded; type _-bti_-teTextfield
  Id type char3 – type string with restriction maxLength(3)
  Value type string
- **XtTesters – optional; type _-bti_-teTtXtasktest**
  item – optional, unbounded; type _-bti_-teStXtasktest
  Testerid type char20 – type string with restriction maxLength(20)
  Targetroleid type char20 – type string with restriction maxLength(20)
  Targetid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Systemid type char8 – type string with restriction maxLength(8)
  Mandt type clnt3 – type string with restriction maxLength(3)
  SmtpAddr type char241 – type string with restriction maxLength(241)
  Testername type char30 – type string with restriction maxLength(30)

Output:

-bti-teTaskCreateWsResponse

parameter type _-bti_-teTaskCreateWsResponse

- **YReturn type _-bti_-teStXretrn**
  Msgtyp type char1 – type string with restriction maxLength(1)
  Msgid type char20 – type string with restriction maxLength(20)
  Msgnum type numeric3 – type string with restriction maxLength(3) pattern(\d*)
  Message type char220 – type string with restriction maxLength(220)
  Msgv1 type char50 – type string with restriction maxLength(50)
  Msgv2 type char50 – type string with restriction maxLength(50)
  Msgv3 type char50 – type string with restriction maxLength(50)
  Msgv4 type char50 – type string with restriction maxLength(50)
  Exception type char50 – type string with restriction maxLength(50)
- **YTask type _-bti_-teTask**
  Id type char20 – type string with restriction maxLength(20)
  Caption type char100 – type string with restriction maxLength(100)
  Reference type char20 – type string with restriction maxLength(20)
  Refsearch type char20 – type string with restriction maxLength(20)
  Groupid type char20 – type string with restriction maxLength(20)
  Typeid type char20 – type string with restriction maxLength(20)
  Testerid type char20 – type string with restriction maxLength(20)
  Priority type char1 – type string with restriction maxLength(1)
  Locked type char1 – type string with restriction maxLength(1)
  StatDepl type char20 – type string with restriction maxLength(20)
  StatPlan type char20 – type string with restriction maxLength(20)
  StatDeplMan type char1 – type string with restriction maxLength(1)
  StatPlanMan type char1 – type string with restriction maxLength(1)

5.19.7.2.2. Change a business task

Allows an existing business task to be changed in Transport Expresso with the details specified.

-bti-teTaskChangeWs

The various XUpdate… fields need to be set to ‘X’ for the corresponding data to be taken into account.
Input:

-bti-teTaskChangeWs

parameters type _-bti_-teTaskChangeWs

- **XDescription – optional; type string**
- **XTask type _-bti_-teStXtask**
  Id type char20 – type string with restriction maxLength(20)
  Caption type char100 – type string with restriction maxLength(100)
  Reference type char20 – type string with restriction maxLength(20)
  Groupid type char20 – type string with restriction maxLength(20)
  Typeid type char20 – type string with restriction maxLength(20)
  Testerid type char20 – type string with restriction maxLength(20)
  Priority type char1 – type string with restriction maxLength(1)
  Projectid type char20 – type string with restriction maxLength(20)
  Locked type char1 – type string with restriction maxLength(1)
  Path type numeric2 – type string with restriction maxLength(2) pattern(\d*)
  StatDepl type char20 – type string with restriction maxLength(20)
  StatPlan type char20 – type string with restriction maxLength(20)
  StatDeplMan type char1 – type string with restriction maxLength(1)
  StatPlanMan type char1 – type string with restriction maxLength(1)
- **XUpdateCustfields type char1 – type string with restriction maxLength(1)**
- **XUpdateDesc type char1 – type string with restriction maxLength(1)**
- **XUpdateTesters type char1 – type string with restriction maxLength(1)**
- **XUpddateTask – optional; type char1 – type string with restriction maxLength(1)**
- **XtCustfields – optional; type _-bti_-teTextfieldTt**
  item – optional, unbounded; type _-bti_-teTextfield
  Id type char3 – type string with restriction maxLength(3)
  Value type string
- **XtTesters – optional; type _-bti_-teTtXtasktest**
  item – optional, unbounded; type _-bti_-teStXtasktest
  Testerid type char20 – type string with restriction maxLength(20)
  Targetroleid type char20 – type string with restriction maxLength(20)
  Targetid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Systemid type char8 – type string with restriction maxLength(8)
  Mandt type clnt3 – type string with restriction maxLength(3)
  SmtpAddr type char241 – type string with restriction maxLength(241)
  Testername type char30 – type string with restriction maxLength(30)

Output:

-bti-teTaskChangeWsResponse

parameter type _-bti_-teTaskChangeWsResponse

- **YReturn type _-bti_-teStXretrn**
  Msgtyp type char1 – type string with restriction maxLength(1)
  Msgid type char20 – type string with restriction maxLength(20)
  Msgnum type numeric3 – type string with restriction maxLength(3) pattern(\d*)
  Message type char220 – type string with restriction maxLength(220)
  Msgv1 type char50 – type string with restriction maxLength(50)
  Msgv2 type char50 – type string with restriction maxLength(50)
  Msgv3 type char50 – type string with restriction maxLength(50)
  Msgv4 type char50 – type string with restriction maxLength(50)
  Exception type char50 – type string with restriction maxLength(50)

5.19.7.2.3. Read a business task

Allows an existing business task in Transport Expresso to be read to obtain the details.

-bti-teTaskReadWs

Input:

-bti-teTaskReadWs

parameters type _-bti_-teTaskReadWs

- **XTaskid type char20 – type string with restriction maxLength(20)**

Output:

-bti-teTaskReadWsResponseSource code

parameter type _-bti_-teTaskReadWsResponse

- **YDescription type string**
- **YTask type _-bti_-teStXtask**
  Id type char20 – type string with restriction maxLength(20)
  Caption type char100 – type string with restriction maxLength(100)
  Reference type char20 – type string with restriction maxLength(20)
  Groupid type char20 – type string with restriction maxLength(20)
  Typeid type char20 – type string with restriction maxLength(20)
  Testerid type char20 – type string with restriction maxLength(20)
  Priority type char1 – type string with restriction maxLength(1)
  Projectid type char20 – type string with restriction maxLength(20)
  Locked type char1 – type string with restriction maxLength(1)

Path type numeric2 – type string with restriction maxLength(2) pattern(\d*)
StatDepl type char20 – type string with restriction maxLength(20)
StatPlan type char20 – type string with restriction maxLength(20)
StatDeplMan type char1 – type string with restriction maxLength(1)
StatPlanMan type char1 – type string with restriction maxLength(1)

- **YtCustfields type _-bti_-teTextfieldTt**
  item – optional, unbounded; type _-bti_-teTextfield
  Id type char3 – type string with restriction maxLength(3)
  Value type string
- **YtTesters type _-bti_-teTtXtasktest**
  item – optional, unbounded; type _-bti_-teStXtasktest
  Testerid type char20 – type string with restriction maxLength(20)
  Targetroleid type char20 – type string with restriction maxLength(20)
  Targetid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Systemid type char8 – type string with restriction maxLength(8)
  Mandt type clnt3 – type string with restriction maxLength(3)
  SmtpAddr type char241 – type string with restriction maxLength(241)
  Testername type char30 – type string with restriction maxLength(30)

5.19.7.2.4. Start the analysis for a business task

Starts the Transport Expresso analysis process for a specific business task.

The status and results of the analysis can be queried later via the “Read the results of an analysis run“ web service using the analysis ID returned so it can be determined if it safe to approve.

-bti-teTaskAnalyseWs

Input:

-bti-teTaskAnalyseWs

parameters type _-bti_-teTaskAnalyseWs

- **XAnltypeid – optional; type numeric4 – type string with restriction maxLength(4) pattern(\d**)*
- **XLocation type char1 – type string with restriction maxLength(1)**
- **XTarget type numeric4 – type string with restriction maxLength(4) pattern(\d**)*
- **XTaskid type char20 – type string with restriction maxLength(20)**
- **XtRequest type _-bti_-teTtRfc010**
- **item – optional, unbounded; type _-bti_-teStRfc010**

- **Trkorr type char20 – type string with restriction maxLength(20)**

Output:

-bti-teTaskAnalyseWsResponse

parameter type _-bti_-teTaskAnalyseWsResponse

- **XtRequest type _-bti_-teTtRfc010**
  item – optional, unbounded; type _-bti_-teStRfc010
  Trkorr type char20 – type string with restriction maxLength(20)
- **YAnalysisId type char20 – type string with restriction maxLength(20)**
- **YReturn type _-bti_-teStXretrn**
  Msgtyp type char1 – type string with restriction maxLength(1)
  Msgid type char20 – type string with restriction maxLength(20)
  Msgnum type numeric3 – type string with restriction maxLength(3) pattern(\d*)
  Message type char220 – type string with restriction maxLength(220)
  Msgv1 type char50 – type string with restriction maxLength(50)
  Msgv2 type char50 – type string with restriction maxLength(50)
  Msgv3 type char50 – type string with restriction maxLength(50)
  Msgv4 type char50 – type string with restriction maxLength(50)
  Exception type char50 – type string with restriction maxLength(50)

5.19.7.2.5. Read the results of an analysis run

Reads the results of an analysis run started via the “Start the analysis for a business task” web service. This will return all analysis issues reported for the analysed business task so it can be determined if it safe to approve.

-bti-teTaskReadAnalysisWs

Input:

-bti-teTaskReadAnalysisWs

parameters type _-bti_-teTaskReadAnalysisWs

- **XAnalysisId type char20 – type string with restriction maxLength(20)**
- **XMaxlines type int**
- **YtAnalysisResultColumns type TableOf_-bti_-teStRfc110**

item – optional, unbounded; type _-bti_-teStRfc110
Groupid type char10 – type string with restriction maxLength(10)
Columnid type char10 – type string with restriction maxLength(10)
Columnname type char50 – type string with restriction maxLength(50)
Columnwidth type char10 – type string with restriction maxLength(10)

- **YtAnalysisResultGroups type TableOf_-bti_-teStRfc112**
  item – optional, unbounded; type _-bti_-teStRfc112
  Groupid type char10 – type string with restriction maxLength(10)
  Anltypeid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Title type char100 – type string with restriction maxLength(100)
- **YtAnalysisResults type TableOf_-bti_-teStRfc107**
  item – optional, unbounded; type _-bti_-teStRfc107
  Groupid type char10 – type string with restriction maxLength(10)
  Rownum type char10 – type string with restriction maxLength(10)
  Columnid type char10 – type string with restriction maxLength(10)
  Texttype type char1 – type string with restriction maxLength(1)
  Text type char100 – type string with restriction maxLength(100)
- **YtConflictRequests type TableOf_-bti_-teStRfc103**
  item – optional, unbounded; type _-bti_-teStRfc103
  Strkorr type char20 – type string with restriction maxLength(20)
  Reason type char2 – type string with restriction maxLength(2)
  Trkorr type char20 – type string with restriction maxLength(20)
  Reldate type date – type string with restriction maxLength(10) pattern(\d\d\d\d-\d\d-\d\d)
  Reltime type time – type string with restriction maxLength(8) pattern(\d\d:\d\d:\d\d)
  AllowConfirm type char1 – type string with restriction maxLength(1)
  AllowAdminConf type char1 – type string with restriction maxLength(1)
  AllowImport type char1 – type string with restriction maxLength(1)
- **YtStatus type _-bti_-teTtAnlStatus**
  item – optional, unbounded; type _-bti_-teStAnlStatus
  Anltypeid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Description type char50 – type string with restriction maxLength(50)
  Startdate type date – type string with restriction maxLength(10) pattern(\d\d\d\d-\d\d-\d\d)
  Starttime type time – type string with restriction maxLength(8) pattern(\d\d:\d\d:\d\d)
  HasProgress type char1 – type string with restriction maxLength(1)
  Curnum type numeric8 – type string with restriction maxLength(8) pattern(\d*)
  Total type numeric8 – type string with restriction maxLength(8) pattern(\d*)
  Status type char1 – type string with restriction maxLength(1)
  Errors type numeric8 – type string with restriction maxLength(8) pattern(\d*)

Output:

-bti-teTaskReadAnalysisWsResponse

parameter type _-bti_-teTaskReadAnalysisWsResponse

- **YProblems type char1 – type string with restriction maxLength(1)**
- **YRunning type char1 – type string with restriction maxLength(1)**
- **YtAnalysisResultColumns type TableOf_-bti_-teStRfc110**
  tem – optional, unbounded; type _-bti_-teStRfc110
  Groupid type char10 – type string with restriction maxLength(10)
  Columnid type char10 – type string with restriction maxLength(10)
  Columnname type char50 – type string with restriction maxLength(50)
  Columnwidth type char10 – type string with restriction maxLength(10)
- **YtAnalysisResultGroups type TableOf_-bti_-teStRfc112**
  item – optional, unbounded; type _-bti_-teStRfc112
  Groupid type char10 – type string with restriction maxLength(10)
  Anltypeid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Title type char100 – type string with restriction maxLength(100)
- **YtAnalysisResults type TableOf_-bti_-teStRfc107**
  item – optional, unbounded; type _-bti_-teStRfc107
  Groupid type char10 – type string with restriction maxLength(10)
  Rownum type char10 – type string with restriction maxLength(10)
  Columnid type char10 – type string with restriction maxLength(10)
  Texttype type char1 – type string with restriction maxLength(1)
  Text type char100 – type string with restriction maxLength(100)
- **YtConflictRequests type TableOf_-bti_-teStRfc103**
  item – optional, unbounded; type _-bti_-teStRfc103
  Strkorr type char20 – type string with restriction maxLength(20)
  Reason type char2 – type string with restriction maxLength(2)
  Trkorr type char20 – type string with restriction maxLength(20)
  Reldate type date – type string with restriction maxLength(10) pattern(\d\d\d\d-\d\d-\d\d)
  Reltime type time – type string with restriction maxLength(8) pattern(\d\d:\d\d:\d\d)
  AllowConfirm type char1 – type string with restriction maxLength(1)
  AllowAdminConf type char1 – type string with restriction maxLength(1)
  AllowImport type char1 – type string with restriction maxLength(1)
- **YtStatus type _-bti_-teTtAnlStatus**
  item – optional, unbounded; type _-bti_-teStAnlStatus
  Anltypeid type numeric4 – type string with restriction maxLength(4) pattern(\d*)
  Description type char50 – type string with restriction maxLength(50)
  Startdate type date – type string with restriction maxLength(10) pattern(\d\d\d\d-\d\d-\d\d)
  Starttime type time – type string with restriction maxLength(8) pattern(\d\d:\d\d:\d\d)
  HasProgress type char1 – type string with restriction maxLength(1)
  Curnum type numeric8 – type string with restriction maxLength(8) pattern(\d*)
  Total type numeric8 – type string with restriction maxLength(8) pattern(\d*)
  Status type char1 – type string with restriction maxLength(1)

Errors type numeric8 – type string with restriction maxLength(8) pattern(\d*)

5.19.7.2.6. Approve a business task

Perform the approval of a business task. Prior to approval the task should be analysed to determine whether it is safe to approve. Approval will move the task and its associated transports to the next location / process control point in Transport Expresso.

-bti-teTaskApproveWs

Input:

-bti-teTaskApproveWs

parameters type _-bti_-teTaskApproveWs

- **XAnalysisId type char20 – type string with restriction maxLength(20)**
- **XLocation type char1 – type string with restriction maxLength(1)**
- **XTarget type numeric4 – type string with restriction maxLength(4) pattern(\d**)*
- **XTaskid type char20 – type string with restriction maxLength(20)**
- **XtRequest type _-bti_-teTtRfc010**
  item – optional, unbounded; type _-bti_-teStRfc010
  Trkorr type char20 – type string with restriction maxLength(20)

Output:

-bti-teTaskApproveWsResponse

parameter type _-bti_-teTaskApproveWsResponse

- **XtRequest type _-bti_-teTtRfc010**
  item – optional, unbounded; type _-bti_-teStRfc010
  Trkorr type char20 – type string with restriction maxLength(20)
- **YReturn type _-bti_-teStXretrn**
  Msgtyp type char1 – type string with restriction maxLength(1)
  Msgid type char20 – type string with restriction maxLength(20)
  Msgnum type numeric3 – type string with restriction maxLength(3) pattern(\d*)
  Message type char220 – type string with restriction maxLength(220)
  Msgv1 type char50 – type string with restriction maxLength(50)
  Msgv2 type char50 – type string with restriction maxLength(50)
  Msgv3 type char50 – type string with restriction maxLength(50)
  Msgv4 type char50 – type string with restriction maxLength(50)

Exception type char50 – type string with restriction maxLength(50)

5.19.7.2.7. Enter the test results for a business task

Allows test results to be entered against a business task. Transport Expresso uses a test series to log the test results.

Closing the test series will approve the testing and move the task and its associated transports to the next location / process control point in Transport Expresso. If the test series is not closed (e.g. due to an unsuccessful test result) the test result are saved but the task and transports will not be approved and will remain open for further testing.

-bti-teTaskTestresWs

Input:

-bti-teTaskTestresWs

parameters type _-bti_-teTaskTestresWs

- **XClose type char1 – type string with restriction maxLength(1)**
- **XComment type string**
- **XLocation type char1 – type string with restriction maxLength(1)**
- **XRescode type char1 – type string with restriction maxLength(1)**
- **XTarget type numeric4 – type string with restriction maxLength(4) pattern(\d**)*
- **XTaskid type char20 – type string with restriction maxLength(20)**

Output:

-bti-teTaskTestresWsResponseSource code

parameter type _-bti_-teTaskTestresWsResponse

- **YReturn type _-bti_-teStXretrn**
  Msgtyp type char1 – type string with restriction maxLength(1)
  Msgid type char20 – type string with restriction maxLength(20)
  Msgnum type numeric3 – type string with restriction maxLength(3) pattern(\d*)
  Message type char220 – type string with restriction maxLength(220)
  Msgv1 type char50 – type string with restriction maxLength(50)
  Msgv2 type char50 – type string with restriction maxLength(50)
  Msgv3 type char50 – type string with restriction maxLength(50)

Msgv4 type char50 – type string with restriction maxLength(50)
Exception type char50 – type string with restriction maxLength(50)

5.19.7.2.8. Mapping internal values

All Transport Expresso web services and API's expect the TE internal field values to be supplied for them to function correctly. These internal ID's can be found in the following configuration and transactional tables:

WS field	Table	Field	Description
Groupid	/BTI/TE_GROUPS	GROUPID	Task Group ID (Use CLASS = TASK)
Typeid	/BTI/TE_TYPE	ID	Task Type ID (Use CLASS = TASK)
Projectid	/BTI/TE_PROJ	ID	Project ID
Statdepl	/BTI/TE_TASKSTAT	STATID	Deployment Status (Use STATTYPE = DS)
Statplan	/BTI/TE_TASKSTAT	STATID	Planning Status Use STATTYPE = PS)
XTarget, Targetid	/BTI/TE_TARG	TARGET	Target ID
Path	/BTI/TE_PATH	PATH	Path ID
XAnalysisId, YAnalysisid	/BTI/TE_ANLTYPE	ANLTYPID	Analysis Type ID
Targetroleid	/BTI/ TE_TARGROLE	ID	Target Role ID
Id, Taskid	/BTI/TE_TASK	ID	Task ID
XAnltypeid /BTI/ TE_ANLRUN	ANALYSISRUN	ID	Analysis Run ID
Reason	/BTI/ TE_ANREASON	REASON	Reason ID

Other mapping and web service fields:

WS Field	Description
XLocation	Location (Possible values: I – Inbox, Q – Import Queue, T – Test Queue, O – Outbox)
Priority	Priority (Possible values: 1 – Low, 2 – Normal, 3 – High, 4 – Urgent)
Locked	Locked (Flag values: X and SPACE)
XRescode	Test Result (Possible values: 0 – Testing Successful, 1 – Problem Found, 2 – Information, 3 – Waiting, 4 – Bypass Testing)
XClose	Close and Approve testing (Flag values: X and SPACE)

XDescription	Task long description
XTask, YTask	Structure for the main task field details
Caption	Task short description / subject
Reference	Task unique reference number (e.g. ticket, defect, change request number)
Testerid	SAP user id of the main task tester
Statdeplman	Flag to indicate that the task deployment status is manually set rather than allowing Transport Expresso to set it (Flag values: X and SPACE)
Statplanman	Flag to indicate that the task planning status is manually set rather than allowing Transport Expresso to set it (Flag values: X and SPACE)
Systemid	SAP system ID
XtCustfields, YtCustfields	Task custom field values structure formatted as a list of: • Id – Custom field ID • Value – Custom field value
XtTesters, YtTesters	Task testers structure to list the testers for the task
XUpdateCustfields	Flag to indicate whether the task Custom Fields are to be updated (Flag values: X and SPACE)
XUpdateDesc	Flag to indicate whether the task Description are to be updated (Flag values: X and SPACE)
XUpdateTesters	Flag to indicate whether the task Testers are to be updated (Flag values: X and SPACE)
XUpddateTask	Flag to indicate whether the task main fields (in XTask) are to be updated (Flag values: X and SPACE)
YProblems	Flag to indicate whether any analysis issues were found (Flag values: X and SPACE)
YRunning	Flag to indicate whether any analysis is still running or not (Flag values: X and SPACE)
XComment	Test to enter a free text comment during test results entry
XtRequest – Trkorr	A list of SAP transports to be analysed / approved
YReturn	WS call return structure to pass back messages and errors
Msgtyp	Type of message returned from the WS call (Possible values: E – Error, W – Warning, I – Information, S/Blank – Success)
Msgid	ID of the message returned from the WS call
Msgnum	Number of the message returned from the WS call
Message	Message text returned from the WS call
Msgv1 – 4	Further message texts returned from the WS call

5.19.7.2.9. Other communication techniques

Although the use of web services is the standard communication technique using Transport Expresso, as the product resides in the SAP Netweaver stack, other SAP standard communication techniques are available for integration if preferred.

tRFC Communication
All TE APIs exist as remote enabled function modules within the ABAP environment and can therefore be called using the standard tRFC calls through an appropriate RFC destination. If the external system integrating with TE is either another SAP system or able to call remote functions directly then this method of communication can be used.

For inbound scenarios, the standard API's can be called directly. For outbound scenarios, new send methods would need to be developed to enable direct calling of the external system.

IDoc Communication
As with TRFC integration above, as the TE API's are standard function modules, IDoc wrappers can be created to call them and standard IDoc processing configured to control the integration.

For inbound scenarios, the appropriate IDoc wrappers would need to be generated and any IDoc sub-system configuration completed. Once again, for outbound scenarios, new send methods would need to be developed for IDoc communication to be enabled.

5.19.8. BMC Remedy plug-in

The information contained in this section is aimed at experienced Remedy administrators and developers and does not cover in detail the setup and installation of Remedy workflow or foundation data as sufficient knowledge of such topics is assumed.

The integration has been developed against a Remedy environment running version 7.6.3 of the application server and ITSM applications, but code should work without issue on any 7.6.x environments. However, future implementations may be subject to change should BMC alter the way web services are implemented in Remedy.

Setup

There are 5 components that must be created and configured in order to complete the Web Service integration between Transport Expresso and Remedy. These are:

1. The Basis Technologies Remedy Web Service User (TE to Remedy Web Service calls)
2. Remedy foundation components that are needed to underpin web service trigger code on the Remedy

application server.
3. Remedy code running in the OOTB Change Management module to trigger a TE web service call.
4. The Basis Technologies Remedy Web Service Interface form (Remedy to TE Web Service calls)
5. The Basis Technologies Remedy Web Service Interface form workflow (Remedy to TE Web Service calls)

5.19.8.1. Web Service User

In order that Transport Expresso can make use of the Out-Of-The-Box (OOTB) Remedy Web Service for creating Change Work Detail entries, a named account will need to be created in order to allow connection to the designated Remedy application server that is hosting the Web Service interface.

Using a specific account obviates the need for the use of a nominated account to be configured in the Remedy Mid-tier to handle anonymous Web Service invocation.

Using a specific account to allow TE to consume a Remedy Web Service is recommended for the following reasons:

- The use of an anonymous Web Service call may run counter to the customer’s application security policy
- A specific account increases the auditability of Web Service invocation and traceability of processing during any debugging activity.

The default account used to allow TE to consume Remedy Web Services is btiwebservice. If the customer wishes to use another account to comply with security or corporate naming standards, then this would not be an issue, but it would require modification to the TE code that consumes the Remedy Web Service as this has been built to use the btiwebservice account.
The account must be set up via a profile in the CTM:People form in order to correctly allocate the desired licenses and application permissions. OOTB, the account only requires permissions to the Change Management application. In order that is can guarantee application access, the account must be allocated a fixed AR user license unless the customer operates a sufficient floating license ratio.

Furthermore, it is recommended that the btiwebservice account uses Master permissions for the ITSM modules in which it will be creating entries. This will avoid any application workflow exceptions that might block such entries being created. However, the allocation of a floating application license for the module in question would be sufficient.

If the customer has made modifications to Change Management application that have altered the behaviour of Change Master rights in terms of business rules, then these will need to be taken into consideration when creating the account.

In order for the account profile to be created, it will need to be associated with a company defined in the customer's Remedy application. The appropriate company will need to be decided via agreement with the customer.

The following screenshots outline the field values for the btiwebservice account when set up against the Calbro Services OOTB ITSM application sample company that is created during Remedy installation.

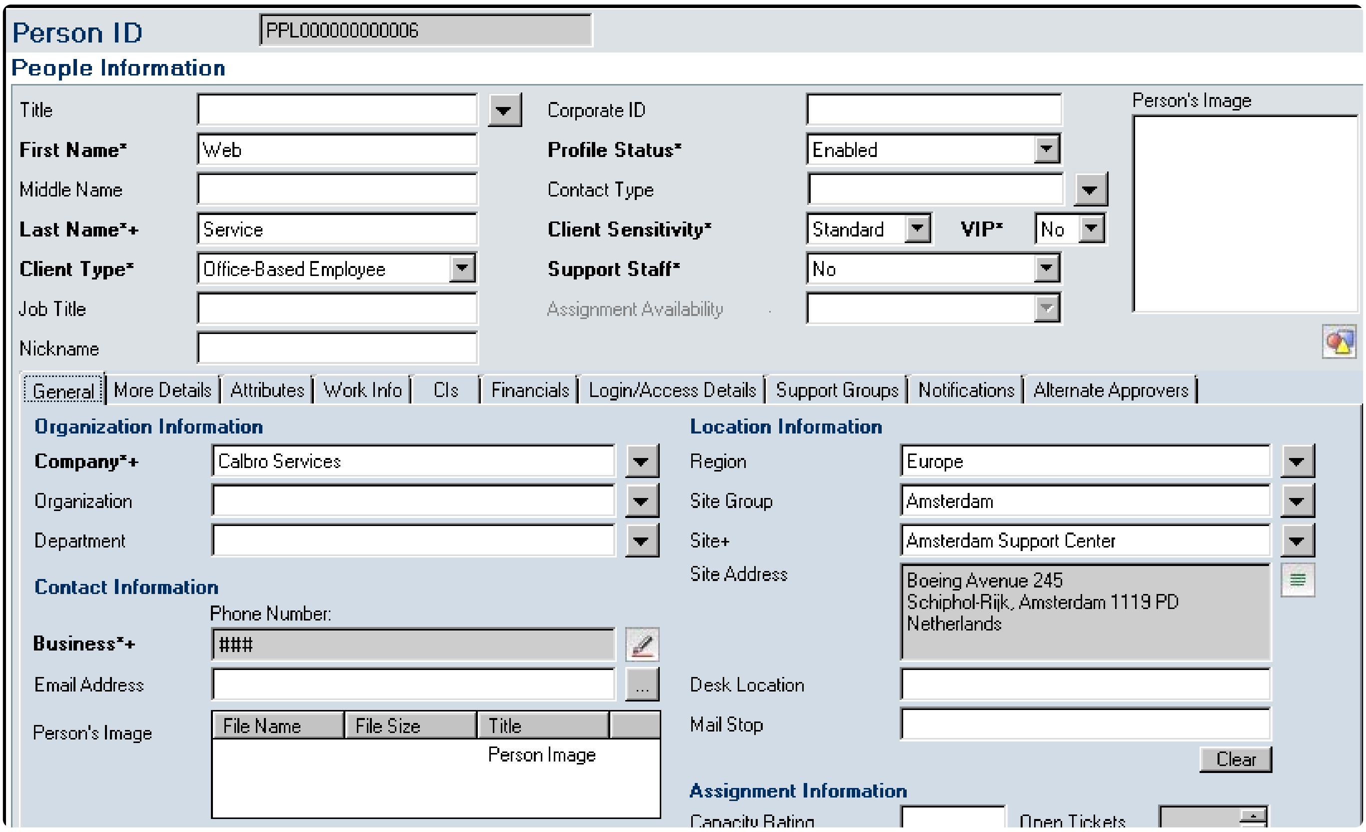


Figure 1: The General tab on CTM:People for the btiwebservice integration account

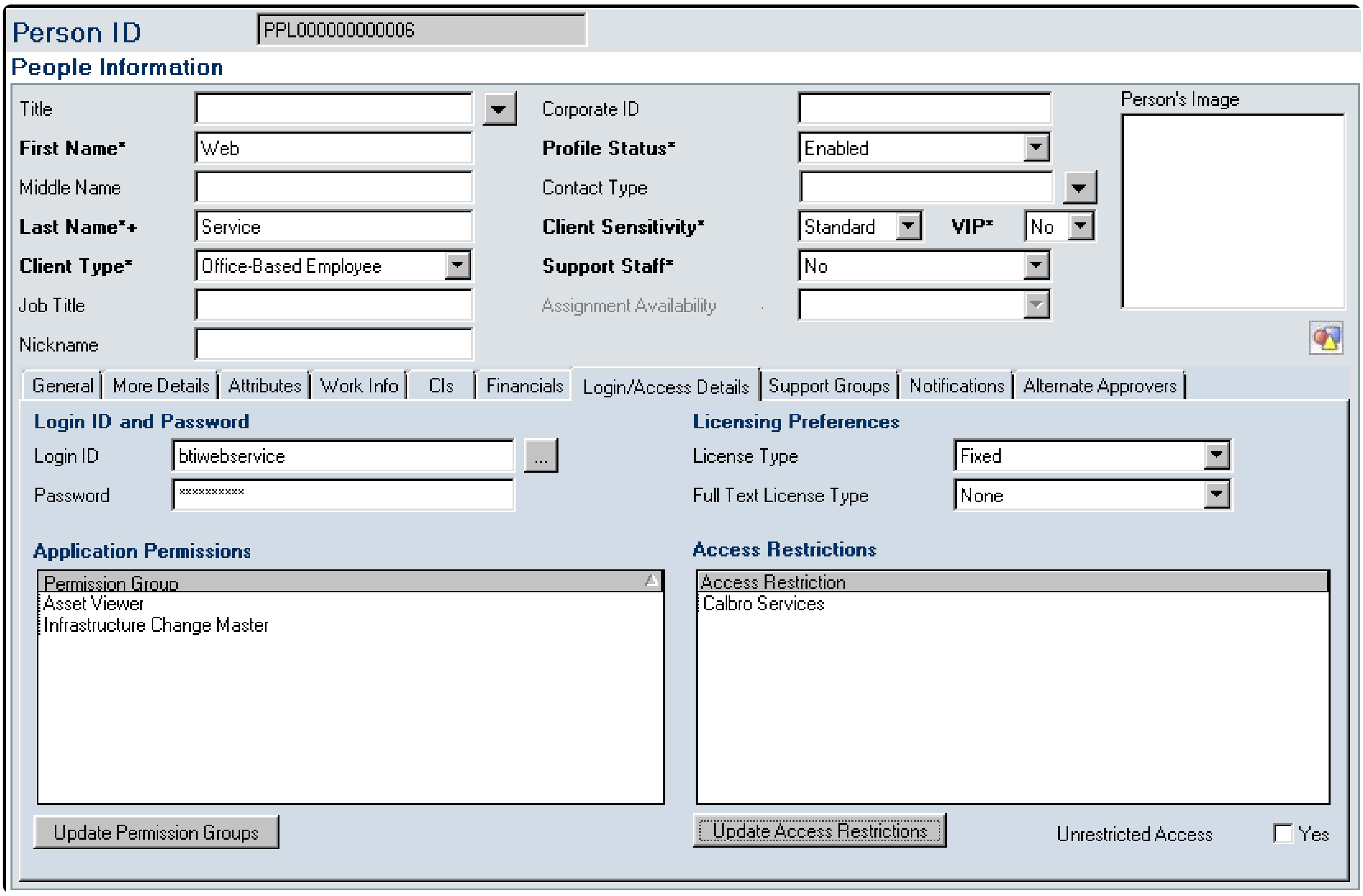


Figure 2: The Login/Account tab on CTM:People for the btiwebservice integration account

5.19.8.2. Remedy foundation data

Trigger Conditions

In order to provide a degree of flexibility as to when a TE web service might be called as part of the Remedy Change Management workflow, a new foundation form BTI:TE:WS_TriggerConditions (see Figure 3), has been created. This form can contain entries that are used to determine if an instance of a Change Request should call a TE web service in order to create a related task in TE.

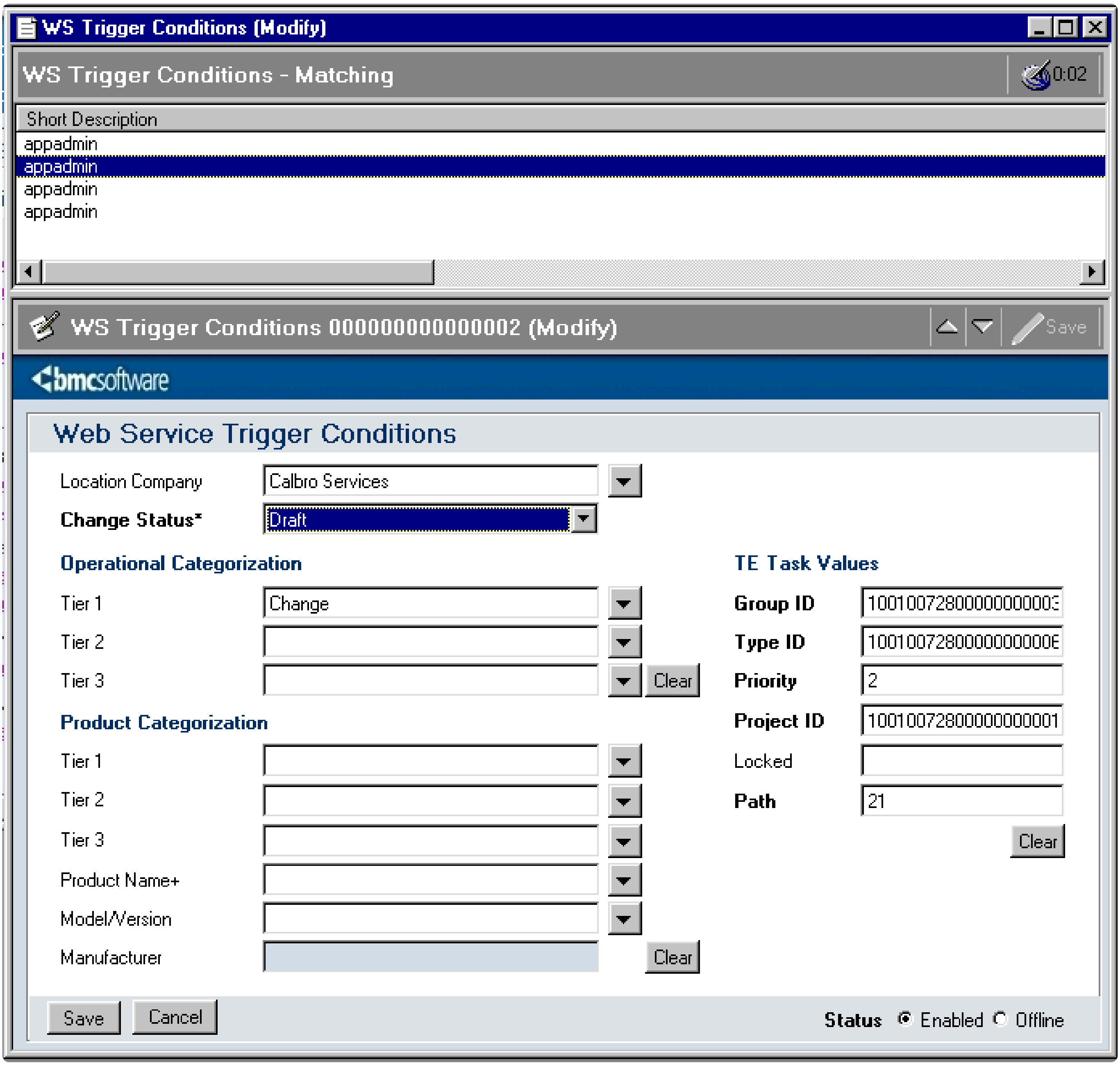


Figure 3: BTI:TE:WS_TriggerConditions

Entries in BTI:TE:WS_TriggerConditions define various criteria that a Change Request is compared against to determine if that request should create a task in TE. The criteria entries must contain a minimum of a Location Company (matched against the Location Company field on the Change Request form or any) and a Change Request Status (matched against the Change Request Status field on the Change Request form), but can also include a combination of Operational and Product Category tier fields that if defined are matched against the corresponding field combinations in an instance of a Change record. Note that entries in this form can use the value of – Global – for the Location Company field, in which case that entry will match any Location
Company value found in a Change Request.

In addition to the trigger criteria fields referred to above, entries in this form also contain Web Service input values that are applicable to that triggering condition. This allows flexibility to create tasks in TE with different input values for different Change states, companies and Change categorisation combinations. It also allows for flexible maintenance of this data should it be required due to configuration changes on the target TE environment.

To reach BTI:TE:WS_TriggerConditions in order to set up web service trigger condition records, it is necessary to create entries in the following forms:
• RAC:Config Options
• RAC:Config Tasks

These entries will ensure that a menu option appears in the Application Administration (Custom tab) under the Change Management -> Basis Technologies Settings menu structure.
The values for these entries are as follows:

RAC:Config Options

Field Label	Field Value
Application	Change Management
Object Name	BTIWSTrigger
Console Text	Basis Technologies Settings
Description	Manage Basis Technologies Web Service Triggers
Status	Enabled
Sorting Order	8
Display on Console	Yes
DataTags	Config-CHG

RAC:Config Tasks

Field Label	Field Value
Option Name	BTIWSTrigger
Task Name	Web Service Trigger
Console Text	Web Service Trigger
Task Type	Standard
Description	Trigger condition combinations (Location Company / Change Status / Op Cat / Prod Cat) can be created or modified using this option.
Accessible Groups	Infrastructure Change Config

Display on Console	Yes
Status	Enabled
DataTags	Config-CHG
Config Form	BTI:TE:WS_TriggerConditions
WUT View Name	Default Administrator View
Web View Name	Default Administrator View
Form Open Mode	Submit

Selecting the menu item for Web Service Trigger brings the form up in new mode. If you wish to modify existing entries in the form, simply change the mode to search and perform either a blank or QBE search. Pressing the Cancel button will close the form without saving changes or creating a new entry. Pressing the Save button will either create a new entry, or modify an existing one depending on upon the mode the form is currently in.

5.19.8.3. Custom Mappings

In addition to data defined trigger events, the Remedy integration allows users to define custom field mappings. These mappings allow administrators to specify any field available in the Remedy Change Infrastructure form and map it to the custom TE field of their choice.

Note: The example custom field mappings should be deleted once the package has been imported. These are for example purposes only.

As with the trigger conditions, the custom mappings administration form is accessible via the application administration console. To enable this, entries must be created in the following forms:

- RAC:Config Options
- RAC:Config Tasks

These entries will ensure that a menu option appears in the Application Administration (Custom tab) under the Change Management -> Basis Technologies Settings menu structure.

The values for these entries are as follows:

RAC:Config Option

Field Label	Field Value
Application	Change Management
Object Name	BTIWSMapping
Console Text	Basis Technologies Settings
Description	Manage Basis Technologies Web Service Mappings
Status	Enabled
Sorting Order	8
Display on Console	Yes
DataTags	Config-CHG

RAC:Config Tasks

Field Label	Field Value
Option Name	BTIWSMapping
Task Name	Web Service Mapping
Console Text	Web Service Mapping
Task Type	Standard
Description	Custom field mappings for TE Task web service
Accessible Groups	Infrastructure Change Config
Display on Console	Yes
Status	Enabled
DataTags	Config-CHG
Config Form	BTI:TE:WS_CustomMappings
WUT View Name	Default Administrator View
Web View Name	Default Administrator View
Form Open Mode	Submit

Selecting the menu item for Web Service Mapping brings the form up in new mode. From this screen you can create, modify or delete mappings entries as desired. The source fields are drawn from the Infrastructure Change form and the target fields are those that data will be pushed to on the BTI:TE:WS_Interface form when a web service call is set up.

5.19.8.4. Remedy TE Web Service trigger code

This code is attached to the CHG:Infrastructure Change form and compares field values in a Change Request with values in any entries found in BTI:TE:WS_TriggerConditions . If any match is found then code is triggered to push an entry into the form BTI:TE:WS_Interface which in turn will commence consumption of the TE task create web service.

The code has been written to run against an OOTB Change implementation. The execution order has been set to a range to try and ensure that it will also work in as many modified implementations as possible. However, if modifications have been made to the OOTB code, compatibility cannot be guaranteed and some modification may be necessary on a per customer basis.

The value in the Change Request number field (field ID 1000000182) of a given Change Request is used as the reference for the task that will be created in Transport Expresso. Because that reference must be unique in TE it is only possible to create a single task per Change Request in Remedy.

The tester id of the task is set to the Remedy user ID (field 1000003231) of the assignee in the Change Request record.

5.19.8.5. Web Service Interface form

The form BTI:TE:WS_Interface is used to consume Web Services on the TE side. It is recommended that any additional Web Service calls made to TE over and above task creation do so using code associated with this form.

At the time of writing, workflow has been developed and tested for creating tasks in TE, but other workflow along similar lines could be created in Remedy to consume further TE Web Services. Such calls may necessitate the creation of additional input (i_) and output (o_) fields to accommodate the specific interfaces of other TE Web Services.
An overview of processing carried out by this form follows:

1. A record is created from workflow running on the CHG:Change Infrastructure form if values from a triggering condition record in the BTI:TE:WS_TriggerConditions form matches the field values in the Change Request record. The fields set at this point are:

Field	Value
z1D Action	"CREATETETASK"
SourceForm	$SCHEMA$
z1D_TriggerId	$z1D_RecordExists?$
sysRequestId	$Request ID$
i_Testerid	$ASLOGID$
i_Reference	$Infrastructure Change ID$
i_Caption	$Description$
i_ChgReqStatus	$Change Request Status$

2. An instance ID GUID is generated.

3. The Web Service input fields from the trigger condition entry referred to in step 1 are pulled into the i_ fields in this record along with some additional fields in the change record that is keyed off the sysRequestId field.

4. A value of CREATETASK is pushed to the z1D Action field in this record in order to trigger modify related code.

5. The first action on modify is loop through any custom field mappings defined in the BTI:TE:WS_CustomMappings form and pull the relevant source field values from the change request keyed off the sysRequestId field. Each value is drawn into the specific zi_ field in the interface record that is specified in the target reference in the mapping entry.

6. Once all mapping entries have been processed, the next step is to call the TE create task web service using the values of the input (i_ and zi_) fields.

7. If any errors result in the calling of this Web Service, the interface record is placed into an error state and a Work Log entry associated with the initiating Change Request is created. This entry contains details of the error encountered when calling the Web Service.

8. If there was an error on the TE end of the call that occurred after successful invocation of the Web Service, then the details will be contained in the output Web Service Message fields. An error is denoted by the code E in the o_Msgtyp field. In such an event, code will trigger to place the interface record into an error state and to create a Work Log entry associated with the initiating Change Request. This entry contains details of the error encountered after successful invocation of the Web Service.

9. Alternatively, if the Web Service was called successfully, it will return output values to the Web Service output (o_) fields.

10. If there was no form of error resulting from the Web Service call, it means a task now exists in TE that has as a reference equivalent to the Change Request number of the triggering Change. This outcome is indicated by the o_Msgtyp return field containing a null value. A successful call and return to the TE create task Web Service results in the interface record being marked as Processed and a push

being performed to create a Work Log entry associated with the initiating Change Request. This entry contains details of the newly created TE task.

5.19.8.6. Setup of TE Web Service user

If implementation of the Web Service integration at a customer's site requires consumption of the TE Task creation Web Service, then if an application account specifically for Web Service consumption does not already exist, one must be created.

Whether using an existing or newly created account, the details of the account and its password must be supplied to the person(s) responsible for setting up the Remedy side of the integration.

This is so that these details can be captured when the filter consuming the TE Web Service is being amended for site specific operation.

In the Basis Technologies environment, this account is named remedy and the password for it is remedyrfc.

5.19.8.7. Web Service Workflow setup

The filter BTI:TE:CreateTETask_M_500_SF(WS:_-bti_-teTaskCreateWs-v2, has been developed as a template for consuming the TE task creation Web Service. When it is imported at a customer site, the server reference in the WSDL File line must be updated with specific values for the customer's location. There should not be the need to reload the WSDL once these changes have been made, it should simply be a case of pressing the login button again to apply the user name and password referred to in section 3.3. Once this is done, the filter can be tested for connectivity.

However, should it be necessary to remap inputs and outputs for the Web Service call, then the following mappings need to be applied.

XML Data Type	Form/Field	Mapping Info
ROOT	BTI:TE:WS_Interface	Primary Key = Request ID
XDescription	zi_DetailedDescription	
XSystemNumber	01	
XTask		
Id	i_TaskId	
Caption	i_Caption	
Reference	i_Reference	
Groupid	i_Groupid	
Typeid	i_Typeid	
Testerid	i_Testerid	
Priority	i_Priority	
Projectid	i_Projectid	
Locked	i_Locked	
Path	i_Path	
StatDepl		
StatPlan	i_ChgReqStatus	
StatDeplMan		
StatPlanMan		
Owner	zi_ChangeCoordinator	
Text		
Cf500	zi_CstmFld01	
Cf501	zi_CstmFld02	
Cf502	zi_CstmFld03	
Cf503	zi_CstmFld04	
Cf504	zi_CstmFld05	
Cf505	zi_CstmFld06	
Cf506	zi_CstmFld07	
Cf507	zi_CstmFld08	
Cf508	zi_CstmFld09	
Cf509	zi_CstmFld10	
Cf510	zi_CstmFld11	
Cf511	zi_CstmFld12	
Cf512	zi_CstmFld13	
Cf513	zi_CstmFld14	
Cf514	zi_CstmFld15	
Cf515	zi_CstmFld16	
Cf516	zi_CstmFld17	
Cf517	zi_CstmFld18	
Cf518	zi_CstmFld19	

Figure 4: Input mappings for the TE create task Web Service call

Cf519	zi_CstmFld20	
Cf520	zi_CstmFld21	
Cf521	zi_CstmFld22	
Cf522	zi_CstmFld23	
Cf523	zi_CstmFld24	
Cf524	zi_CstmFld25	
Cf525	zi_TstrFld01	
Cf526	zi_TstrFld02	
Cf527	zi_TstrFld03	
Cf528	zi_TstrFld04	
Cf529	zi_TstrFld05	
Cf530	zi_TstrFld06	
Cf531	zi_TstrFld07	
Cf532	zi_TstrFld08	
Cf533	zi_TstrFld09	
Cf534	zi_TstrFld10	
Cf535	zi_TstrFld11	
Cf536	zi_TstrFld12	
Cf537	zi_TstrFld13	
Cf538	zi_TstrFld14	
Cf539	zi_TstrFld15	
Cf540	zi_TstrFld16	
Cf541	zi_TstrFld17	
Cf542	zi_TstrFld18	
Cf543	zi_TstrFld19	
Cf544	zi_TstrFld20	
Cf545	zi_TstrFld21	
Cf546	zi_TstrFld22	
Cf547	zi_TstrFld23	
Cf548	zi_TstrFld24	
Cf549	zi_TstrFld25	

Figure 5: Output mappings for the TE create task Web Service call

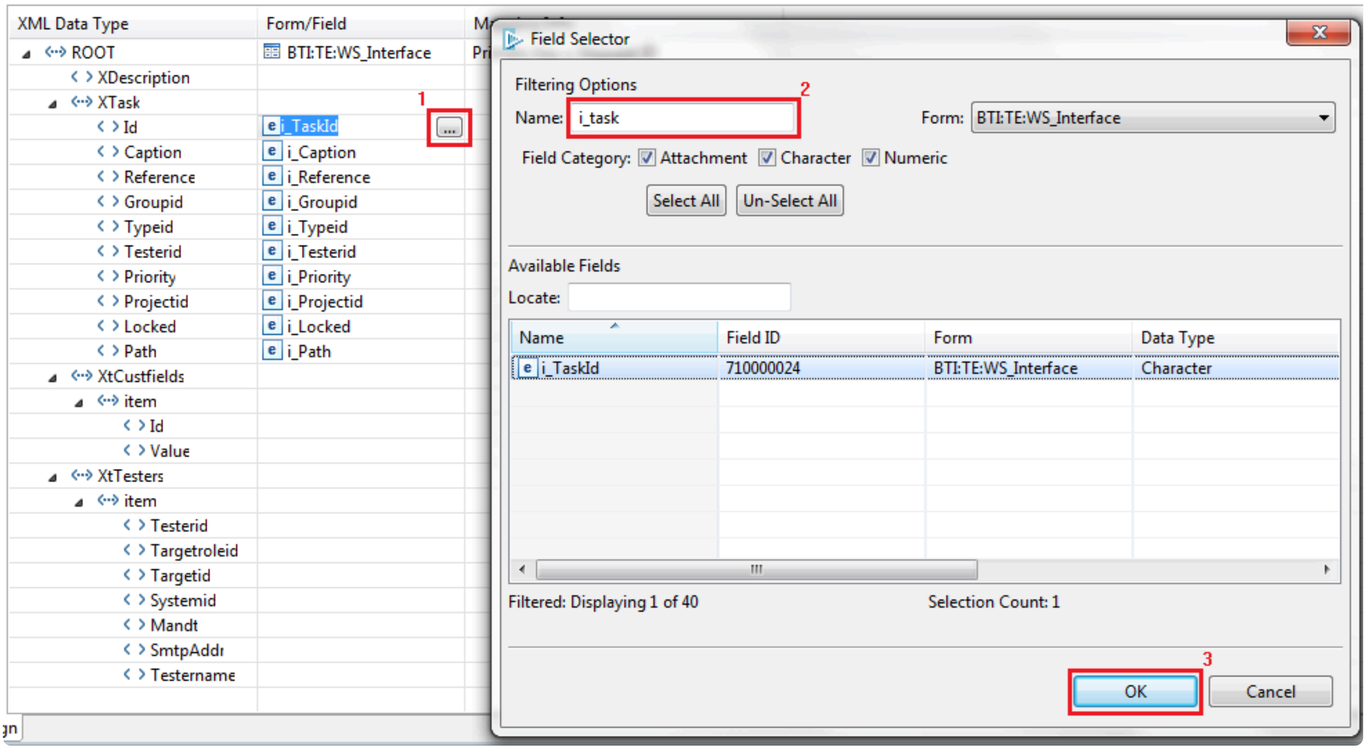
NOTE: These mappings relate only to the create task Web Service and input/output mappings to other TE Web Services are expected to be different.

NOTE: The filter BTI:TE:CreateTETask_M_500_SF(WS:_-bti_-teTaskCreateWs is from the previous implementation of the integration that did not include custom fields. It is included in the package for reference purposes only and would not normally be enabled for current TE implementations.

To reapply mappings, follow this process:

1. Click in the Form/Field cell for which you wish to map the Remedy field to/from. At this point a dialogue pop up button will appear (red square 1).
2. Click on this button to bring up the Field Selector dialogue.
3. Via this dialogue, use the field name box (red square 2) to type the name of the field on the BTI:TE:WS_Interface form that will either be used as an input to the TE task creation web service, or receive an output from that web service. This is an auto-complete field so as you type the list of matching available fields will diminish.
4. From the list of available fields, select the correct one and press the OK button (red square 3).

5. Repeat this process for each Remedy field on the BTI:TE:WS_Interface form that will be used as an input (i_ prefix) to the TE create task web service, or receive an output (o_ prefix) from consumption of that service. Refer to figures 4 and 5 for the complete list of field mappings.



5.19.8.8. Use of values returned from a TE Web Service call

Once values have been returned from a Web Service call to Transport Expresso, what is done with those values will most likely be customer specific. Additional customer specific workflow would need to be written on the Web Service interface form. This workflow would execute on modify at execution orders higher than 500 in order to pass the returned values out to customer specific forms, or to OOTB ITSM forms other than CHG:WorkLog.

For example, if the task id were to be written to a custom third party reference field in the Change Request that had issued the call to the Web Service in the first place, then a filter would need to be written to handle this requirement.

5.19.8.9. Consumption of the TE Task Create Web Service

This section outlines the processing that takes place in order for a TE task to be created when triggered by changes to the status of a Remedy Change Request

5.19.8.10. Consumption of the Remedy Create Change Work Info Web Service

This section outlines the processing that takes place in order for Transport Expresso to create a Work Info entry linked to a specific Remedy Change Request entry.

Remedy TE Web Service trigger code

The inbound integration between TE and Remedy utilizes OOTB Remedy Web Services. In particular, the CHG_ChangeInterface_WS Web Service defined against the CHG:ChangeInterface form.

In most implementations, in order to access this Web Service, Transport Expresso will need to use a specified Remedy account. Details of default account TE uses to connect to Remedy can be found in earlier section. If an alternative account is to be used, details will need to be supplied to the customer's staff with responsibility for TE in order to allow them to configure and test the TE Web Service consumption code.

Consumption of the CHG_ChangeInterface_WS Web Service requires a two part operation. The first operation (Change_Query_Service) is used to retrieve details of the Change Request for which a Work Info entry is to be created. In order to do this, it will be necessary to supply an Infrastructure Change ID (field 1000000182 on CHG:Infrastructure Change). This ID will be available to TE from a previous task create Web Service operation initiated from the Change Request in question.

Once details of the Change Request have been retrieved, the second operation (Change_Modify_Service), is then used to pass in details of the new Work Info entry.

As previously stated, the default implementation of the TE to Remedy integration uses OOTB Remedy Web Services. This means that once connection details are configured in the TE Web Service consumption code, then no further action is required on the Remedy side once connection and functional testing have been satisfactorily concluded.

If however, changes have been made to either the OOTB Web Services referred to above, or code that fires as a result of the consumption of these Web Services, then depending upon the nature of these changes, it may be necessary for TE development staff to alter the Web Service consumption code in order for the integration to work at a given customer site. For example, such customisations might include the addition of custom required fields, or fields that are enforced via the use of custom business rules.

5.19.9. ServiceNow add-on

Transport Expresso includes an out of the box solution / add-on to ServiceNow

This integration provides provides bi-directional data flows between Transport Expresso and ServiceNow including:

- Integration triggers
- Data mapping
- Error handling and notifications

The integration solution is all configuration (ie no additional development is required). It was built using the ServiceNow Certified Integration Program.

5.20. Diffuser

Several part of Transport Expresso, namely the i) Deep Impact Analysis and ii) Test Impact Radar analysis checks processes significant amounts of SAP object level data and so use Diffuser (previously known as Mass Data Runtime (MDR), a SAP add-on developed by Basis Technologies to enable SAP ABAP programs and transactions to run in a fraction of their normal run-time without the need for additional hardware.

5.20.1. Setting up Object Linkages (for Deep Impact Analysis / Test Impact Radar)

The following steps should be followed to install Diffuser for use with Transport Expresso:

Step

01 Within each Development System, enter your Diffuser license key by executing transaction **/N/BTR/LICENSE** (or **/N/BTR/MDRLICENSE** in older TE versions), then select the option **Install** and a dialog appears into which you can enter the key.

02 Within each of your development systems, define the program via transaction /n/BTR/MDR. Enter /BTI/TE_REP_MDR_OBJECT_LINK (ie not the V2) and press **Create** with the radio button Program Definition selected.

“Generate Variant Internally” should be unchecked. If it is checked, go to change mode, untick it and save it. (this might ask for transport to be created, do so)
Interval size = 500-1000 is fine.

03 Within each of your development systems, define the program via transaction /n/BTR/MDR.
Enter /BTI/TE_REP_MDR_OBJECT_DELETE and press **Create** with the radio button Program Definition selected.

04 Perform the following backend configuration in each of the Development systems.

- A number range interval will need to be created for the range **/BTI/TELID** (using transaction SNRO)
- A variant for program **/BTI/TE_REP_MDR_OBJECT_LINK** called **LINKAGECRT** No objects should be ticked in the variant.
- A variant for program **/BTI/TE_REP_MDR_OBJECT_DELETE** called **LINKAGEDEL**

05 Run /BTI/TE_RLINKS_UPDATE_JOB_V2 in each of your development systems with the **All released requests update** checkbox set.
This will mark existing transports as processed.

06 Within each of your development systems, define the program via transaction /n/BTR/MDR.
Enter **/BTI/TE_REP_MDR_OBJECT_LINK_V2** and press **Create** with the radio button Program Definition selected.
“Generate Variant Internally” should be unchecked. If it is checked, go to change mode, untick it and save it. (this might ask for transport to be created, do so)

07 run /BTI/TE_REP_MDR_OBJECT_LINK_V2, choose the option “Linkages set via object entry”, flag all object types and run it
This acts on objects and not transports, fairly big interval sizes like 500 or 1000 should be fine. Will take several hours to run.

08 Schedule /BTI/TE_RLINKS_UPDATE_JOB_V2 to run with frequency every 10 minutes, in each of your Development systems.
“Update Time Reference” should be checked in the variant that you schedule.

09 Switch on Deep Impact Analysis analyser in TE Windows GUI configuration. Parameter [Level] should = 1

10 Go to transaction SM30 and put the following 2 entries in the table /BTR/PROGARCH

Diffuser Program Ref. Age /BTI/TE_REP_MDR_OBJECT_DELETE 2 /BTI/TE_REP_MDR_OBJECT_LINK 2

11 Set up a daily job to run report /BTR/MDR_INSTANCE_DELETE (using transaction SM36). Make sure “test flag” is turned off in your variant.

5.20.2. Examining Object Linkages

After setting up object linking, it is possible to examine object linkages using following program:
BTI/TE_REP_MDR_OBJECT_EXPLORE

5.21. Test Impact Radar

Transport Expresso includes functionality that assesses which customer test scripts are impacted by the delivery of a particular SAP change. The following are the elements to setting up and running Test Impact Radar:

1. Preparation (specifically the installation of Basis Technologies ‘Diffuser’ product)

2. Test Script Upload

3. Object Link Creation

4. Analysis Check Setup

5. Test Script Management

5.21.1. Preparation

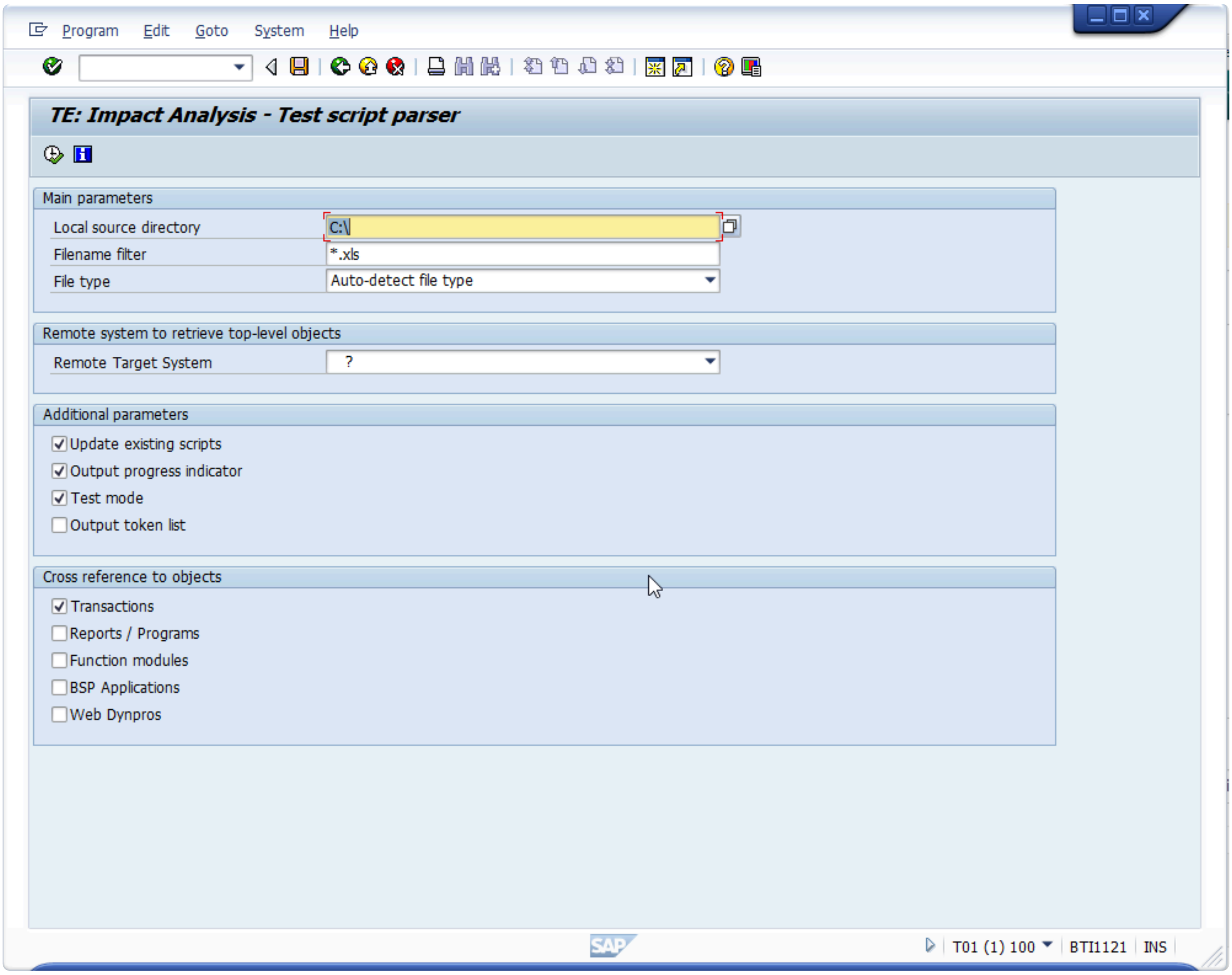
Basis Technologies seperate Diffuser product must have been installed and object linking setup as a pre-requisite for using Test Impact Radar.

Please refer to earlier section of Administration Guide for the details of setting up Diffuser.

5.21.2. Test Script Upload

To use Transport Expresso’s Test Impact Radar, you must upload your existing suite of test scripts into your TE Domain Controller. These can be in either Microsoft Word or Excel format.

This is done using transaction **/n/BTI/TE_TSCRT_IMPORT**



Field	Description
Local source directory	Specify the local directory in which the test scripts are stored. These should have been exported out of the test script repository (e.g. HP QC) via the bulk export function. Effectively you'll end up with N number of Excel/Word files within this local directory.
Filename filter	Specify the filename filter to restrict which files in the local source directory are selected (e.g. *.xls or *.xlsx).
File type	Allows you to select whether the files are Excel or Word. Alternatively, just leave as "Auto detect
Remote Target System	Since this is running on the Solution Manager system (TE domain controller) then there are no SAP applications installed there (e.g. HR, FI, SD). Hence, specify a target system upon which the SAP transactions, programs, BAPI's, BSP applications and Web-dynpro's will be retrieved from.
Update existing scripts	Updates existing test scripts that have already been loaded. This may be required if test scripts have been changed in the external test management system (e.g. HP QC).
Output progress indicator	Outputs the progress

Test mode	Run the upload in test mode only. No database changes will be made. Used for testing purposes.
Output token list	Output the list of “tokens” that are found within the file (for testing purposes only).

5.21.3. Object Link Creation

The initial linkage creation and ongoing linkage creation are done in each Development system via the following program: **/BTI/TE_RLINKS_UPDATE_JOB_V2**

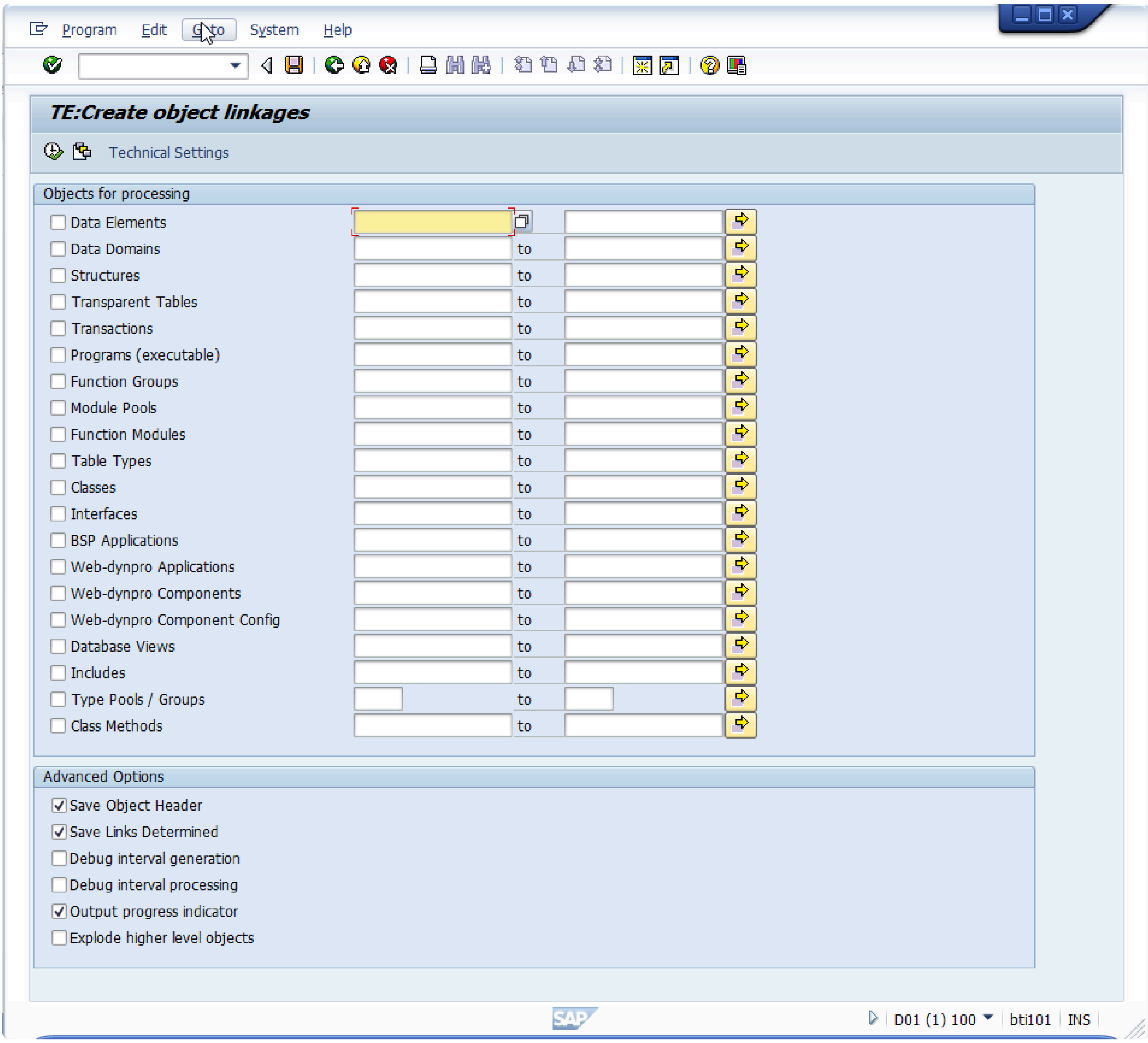
This is covered by the prerequisite steps in the previous Diffuser section so are not duplicated here.

5.21.4. Ongoing adhoc linkage creation

Object linkages can also be performed manually via Program **/BTI/TE_REP_MDR_OBJECT_LINK** if required.

From this screen it is possible to create linkages for individual SAP objects or for specific types of objects (e.g. Transactions, Includes etc).

The reality is you should not need to do this manually if you have set up a frequently running job as outlined as part of the pre-requisite Diffuser setup.



5.21.5. Analysis Check setup

The Test Impact Radar analysis check is used to highlight what top level SAP objects are included in the selected transport(s) for which it is run, and also to indicate what Test Scripts are impacted by the changes in the transports – i.e what test scripts should be executed at a minimum.

This Analysis Check needs to be switched on at each of the Control Points in your Transport Path that you wish to be told this information.

Please refer to the Configurable Analysis section of this Administration Guide for details of how to setup the Test Impact Radar analysis check.

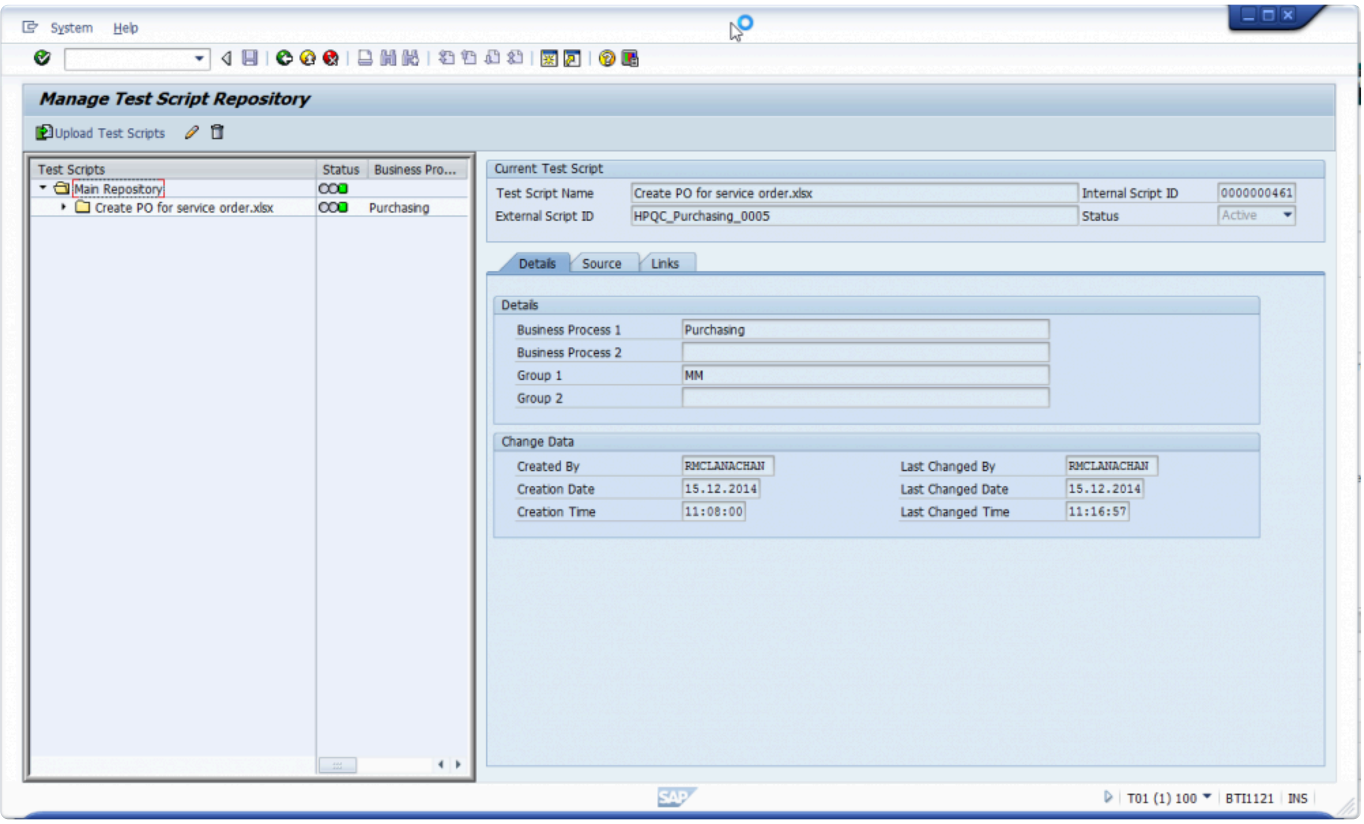
5.21.6. Test Script Management

After uploading test scripts, the Test Script Management console can be used to maintain existing scripts in your repository and also to upload additional individual scripts in the future.

This is done via transaction **/BTI/TE_TSCRT_MANAG** (technical program: /BTI/TE_RTEST_SCRIPT_MANAGE)

The left hand pane outlines the scripts that have bene uploaded. Double clicking on an individual script (on the folder icon) will bring up details of the script in the right hand pane.

From this screen, it is possible to deactivate test scripts so they are not included in the Test Impact Assessment. It is also possible to add additional meta-data information about the script (for example the business process the script relates to), and also view the top level SAP objects impacted by the test script.



5.22. Transport Description naming automation

As of Transport Expresso 6.20, it is now possible to automatically populate the Transport Description based on a pre-configured naming convention at the point the Developer is saving a Transport Form in the SAP GUI of the ABAP Development system.

Configuration of Transport Description naming automation

To setup this functionality, you need to configure the required Transport Description naming convention in /BTI/TE_TR_DESC table*

Within TE, each element of the required naming convention must be configured.

Each element can be one of the following:

2.1 Standard/Custom fields from a Task (or a specified substring from that value)
2.2 Standard/Custom fields from a Transport Form (or a specified substring from that value)
2.3 Configured Text strings
2.4 The Transport Description that the Developer writes prior to saving the TE Transport Form.

Instructions for configuring the Transport Description naming automation configuration table

The following details the fields in the configuration table, and what they are used for.

PATH: the path that this description configuration is valid for

SEQUENCE: sequential number to put the records in the correct order

TYPE: This is the type of the record. T = Task Field, F = Form field, X = constant/delimiter, D = current description of transport

CUSTOM_FIELDNUM: If you want to use the contents of a custom field, this is the number of it

TE_FIELD: this is the fieldname of the Task or TF. Note, for Group and Type fields, the field names are actually GROUP_NAME and TYPE_NAME. If you use GROUPID, it will actually use
the internal ID of the group. Task Reference = REFERENCE, not TASK_REFERENCE Task Subject = CAPTION, not SUBJECT Project = PROJECT_NAME, not PROJECT

JUSTIFICATION: Use this if you only want a sub-set of what is in the field. L = left x characters, R = right x characters, M = Middle of value, D = characters after a delimiter

LENGTH: the number of characters from the field you want to use (notes this is used in conjunction with the JUSTIFICATION above). If you leave this blank, the whole value is used

MID_START: If you select M for the JUSTIFICATION, this is the starting point in the value

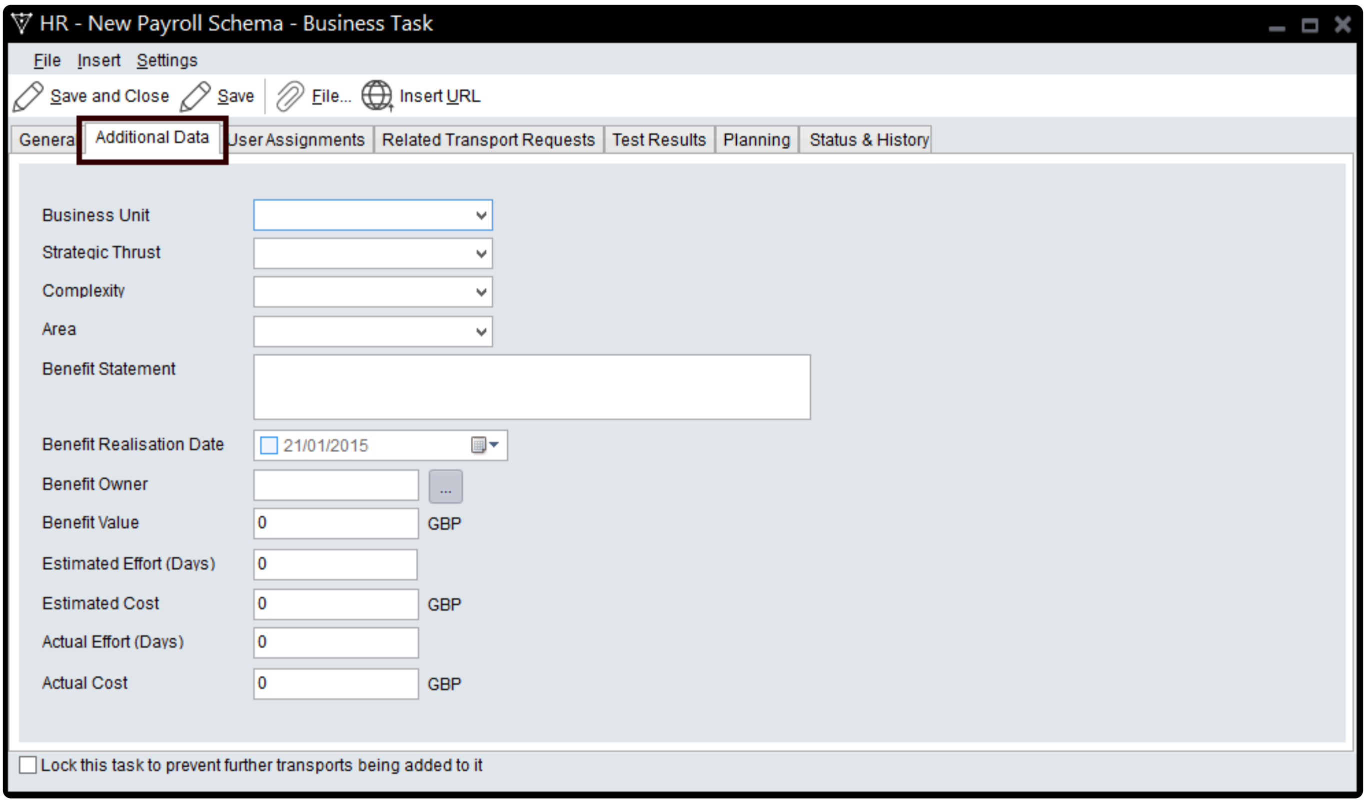
TEXT: If this is a constant/delimiter, then the text value should be entered here. Also, if you use the JUSTIFICATION = D, this is the delimiter in the text that the api looks for

Notes:
i) you should enter the **&** character before a “ “ *or “!” if you want to use either of those two characters in your text element. ie* **&** or **&!**
ii) you should enter **& &** if you want to have a leading or trailing space in your text element
iii) the transport naming automation only works when the Transport Form is created, not on later updates to existing Transport Form. So if you create the TF and then later update fields on the TF or BT, the Transport Description will not get automatically updated. In that scenario, you will need to manually amend the Transport Description in SAPGUI or in the Transport Form (if the transport is still unreleased of course).

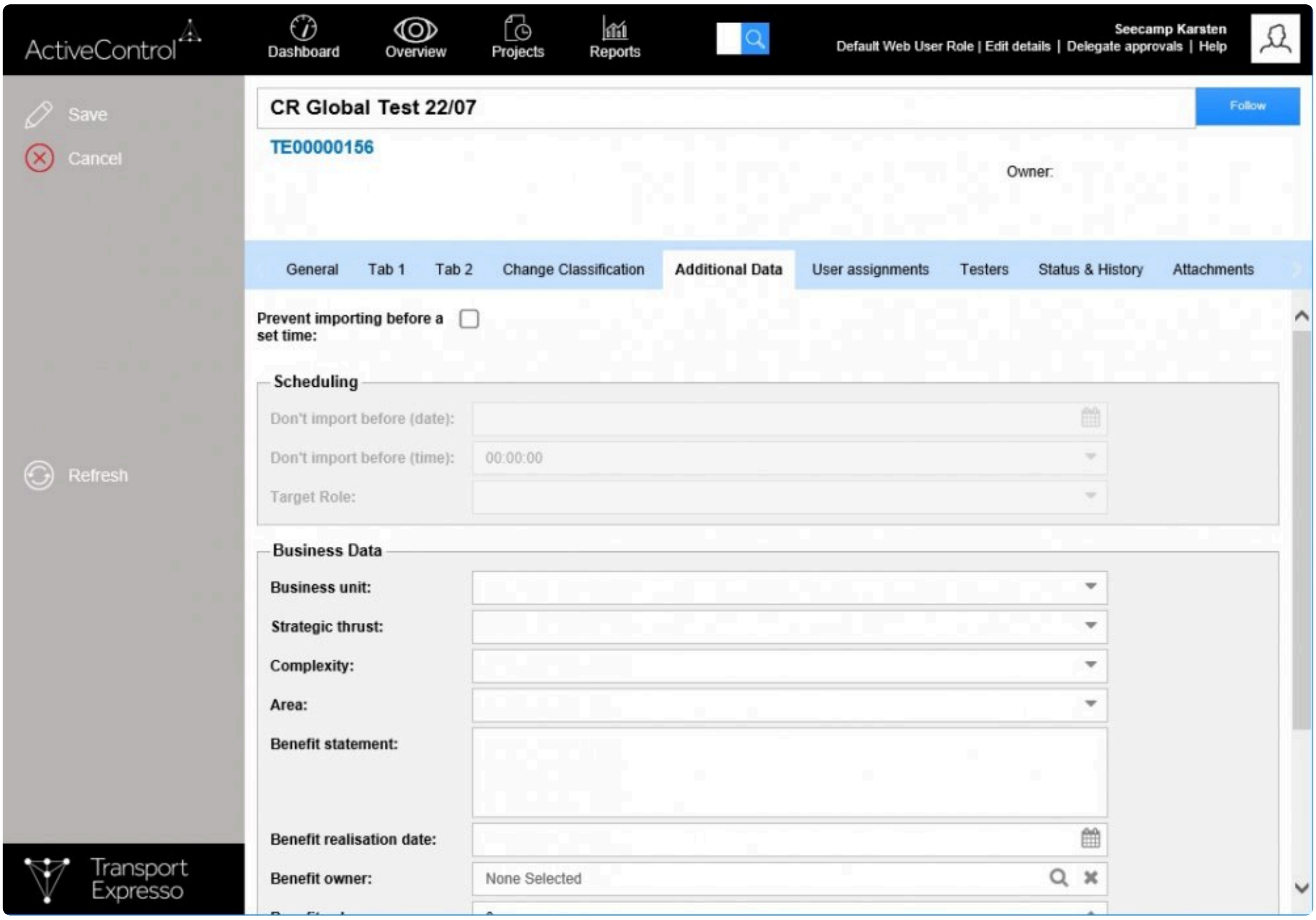
5.23. Additional Metadata

Various new meta data fields can be used for reporting purposes, at both Task and User level.

Windows GUI:



Web UI:



Although Transport Expresso ships with some out-the-box meta data, it can be amended. The rest of this section details the configuration tables in the TE Domain Controller backend.

5.23.1. Task metadata

Additional metadata can be recorded against Tasks.

This is visible in the **Additional Data** tab on the Task screen on both the Windows GUI and Web UI.

The following are the backend tables that can be maintained:

Type	Table	Description
Task	/BTI/TE_BUS_UNIT	Business Unit
Task	/BTI/TE_STTHRUST	Strategic Thrust
Task	/BTI/TE_COMP	Complexity
Task	/BTI/TE_AREA	Area
Task	/BTI/TE_TSK_PRTY	Task priority

Task	/BTI/TE_CONFIG	Set the currency to be used

5.23.2. User metadata

Additional metadata can be recorded against individual users.

This is visible in the **Details** screen within the Web UI.

The following are the backend tables that can be maintained:

Type	Table	Description	Notes
User	/BTI/ TE_EMPL_TYP	Employee Type	
User	/BTI/ TE_SUPPLIER	Supplier	
User	/BTI/ TE_GEOLOC	Location (With Geo coordinates)	
User	/BTI/ TE_COSTBAND	Cost band	
User	/BTI/ TE_USERPREF	User preference data	
User	/BTI/ TE_WEBUICFG	Web UI config	SUPLPIC_PREFIX and SUPLPIC_URLPREFX need to be maintained

5.24. Following

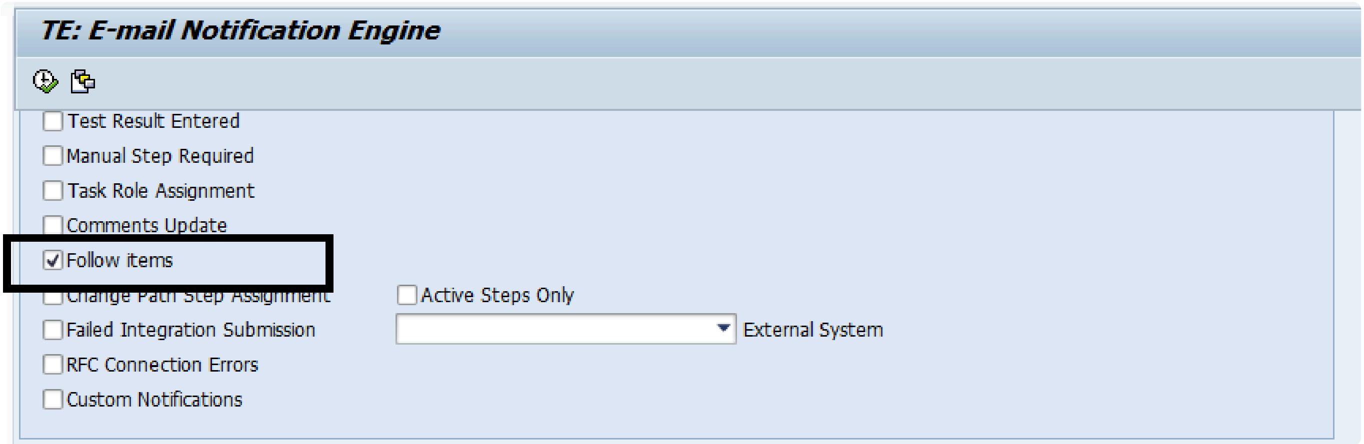
It is possible for users to **follow** specific TE Tasks, Transports and SAP Objects via the Web UI.

There are two configuration activities that need to be performed in the TE Domain Controlling to activate Following:

1. Program /BTI/TE_RUFOLLOWITEMS_UPDATE must be scheduled (after creating a variant)

(the recommendation is to add this program same job as the web UI news update program /BTI/ TE_RUNEWS_UPDATE)

2. The Following notification option must be switched on within program /BTI/TE_RNOTIFICATION_ENGINE for optional email notifications to be sent.



5.25. Configuration Audit / Table Logging

It is possibe to switch on full change logging of critical TE configuration tables, to ensure regulatory compliance to Sarbanes-Oxley, FDA etc.

Configuration changes can now be logged to the following TE configuration tables:

- Targets
- Approvers
- Paths
- Control points
- Groups
- Admins

5.26. SCC1 client copy automation

Transport Expresso includes SCC1 client copy automation for those customers that have multiple development clients, to avoid SAP teams having to manually SCC1 their changes into the other clients as part of their delivery.

Depending on a customer's individual requirements and the configured workflow and associated process – this can be done automatically (via configuration options in the General tab on a target) – or manually by the user in the TE Windows GUI via the "Perform SCC1 Client Copy" option on a right-mouse click on a Transport Form.

Please note that customers will need to add S_USER_AGR to the TE_RFC user role in development systems where SCC1 is used and they want to use SCC1 to copy roles across. In all other cases it's not needed.

5.27. Automated Approvals

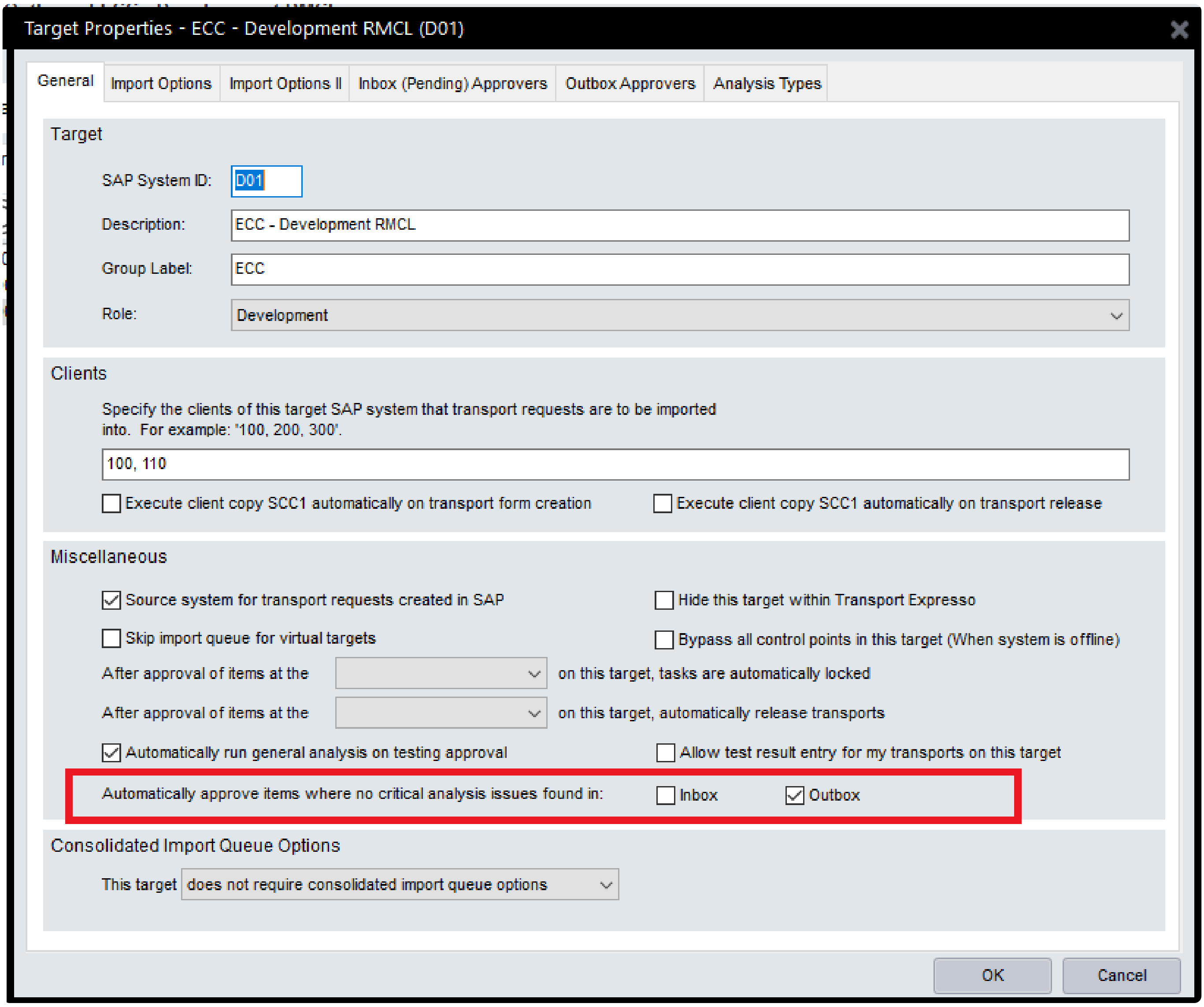
ActiveControl 7.00 introduces exception-based auto approval capability, to allows TE customers to have certain (configurable) analysers running automatically in a particular Inbox or Outbox, and only stop the transports for a manual approval if the analysers identify issues.

Three outcomes are possible with the analyser results:

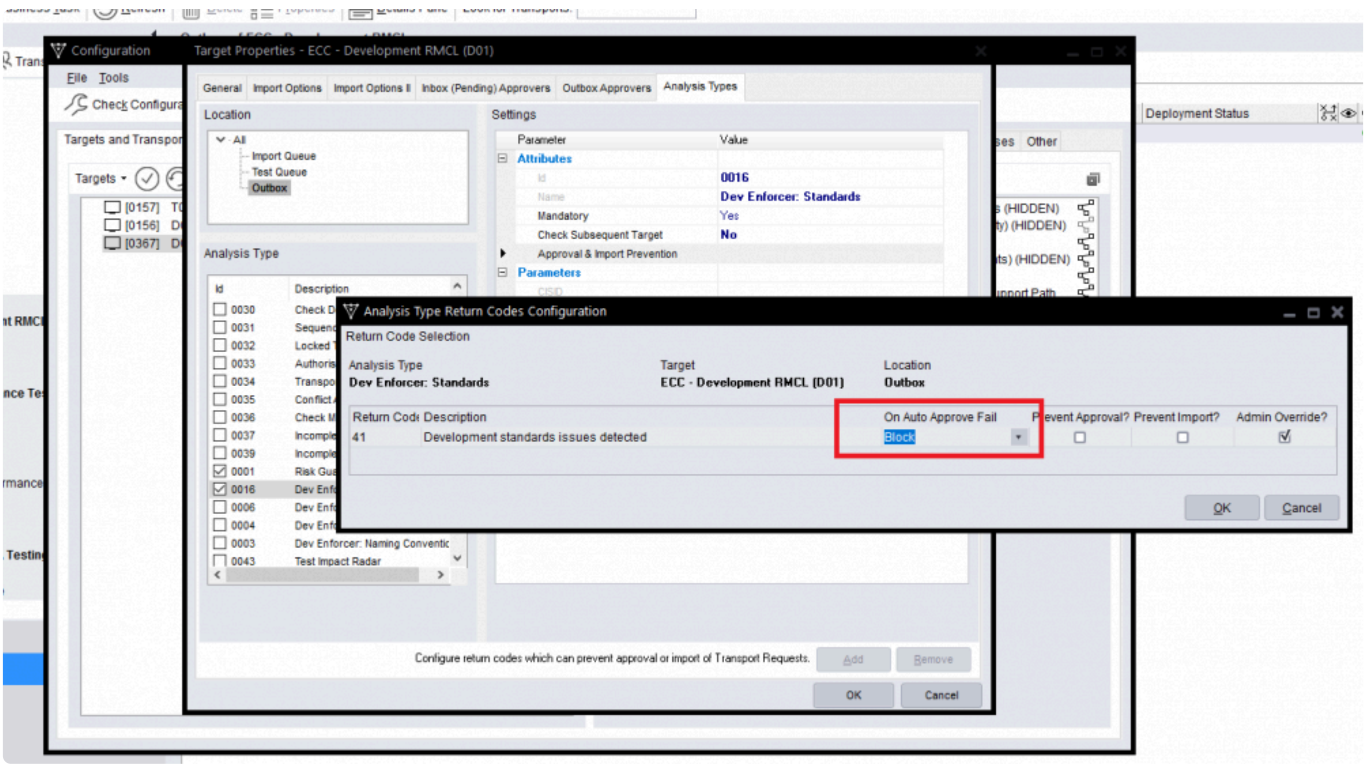
- BLOCK: if a particular analyser highlights an issue, TE will stop the Transport Form for a manual approval by the configured approver(s)
- WARN: if a particular analyser highlights a issue, TE will notify the configured approver(s) but still move the Transport Form forward to the next location.
- IGNORE: if a particular analyser highlights an issue, TE will move the Transport Form forward to the next location and not notify the configured approver(s).

Configuration Steps

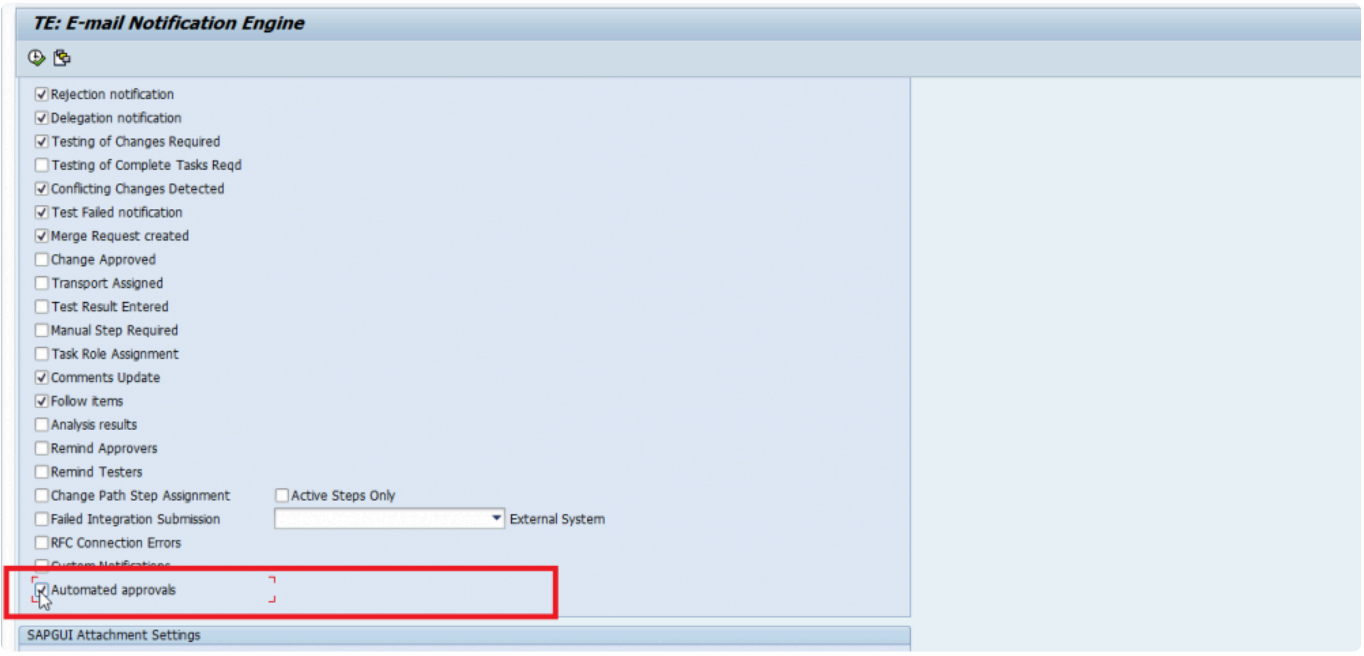
1) Switch on the auto-approval in the required Target and Inbox / Outbox location(s).



2) Switch on the analysers that you want to run as part of the Automatic Approval. And for each analyser you want to run, specify whether you want to Block, Ignore or Warn if the analyser finds an issue (from within Approval & Import Prevention).



3) Switch on the new Automated Approvals notification in /BTI/TE_RNOTIFICATION_ENGINE.
NB: This is a new Notification for the “Warning” emails. The “Block” email will use the existing “Approval Required: Inbox” or “Approval Required: Outbox” notifications.



4) Schedule program /BTI/TE_RUSET_AUTO_APPROVE_JOB to run every 5 minutes with your TE Batch user. No variant is required for this program. No additional authnorisations are required by the TE Batch user.
This job calls underlying program /BTI/TE_RUAUTO_APPROVE to create a separate job for each of the

targets have the Automatically Approve targets set – against which the automated approval process will run.

The format of these jobs will be: TE_AUTOAPPR_AAABBBBC

Where “AAA” is the SID of the Target, “BBB” is the Target number and “C” is the location (eg I (Inbox) or O (Outbox)

E.g.: TE_AUTOAPPR_D010457I

5) Configure the Inbox / Outbox Approvers via the existing the TE Windows GUI configuration – since an Approver will still need to do a manual approval in the BLOCK scenario.

Notes

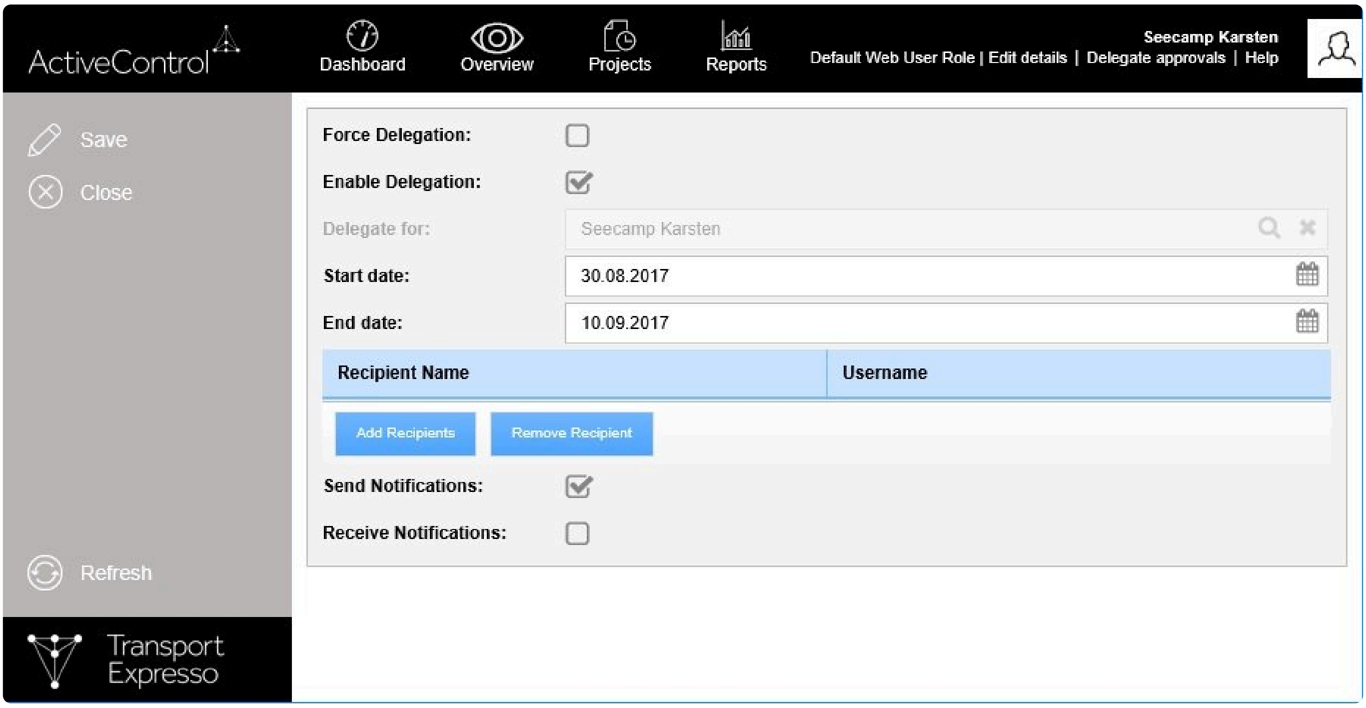
(i) Auto-Approval runs at Transport Form level. This is important as it means you should probably set the General: Dependency Check to BLOCK to ensure that individual transports do not move forward.

(ii) Auto-Approval is only designed to work on Inboxes and Outboxes, NOT on Test Queues

(iii) Priorisation of BLOCK / WARNING / IGNORE: If a Transport has a BLOCK on one analyser and a WARNING or IGNORE on the other analyser, the BLOCK will always take priority and the transport will stop for a manual approval.

5.28. Delegate using the Web UI

As part of the ongoing evolution of the TE Web UI to reduce the need for TE customers to deploy the TE Windows GUI to large numbers of users, it is now possible to delegate approvals (and force delegations) via the TE Web GUI.



To define delegations for your own user ID:
Select the link 'Delegate approvals' in the top right menu bar.
Select button 'Add Recipients' and select the users you want to delegate your tasks to.

> To notify the users you defined for delegation set the flag **Send notifications**.
> The be informed even there is an active delegation select **Receive Notifications**.

Enter a valid time frame for the delegation.
Activate the settings with the flag **Enable Delegation** .

Force delegation can be used to maintain other users delegation.
To be able to force delegations you need the authorization object Y_TECONF with value FORCEDELEGATE.
This authorization is available in the following TE authrization roles
/BTI/TE:STD_TEAM_LEAD_AUTHS
/BTI/TE:STD_CHANGE_TEAM_AUTHS
/BTI/TE:STD_BASIS_AUTHS
/BTI/TE:STD_ADMIN_AUTHS

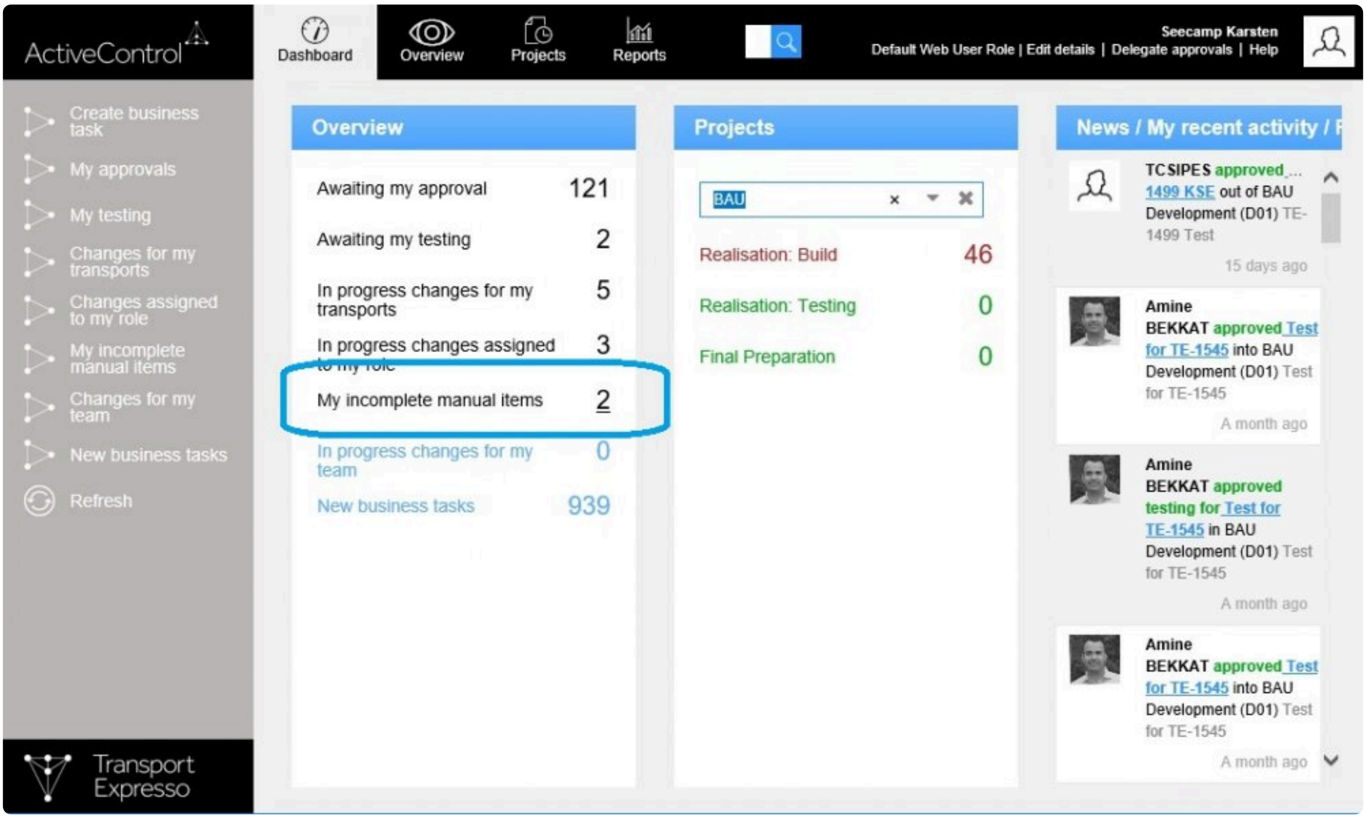
5.29. My Incomplete Manual Activities

ActiveControl 7.00 introduces a new **My Incomplete Manual Items** metric in the Web UI.

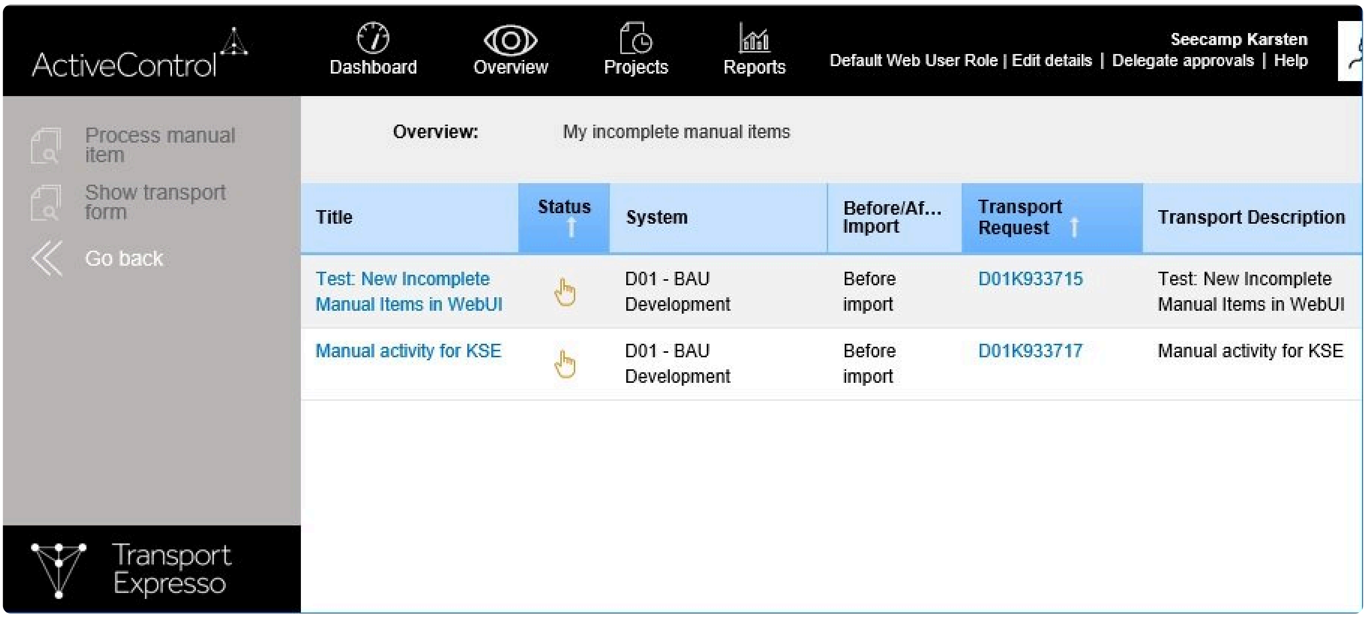
This link opens to a list of the Manual Steps and Manual Activities that are awaiting your action.

i) Steps that are required and are holding up Imports are indicated with a **red** hand.
ii) Steps that are required but not holding up Imports are indicated with an **orange** hand.

These manual items can then be marked as completed via the Web UI when they have been performed.

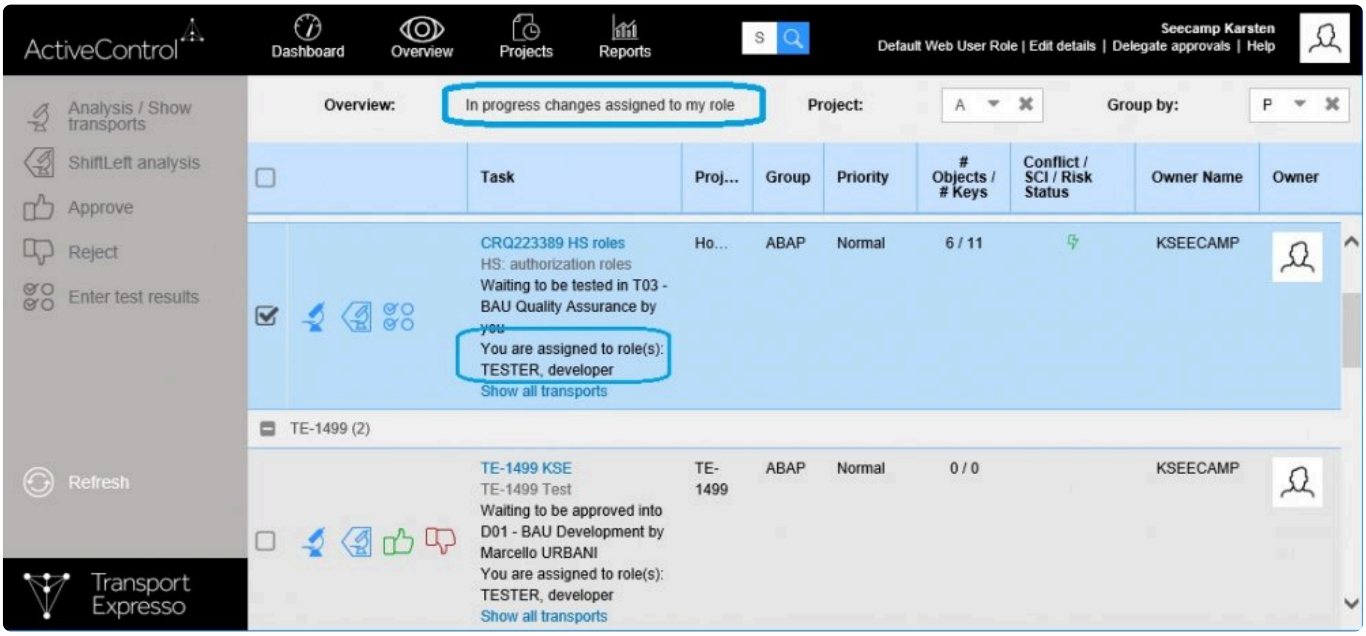


From here you can select the transport form or complete the manual step / manual activity.



5.30. In progress changes assigned to my roles

ActiveControl 7.0 introduces a new ‘In progress changes assigned to my roles’ metric in the Web UI, whereby users can see a list of the Business Tasks to which any their user role(s) have been assigned. This is based on the user role definition done in the Windows GUI in Tools – Configuration – User Roles. Then assign a user to a user role in a Business Task.



Configuration Steps

No specific configuration is required to switch on this functionality, However if it is not relevant for a customer’s processes within ActiveControl, the link can be removed from the TE Web UI via table /BTI/TE_ROLEMET. (the ID can be confirmed from table /BTI/TE_UIMETRIC)

5.31. Test sign-off for individual transports

Prior to ActiveControl 7.00, it has always only been possible to sign off testing in Test Queues at a Business Task level.
The guiding principle behind this has always been that testing is being signed off on an entire change, and so all Transport Forms relating to the Business Task should be moved at the one time.

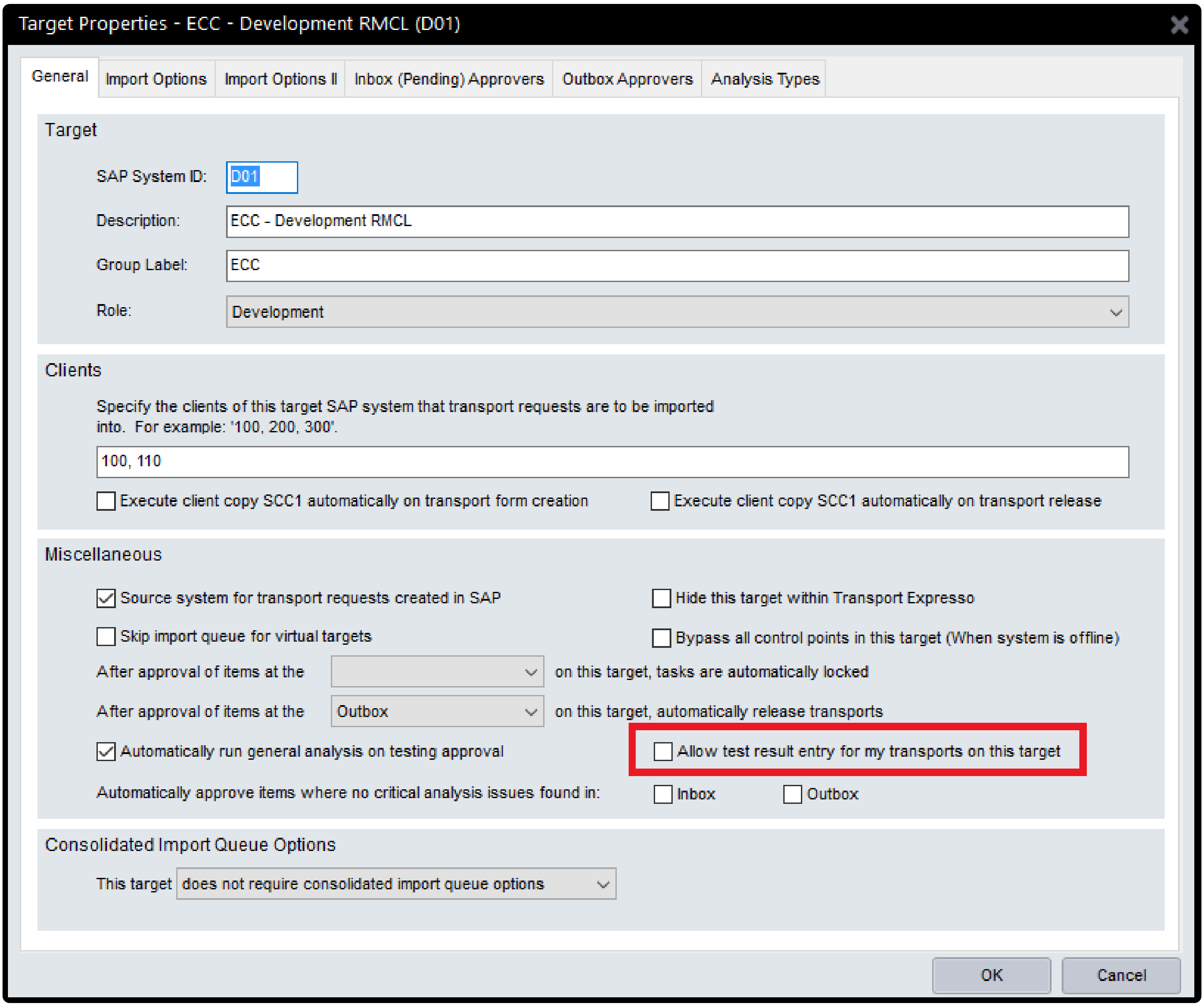
There are scenarios where customers want to move individual transports forward from Test Queues, (for example when unit testing of one transport is complete, and the Developer wants to move it into subsequent test system for further testing in advance of the other transports relating to the same change being developed/unit tested).

ActiveControl 7.00 introduces a ‘Partial Testing’ capability in Test Queues to facilitate this requirement.

This can be performed in both the Windows GUI and in the Web UI.
The option must be switched on explicitly for each of the target development system.

Configuration Steps

To enable transport level testing signoff, tick the ‘Allow test result entry for my transports on this target’ checkbox on the target.



Notes:

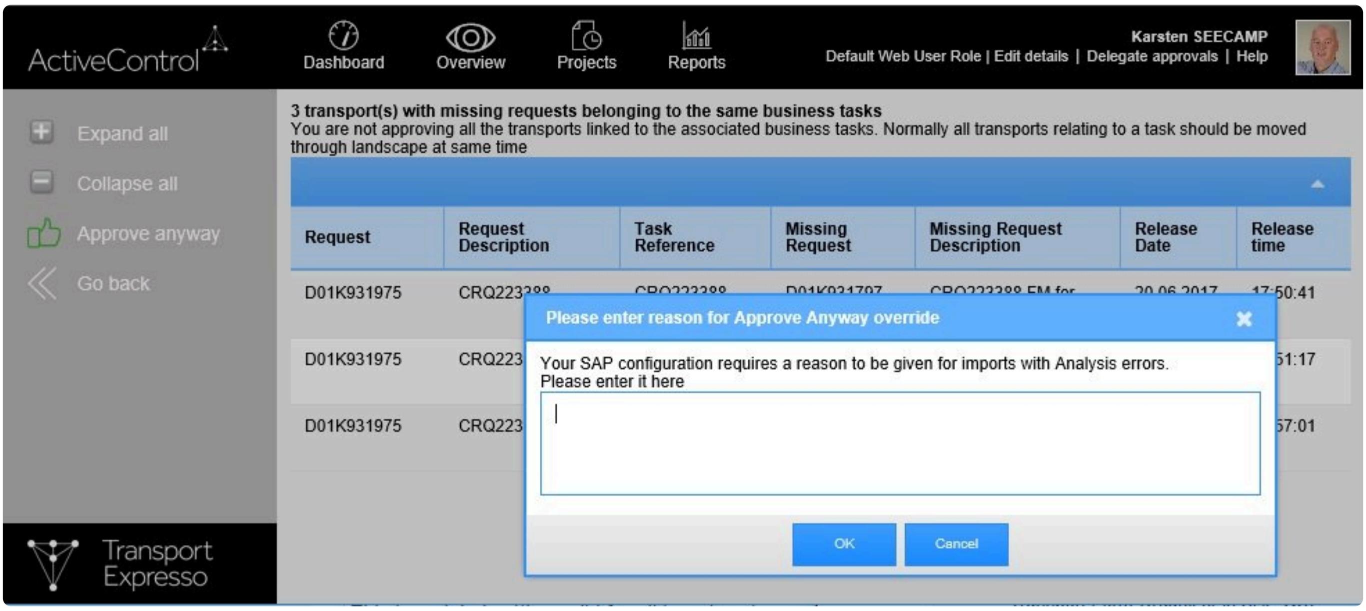
(i) If the new configuration option is left unchecked, then Test Queue sign-offs will operate on Business Task level.
Only users assigned to the Business Task will be able to do a “Save and Approve” in the Test Queue.

(ii) Partial testing can only be done on transports that you own.
(iii) Partial testing can be done across Business Tasks, ie by selecting transport forms on different business tasks.

5.32. Comments on Approve Anyway

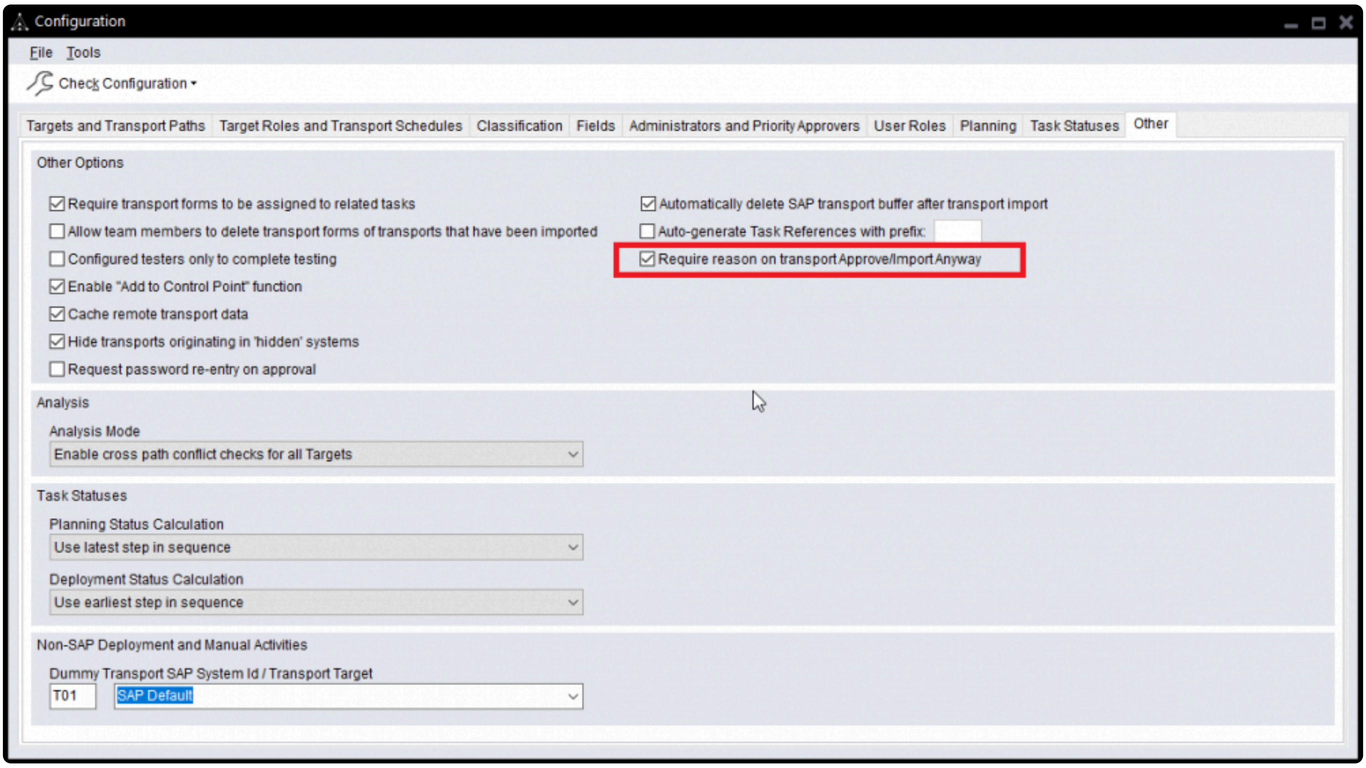
Ability to enter comments when selecting 'Approve Anyway' during analysis results
to audit why a user approved a change regardless of any findings by the analyzers.

A popup will ask the approver to enter a reason when the 'Approve Anyway' button is pushed.



Configuration

Add the flag Reason Apr. anyway = X in table /BTI/TE_CONFIG in the TE domain controller.
This is a global setting valid for all target systems.

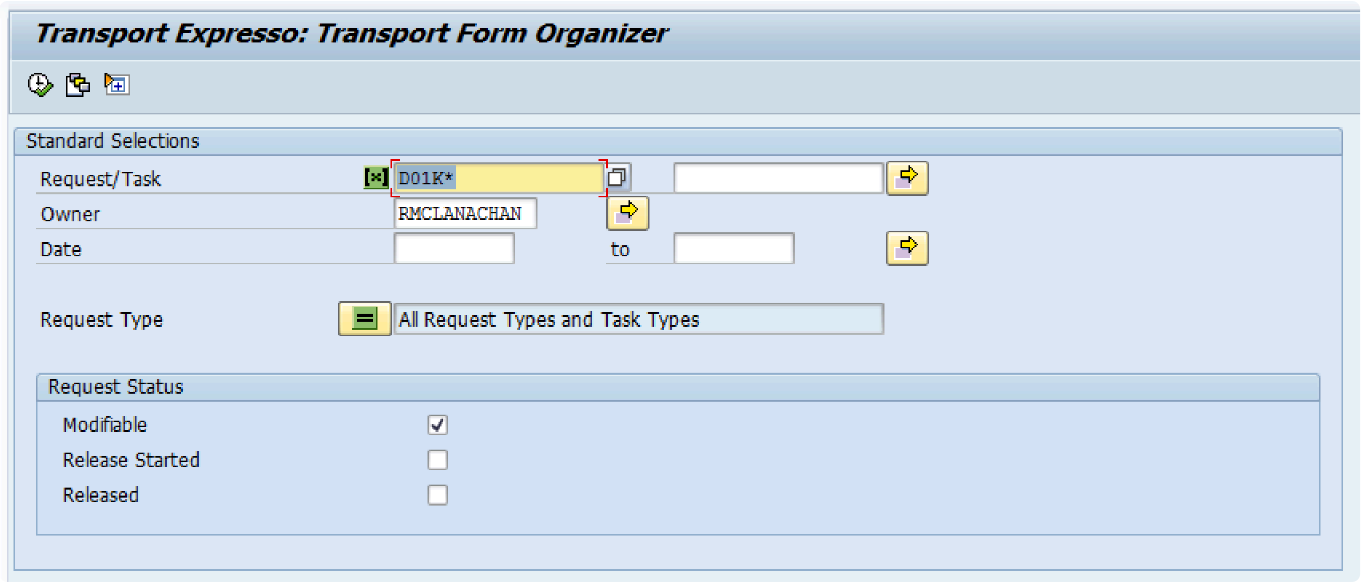


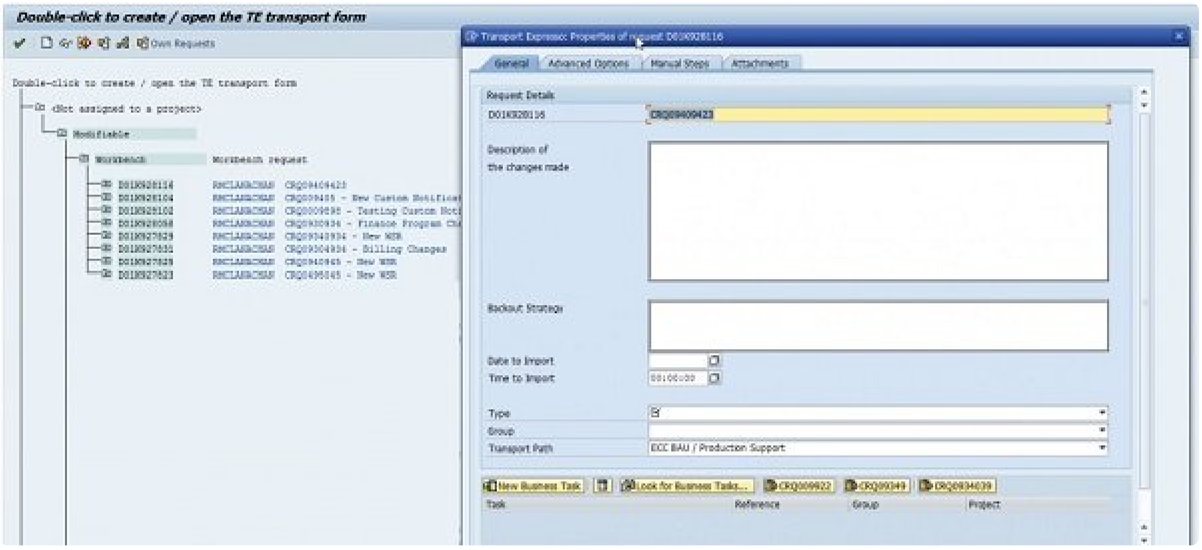
5.33. Transport Form Organizer in SAP GUI

Previous to ActiveControl 7.00, it was not been possible to reopen the TE Transport Form from within the SAP GUI after the underlying transport was released.

ActiveControl 7.00 introduces a new TE Transport Form Organizer screen that is accessed in the SAP GUI of the ABAP Development system via a new transaction and can be used to trigger the TE Transport Form screen of any released or modifiable transport without requiring the release authorisations. This can be used to populate the Transport Form at the start of the process (ie when the Developer or Functional Consultant has finished their work) or to update it later on in the process after the transport is released – for example if a Developer wants to add a Manual Step or Dependency to a Transport Form they completed earlier.

This functionality can be accessed via transaction: **/n/BTI/TE_TR_FORM**





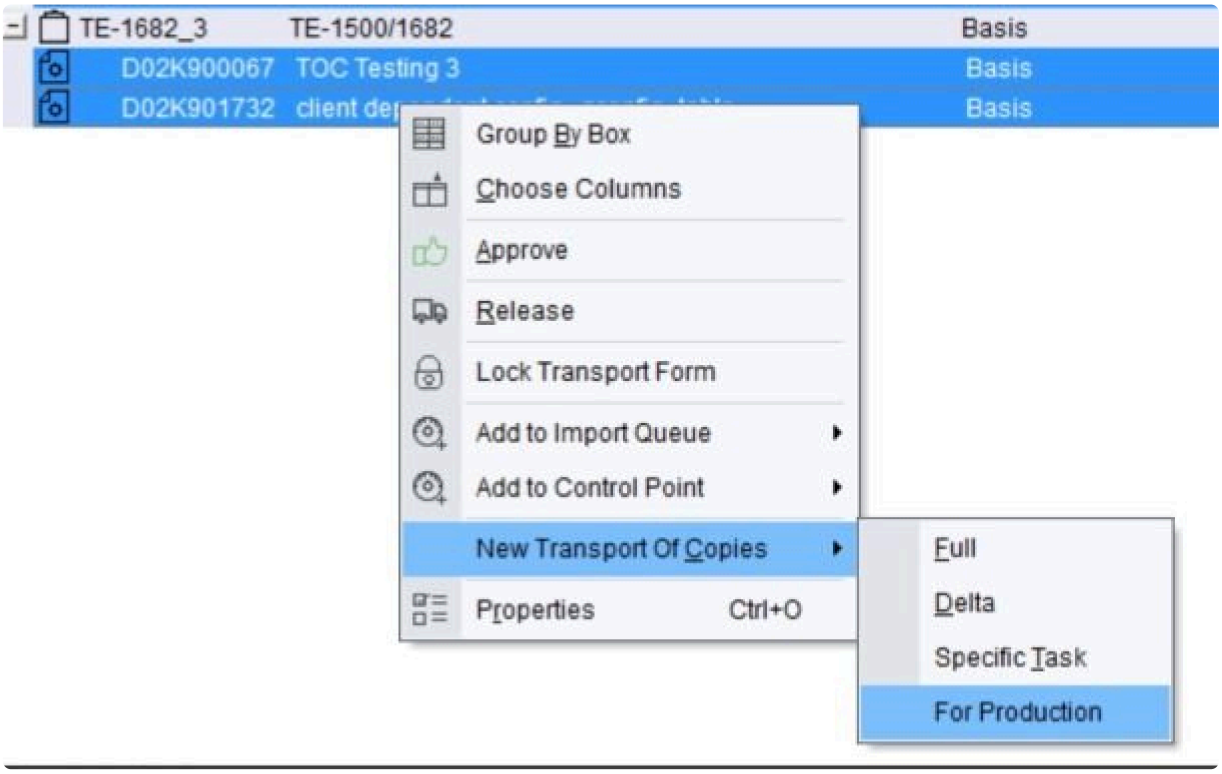
Double clicking a transport in the result view opens the existing transport form.
If no transport form assignment exists an empty form opens to be maintained.

Note that the use of this transaction will require a TE authorization role in the Development system to be assigned to the person
wanting to run it.
The authorisation is included in the single role /BTI/TE:CTS_USER .

5.34. Create production system TOC's

ActiveControl includes the ability to create Transport Of Copies (TOC) for deployment to Production. This can be used to reduce the number of transports being deployed to Production, and by extension, reduce the time it takes to deploy them.

Production TOCs are created in the TE Windows GUI. This is done by right-mouse clicking on the required transport(s) and selecting “New Transport of Copies” > “For Production”.



The new Production TOC behaves quite differently from the other TE TOC capability. Key points of note:

the TOC will be put in the same location as the original transports
the original transports are deleted from the location
if there is no user exit, a Transport Form is created automatically, which (i) ignores the task selections made in the GUI (ii) assigns the tasks of the original transports (iii) takes the TE Group and Type coming from /BTI/TE_TOCONFIG DEPLOYTYPEID and DEPLOYGROUPID
If there is a user exit, then creating and moving the TF will be handled by the exit
When a TOC Transport Form is deleted completely without being completed, the original transports are added back to the original location.

This functionality is intended only for Production deployments, and will only work if all the transports imported in QA but not in Production are merged into a single TOC. Side effects could happen if the TOC is created earlier in the path or some transports are excluded from the TOC (and also many of the TE analysers will not work correctly)

Configuration Steps

To configure Production TOCs, two configurations are required

1) a couple entries must be added in table /BTI/TE_TOCONFIG in the TE Domain Controller.

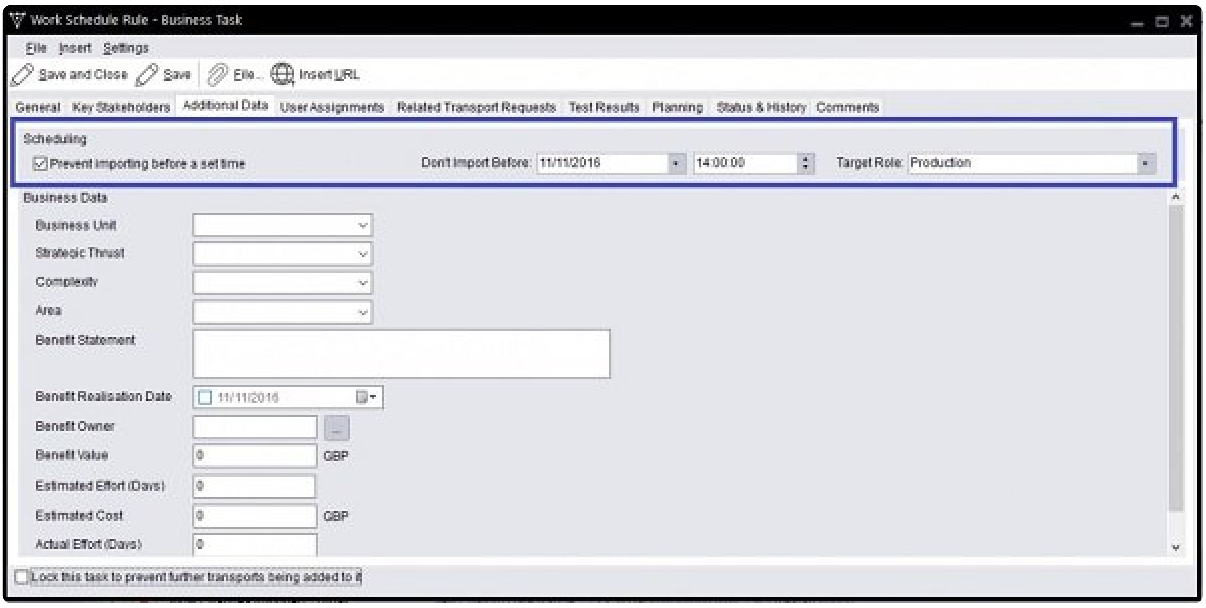
DEPLOYTYPEID: The “Type” to be used for the TOC Transport Form (from /BTI/TE_TYPE)
DEPLOYGROUPID: The “Group” to be allocated to to the TOC Transport Form (from /BTI/TE_GROUPS

2) the system in which the TOC will be created should be configured as a valid source system in the path (in the TE Windows GUI)

5.35. Future scheduled imports

ActiveControl 7.00 introduces the ability to forward schedule Transports into Production.

The scenario the new functionality aims to address is where a TE customer has a regular release cycle, but wants to delay specific changes until a specific date/time in the future after the next release. This can now be done via new options available on the TE Business Task ‘**Additional Data’ tab**.

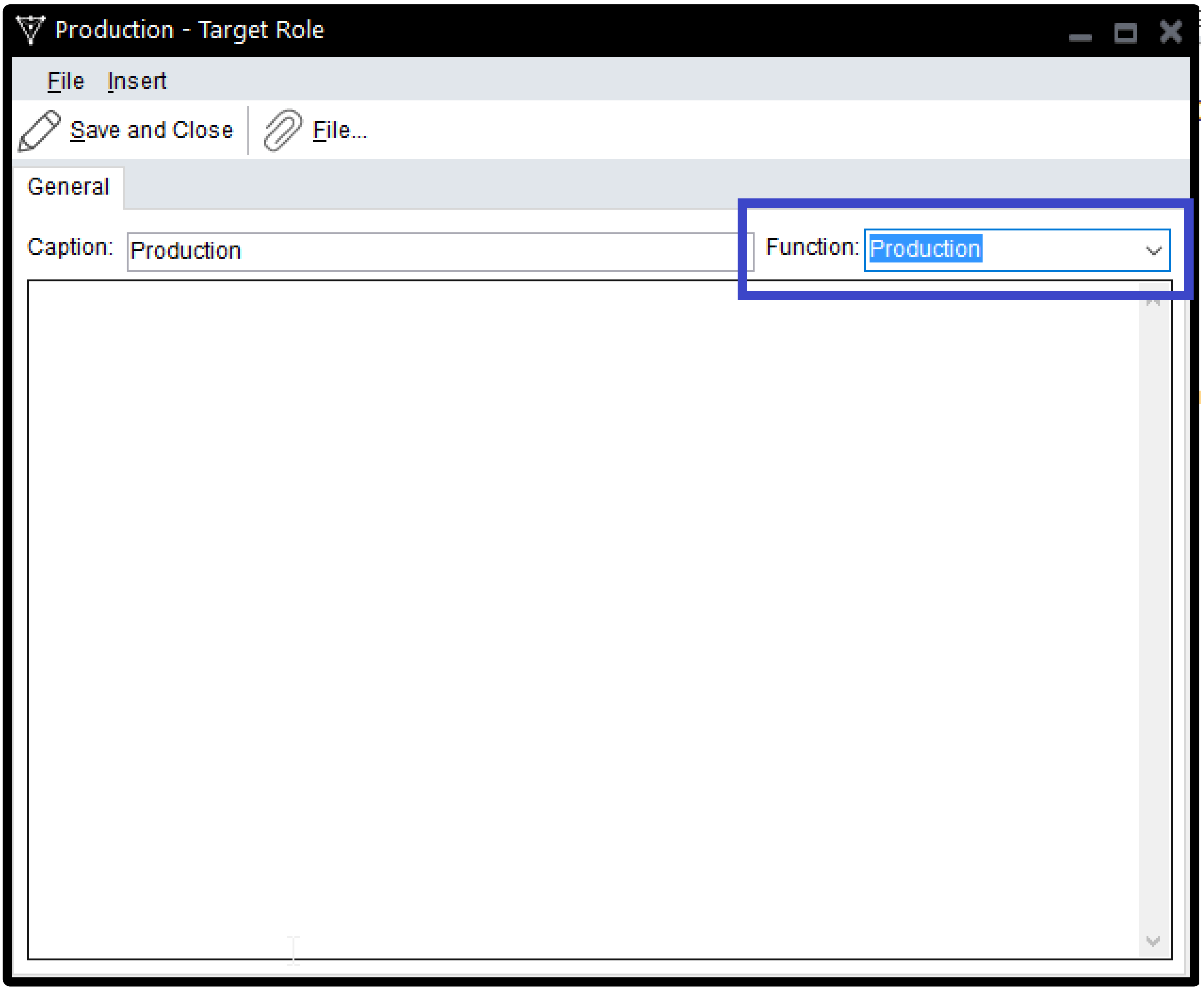


Note: Forward Scheduling is complete seperate to standard TE Schedules configured in the TE Windows GUI, and does not work in conjunction with any custom field based Selection Criteria rules that you may have setup. This means that if you setup a forward schedule, it will be imported at the specified future date/time, irrespective of any restrictions you have configured as part of standard TE Schedules.

Configuration Steps

A customers ‘Production’ Target Role must be assigned to a new ‘Production’ Function within Windows GUI Configuration.
Go to Tools – Configuration – Target Roles and Transport Schedules. If not yet done, create a role ‘*Production*’ with the Function ‘Production’ assigned.

It is this function that tells Transport Expresso which is your Production system. No other Target Roles need to be assigned to a Function. (the Development, Test and Merge functions are for future TE development, and are not currently used for anything)



5.36. Additional approvals based on specified critical objects in transports

ActiveControl 7.00 introduces the ability to force transports containing specific critical SAP objects (standard or custom) to stop for an additional approval in the workflow.

This new feature sits on top of the existing TE Risk Guard and TE Skipping functionalities.

Configuration Steps

1) Add the following four entries to **/BTI/TE_EXITC** table in the Domain Controller

/BTI/TE_EXIT_SAMPLE_0710

/BTI/TE_EXIT_SAMPLE_0740
/BTI/TE_EXIT_SAMPLE_0500
/BTI/TE_EXIT_SAMPLE_0505

2) Create Risk Groups in table **/BTI/TE_RISKG** for each grouping of approvals that you want.

For example

BT9001 – Security Objects
BT9002 – Basis Objects
BT9003 – Finance Objects

2) Create a new Risk Level for these objects in /BTI/TE_RISKL.

3) Add entries in table **/BTI/TE_RISKGOB** for each object you want to stop for additional approval. Use RISK LEVEL defined in Step (2)

4) Add new TE Control Point (ie Inbox or Outbox) where you want the additional approval to occur if the transport contains the objects defined in (4).

5) Add entries in table **/BTI/TE_RISKUSER** for who you want to be able to approve each Risk Group.

6) Add the Approvers in the TE Windows GUI configuration against the required target/control point.

7) Create new Skipping Rules.
(i) Add Skipping Rules in table /BTI/TE_SKIPCP in the Domain Controller for all Transport Form 'Types' to skip new Control Point.
(ii) Add Skipping Rules in table /BTI/TE_SKIPCP in the Domain Controller for all Transport Form 'Types' to NOT SKIP when they contain the Risk Groups created above – by adding in RISK_LEVEL that you defined in Step (2).

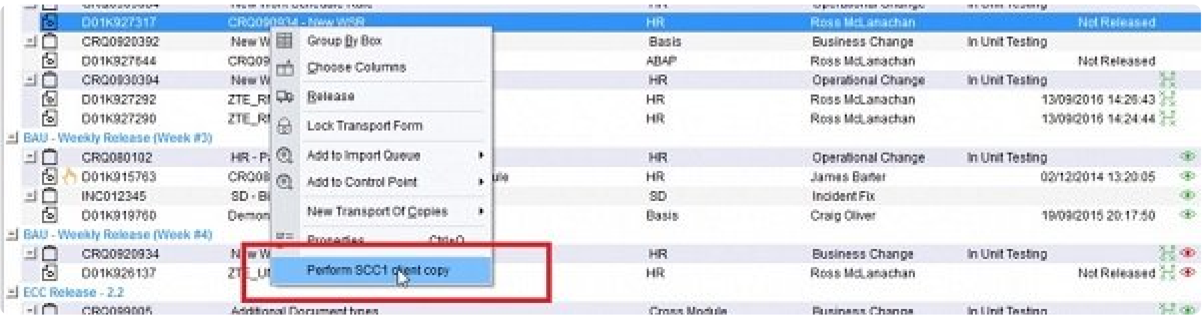
5.37. Automated SCC1 client copy

ActiveControl 7.00 introduces automated SCC1 client copy capability to get client-dependent changes into other clients.

The SCC1 functionality in Transport Expresso allows:

1) SCC1 to be done automatically to the configured Development system clients *at the point a TF is created* if required.
2) SCC1 to be done automatically to the configured Development system clients *at the point a Transport is released* if required.

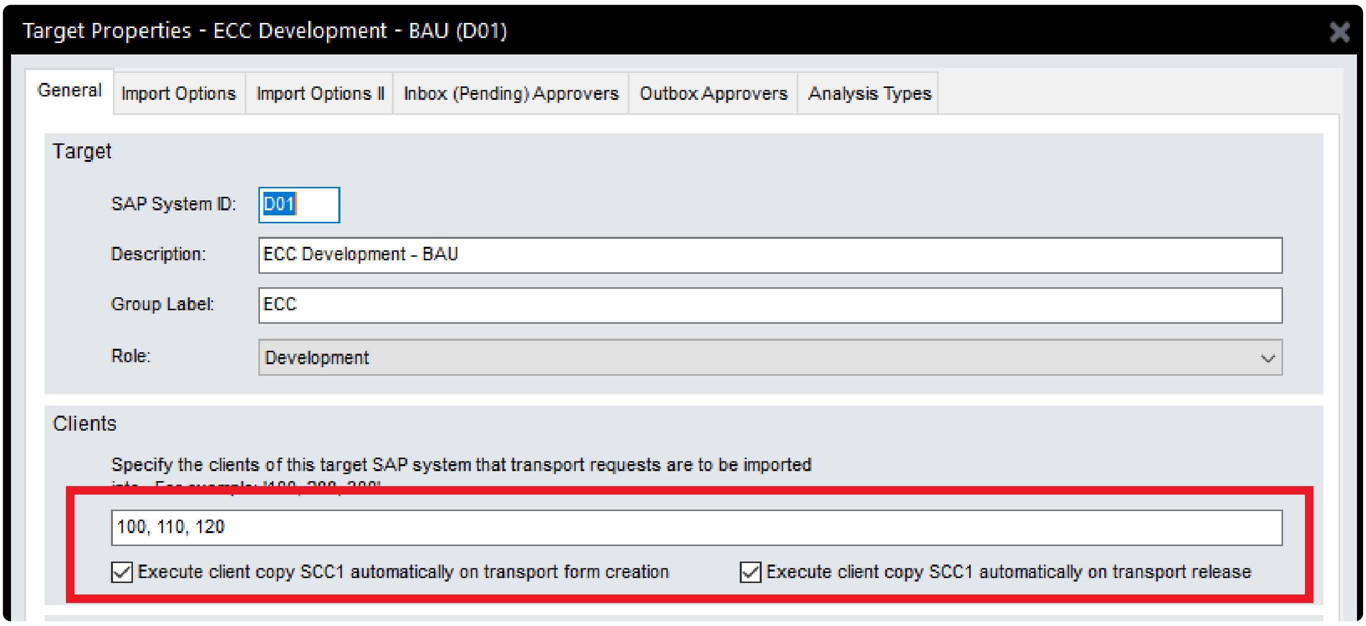
3) TE Users to perform a manual SCC1 via the TE Windows GUI (by right-mouse clicking on an individual transport)



Configuration Steps

SCC1 automation is configured within the Development target by the TE Administrator. New checkboxes enable automed SCC1 to be executed at the point a TE Transport Form is created and/or at the point the SAP Transport is released, depending on the individual customer's process.

The clients field in the TE Target determintes the clients into which the SCC1 will be done. It is not an issue to still configure the main Development client (ie the source client of the transport) in the client field.



Note: If multiple clients are adding in the Development target, then client dependant transport forms will be put in the Development system Import Queue. To avoid this, TE Skipping can be used to skip all Transport Forms past that Import Queue if required.

Authorisations

Please note that customers will need to add S_USER_AGR to the TE_RFC user role in development systems where SCC1 is used and they want to use SCC1 to copy roles across. In all other cases it's not needed.

5.38. Send analysis results to configured users

ActiveControl 7.00 introduces the ability to send specific analysis results to specific users via email.

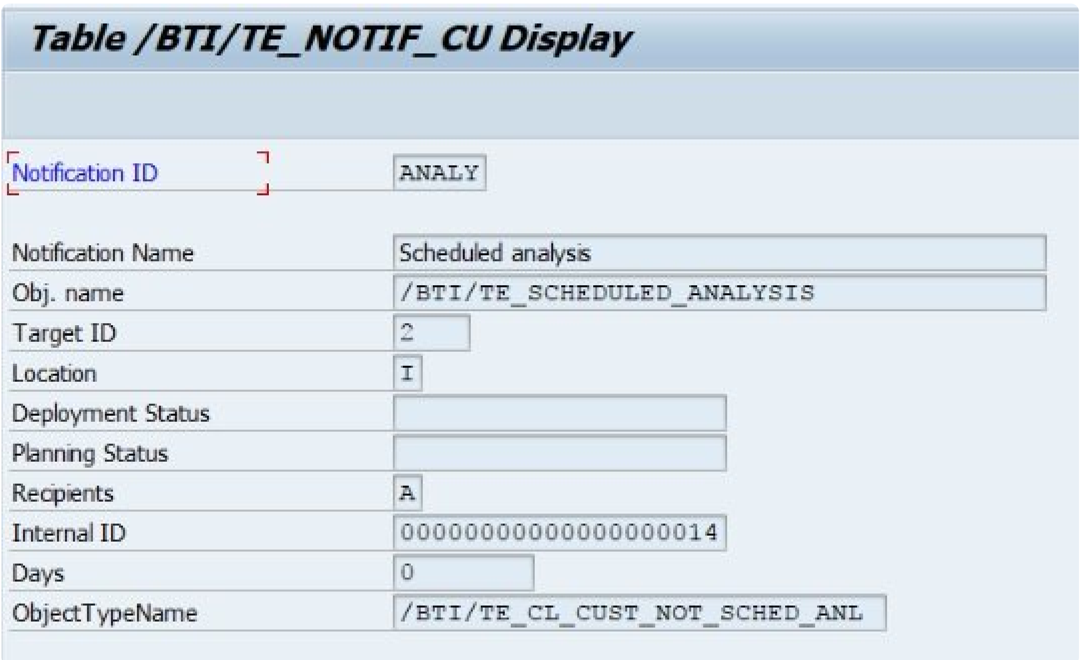
This functionality builds on the existing Custom Notifications functionality within the tool.

Configuration Steps

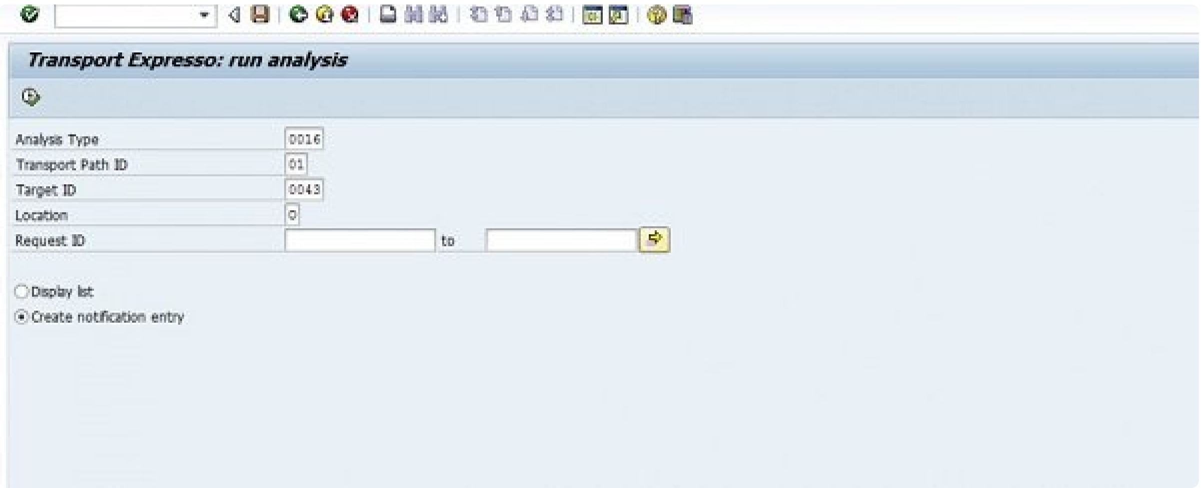
1) Switch on Custom Notification as part of your variant for program */BTI/ TE_RNOTIFICATION_ENGINE*.

2) Add your required notification in table /BTI/TE_NOTIF_CU using the standard

NOTIF HTML: The standard /BTI/TE_SCHEDULED_ANALYSIS HTML template should be used
HANDLING CLASS: /BTI/TE_CL_CUST_NOT_SCHED_ANL



3) Schedule a variant of program /BTI/TE_RANALYSE_REQUESTS_LOC for the specific analyser/path/ location for which you want email to be sent. Flag 'create notification entry' must be set.

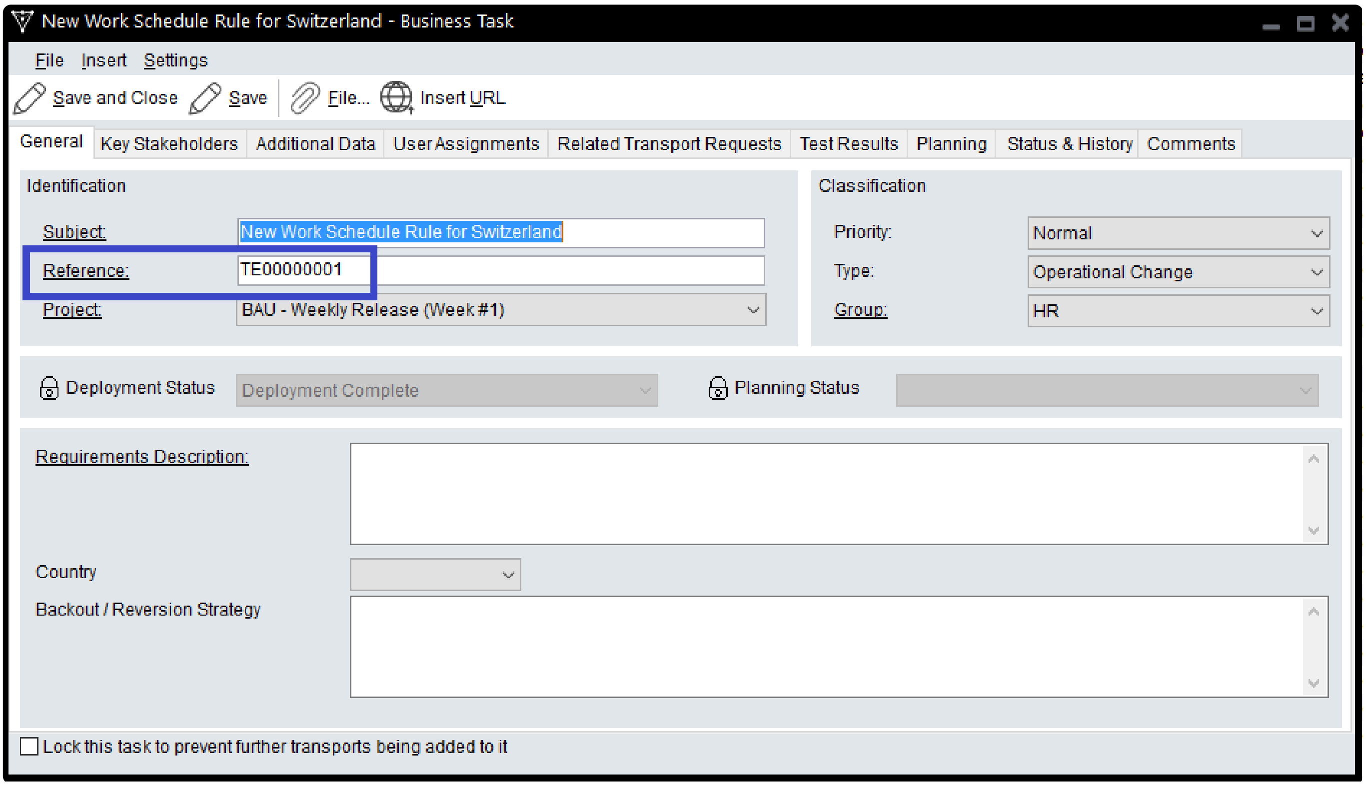


5.39. Auto generate task reference number

As of ActiveControl 7.00, it is now possible to prepopulate the Reference field on the TE Business Task with a sequential number.

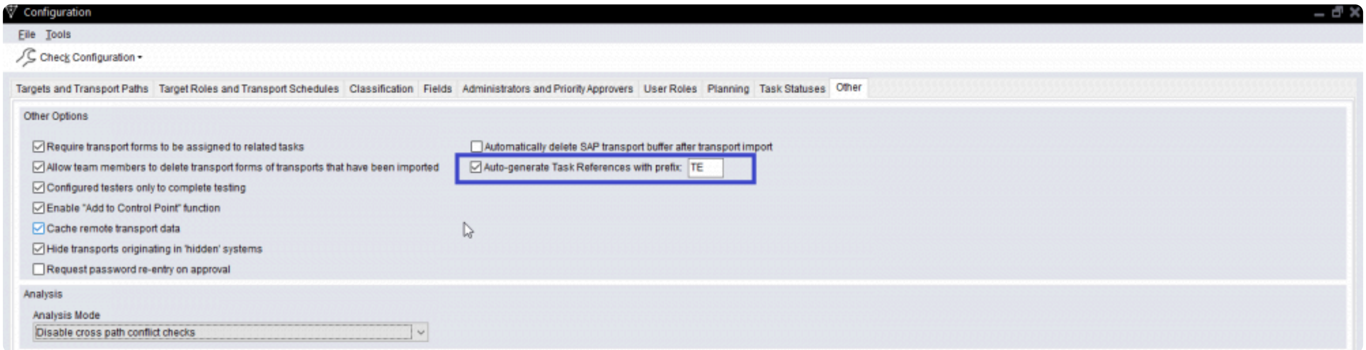
This is useful for customers that do not use another Change Management ticketing tool, and are looking for a way to generate a unique identifier for each Business Task within Transport Expresso.

It is possible to configure a 3-character prefix for the sequential number.



Configuration Steps

TE auto-referencing is setup via the **Other** tab in the TE Windows GUI configuration screen.



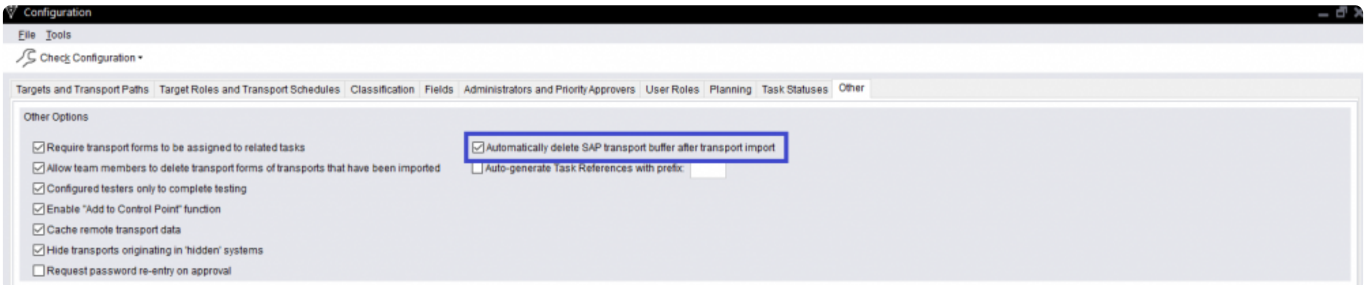
Please note that you need to 'tab' off the prefix field after entering the prefix value for it to be saved.

5.40. Delete buffer after transport import

ActiveControl 7.00 allows you to automatically delete transports from the buffer when they are imported via Transport Expresso. In previous versions of Transport Expresso, the transport was left in the SAP buffer, some TE customers felt this added risk of a transport being accidentally re-imported later via STMS manually.

Configuration Steps

TE buffer deletion is setup via the **Other** tab in the Windows GUI configuration screen. it is a global setting across all SAP systems being managed via Transport Expresso.



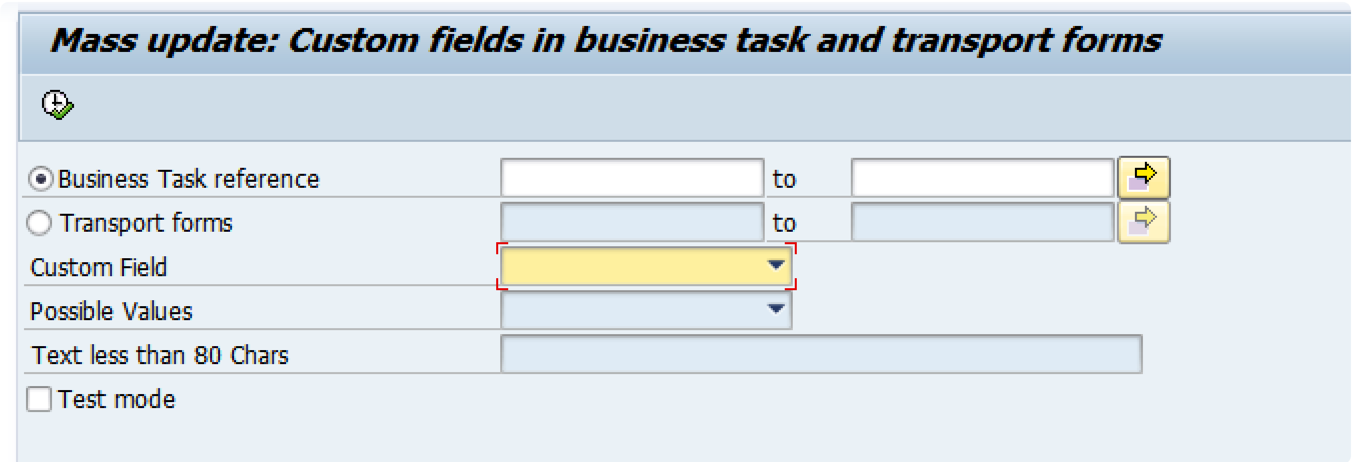
5.41. Mass updates to custom fields

ActiveControl 7.00 introduces a new backend program that can be used to perform mass-updates on custom fields on Business Tasks or Transport Forms.

One example of where this can be useful is if you are maintaining a custom field on Business Task for the Production Release change ticket against which the Business Task will be delivered. Using this new program, you can update the ticket number on the selection of Business Tasks that are being delivered as part of that Production Release.

This new program is run via transaction /n/BTI/TE_MASSUPD_FLDS in the TE Domain Controller.

It is possible to perform a mass update on (i) Text Fields, (ii) Drop Down and (iii) Selection List custom fields.



6. Deployment Considerations

In order to ensure a smooth deployment and adoption of Transport Express, it may be helpful to give the following areas particular attention before attempting to deploy Transport Expresso.

6.1. Windows Client and RFC

The Transport Expresso Windows client software communicates with the Transport Expresso domain controller via SAP's remote function call (RFC) protocol. RFC is a TCP/IP sockets-based protocol that uses TCP ports in the range 3300-3399.

The specific port number that is used will depend on the application server configuration of the SAP system that you select as the Transport Expresso domain controller. If we assume that the chosen SAP system has only one application server with system number 10, then the TCP port number 3310 will be used. In this manner, the RFC protocol works in the same manner as the SAPGUI, except that it utilises the port number range 3300-3399 instead of the port number range 3200-3299. It follows that the network configuration must allow the necessary port numbers to be used.

6.2. E-mail Integration

Transport Expresso relies upon SAP's support for SMTP integration with e-mail servers to deliver e-mail notifications, such as changes requiring approval, direct to e-mail clients such as Microsoft Outlook.

As e-mail notifications are sent from the Transport Expresso domain controller, TE only requires this SAP system to have a working SMTP mail server connection. SAP systems based on Web Application 6.20 or later will find that the SAPconnect functionality of SAP comes with built-in support for SMTP mail integration. SAPconnect functionality is administered using SAP transaction SCOT.

In addition, the address data for each SAP user ID within the domain controller should be associated with an Internet e-mail address. If this is not the case, then the e-mail notification for that user will be delivered via the SAPoffice Business Workplace inside the Transport Expresso domain controller.

6.3. TMS Configuration

Transport Expresso does not require changes to the TMS configuration, particularly the existing transport layers, transport groups and transport routes do not need to be changed – however note that Transport Expresso does not use this configuration. Also please note that there is absolutely no requirement for the Transport Expresso domain controller to be the same SAP system as the TMS domain controller – in fact a single Transport Expresso domain controller can manage transports for multiple TMS domains.

In order to maintain tidy import queues within TMS, it can be useful to change the transport routes for transportable changes to direct changes to a dummy virtual system. This is not a requirement, however it can prevent confusion caused by standard TMS functionality adding transport requests to the TMS import queue of recipient SAP systems in advance of when Transport Expresso determines the changes ready to be imported.

If you wish to use Transport Expresso backup functionality, then you must define an additional virtual system called BAK, as described in the previous section Backing Out Changes.

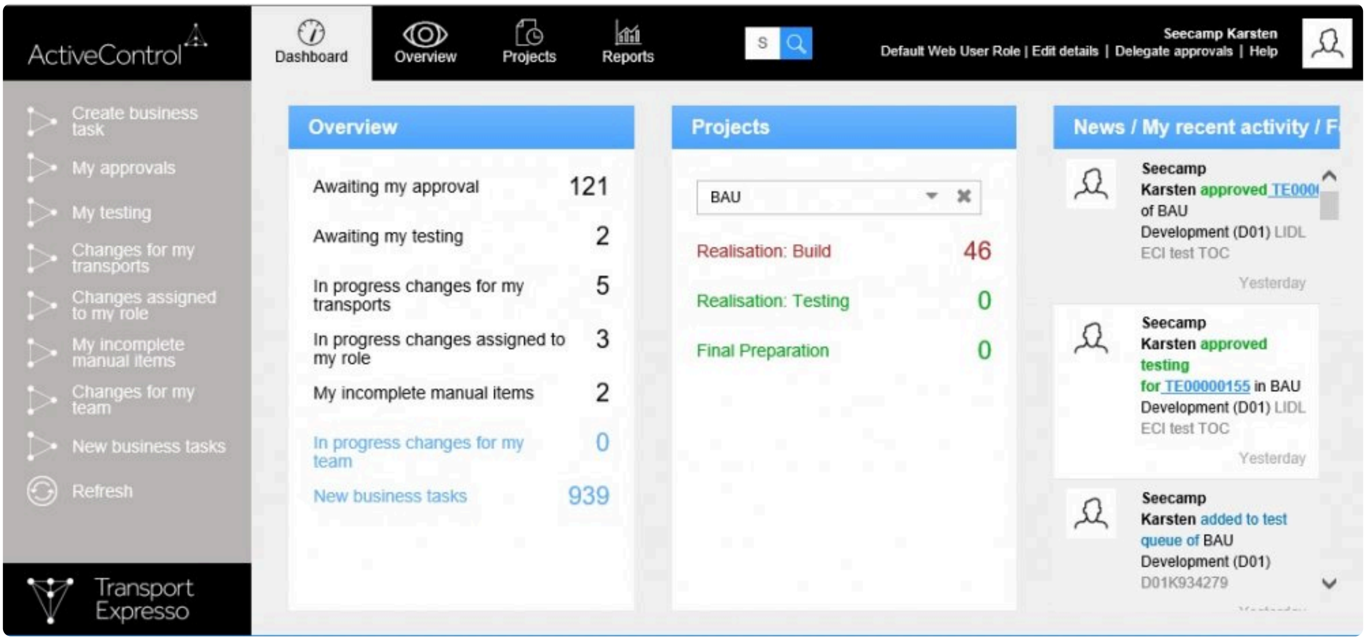
Finally, if you wish to import changes into other clients of the same (development) system in which the changes were originally made, then you should enable TMS' extended transport control. This is not a requirement so much of Transport Expresso, but is required to avoid the unnecessary attempt to re-import the client independent content (which would usually result in an import error).

6.4. Web User Interface

Transport Expresso comes pre-packaged with a web-interface that allows access to key functionality within a web browser. It provides a dashboard based overview of projects and items requiring action allowing the user to easily view and analyse their current workload.

Users have access to the following functionality within the web interface:

- Visibility and analysis / approval / rejection of your items that require approval
- Visibility and test results entry of your items that require testing
- Visibility of tasks for your team / project
- Visibility of the status of selected projects by phase (see Project Management Tracking below)
- Ability to drill-down / filter the above items by project, path & target / location, deployment status, planning status, group, type and priority
- Ability to search for tasks and transports
- A news feed to show recent events in Transport Express
- A view of your own recent activity
- Ability to view and change task data
- Ability to view the transports allocated to tasks



6.4.1. BSP Services

The Web-interface runs out of the box from the Transport Expresso domain controller.

You will need to activate the following services via the transaction SICF.

- default_host -> BTI -> te_web_services
- default_host -> BTI -> tessocntl
- default_host -> sap -> bc -> bsp -> bti -> te_bsp_new
  Other general BSP services may also need to be activated to enable the web interface to work.
- All subnodes in default_host -> sap -> public -> bsp -> sap

The following may also be required to enable the TE Reports to work in the Web UI:

- default host -> sap -> bc -> gui -> sap -> its -> webgui

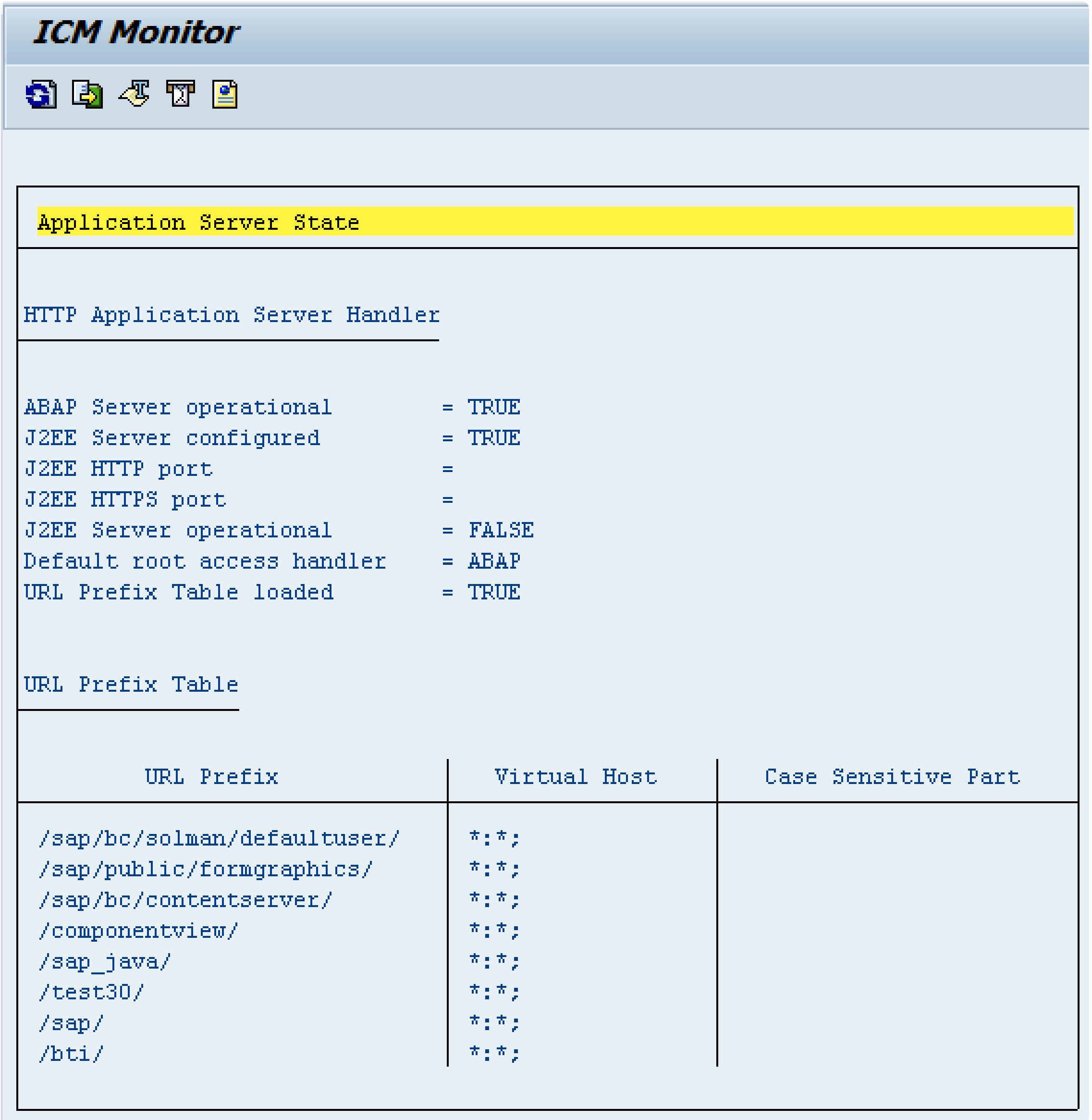
By activating the services, this exposes the Transport Expresso web-interface via the HTTP protocol to the Transport Expresso domain controller server.
Note:

- If the TE Domain Controller system is setup as a dual stack system (system/type = DS) then by default all /sap URLs get directed to the ABAP stack whereas everything else is sent to the Java stack.

The /bti URLs need to be added to the ICM URL prefix table so the Transport Expresso web UI is

directed to the ABAP stack. This is done in the ICM config transaction SMICM.
This can be found in the following possible menu paths:

- Goto -> HTTP Server -> Load URL Prefixes
- Goto -> HTTP Plug-In -> Application Server -> Load URL Prefixes
  In both cases above use the Display Data option to view the current settings. /bti/ should be displayed in the URL Prefix Table:



Once activated, you can test the service to determine the URL:

- http://:80/sap/bc/bsp/bti/te_bsp_new/index.html
  You will be prompted for a logon to the Transport Expresso domain controller SAP system. Use your SAP username and password.
  Once logged on, you will be able to access the available functionality and this can be used

simultaneously with the Transport Expresso windows client.

Note:

- For Single Sign On (SSO) rather than using the index.html page above please use the main.html page instead as this will bypass the login screen and use the current user logon ticket.

6.4.2. System messages

It is possible to issue system messages to all users in the web UI News section via table **/BTI/TE_SYSMESS**. This can be used to inform users of a system outage or other event. The start and end dates/times indicate when Transport Expresso will show the relevant message.

The web user interface requires that a number of additional new tables be maintained with data in order for users to take advantage of the functionality.

6.5. Web UI Setup

By default all users are allocated with the **Default Web User Role** which provides access to the default actions and metrics. This controls which actions and metrics the users sees in the web UI.

By default the ones shipped with Transport Expresso are:

Actions:

- View all changes awaiting my approval
- View all changes awaiting my testing
- View all my in progress changes
- View all in progress changes for my team

Metrics:

- Awaiting my approval
- Awaiting my testing
- My in progress changes
- In progress changes for my team
- In progress changes for project

To maintain other roles to alter the actions and metrics that are available to users please see tables:

- **/BTI/TE_WEBUICFG**: General web UI parameters / config table
- **/BTI/TE_USERPREF**: Web UI User preferences table
- **/BTI/TE_ROLEACT**: Role actions table to link user roles to the default actions
- **/BTI/TE_ROLEMET**: Role metrics table to link user roles to the default metrics

- To enable the "In progress changes for my team" each user will need to be allocated to the task groups that represent their team. This will then allocated all tasks for those groups to the team. (See table **/BTI/TE_USERGRPS**)

- If user pictures are required these can be uploaded into the Transport Expresso Domain Controller system. This will then automatically show the user picture in the screen header, news items, recent activity, task list and task details views. See the instructions for the USERPIC_PREFIX field in the **/BTI/TE_WEBUICFG** table.

*In addition a new background job is needed to generate data for the web UI News and My Recent Activity feeds. (See Background Jobs)

By default the primary tester of the task is designated as the task owner unless a user role is attached to the task to override this. See the details for the TASKOWNER_ROLEID field in the */BTI/TE_WEBUICFG table.

The Projects views will show project management information for projects where phase data has been maintained. If nothing is maintained for a project the message "No phase data exists for the selected project" will be displayed. To maintain the data use tables:

- **/BTI/TE_PHASE**: Project phases table
- **/BTI/TE_PHASSTAT**: Assign task statuses to the project phases
- **/BTI/TE_PRJPHASE**: Assign project phases to a project along with start/end dates

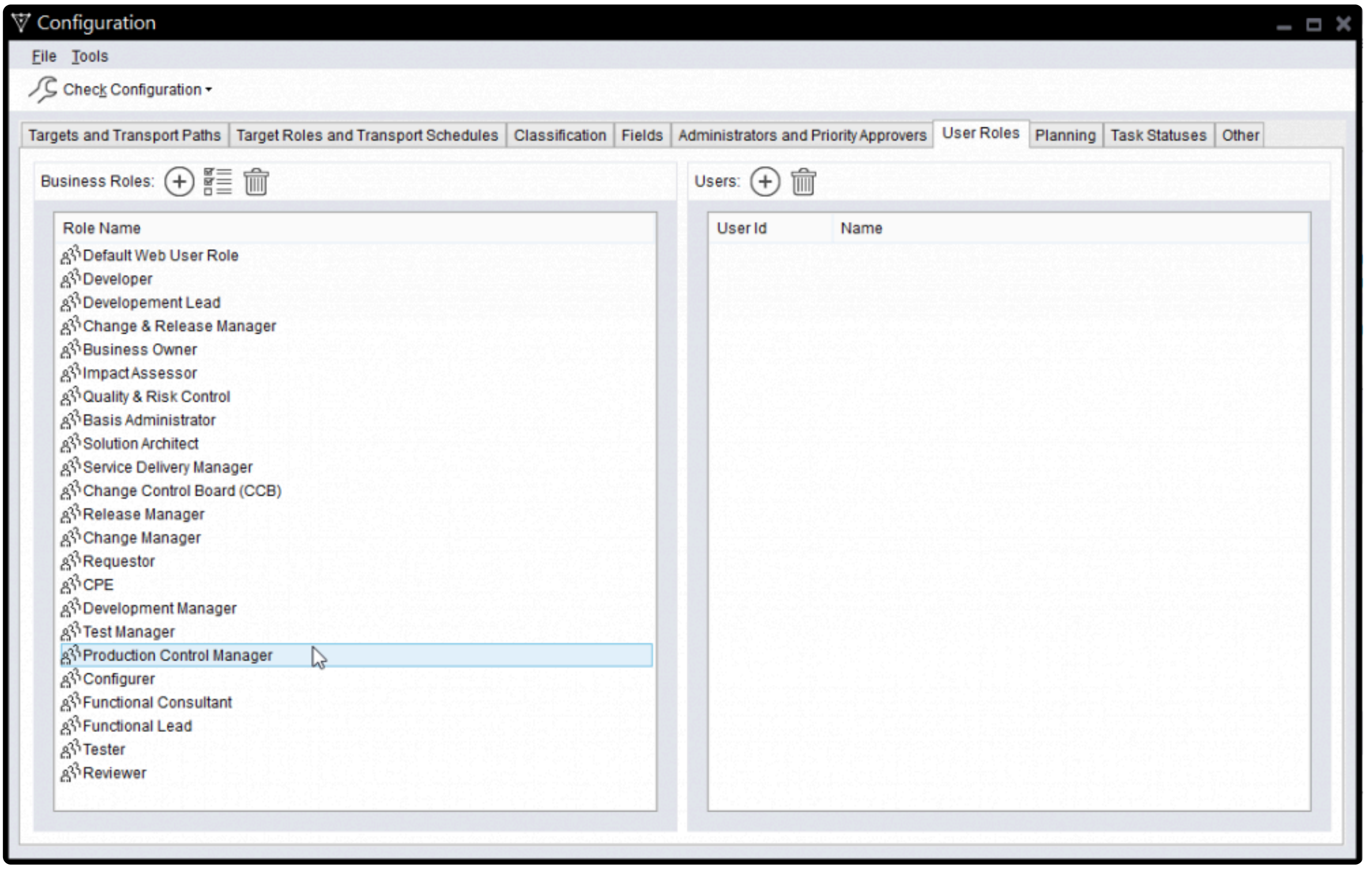
6.6. Web UI Tables

All have Table Maintenance dialogs.

/BTI/TE_WEBUICFG	**General web UI parameters / config table**
Field	Description
GENERIC_USERPIC	Name of generic user picture (/BTI/TE_WEBUI_USER_PIC_GENERIC)
TE_USERPIC	Name of Transport Expresso user picture (/BTI/TE_WEBUI_USER_PIC_TE)

USERPIC_PREFIX	Name of user picture prefix. In order to show user pictures in the web UI the images need to be uploaded and stored on the TE domain controller via transaction SMW0. Choose option “Binary data for WebRFC applications” option. Each user will require an entry with an uploaded user picture and a naming convention should be used so they all have the same prefix ((e.g. ZTE_WEBUI_USER_PIC_). It is mandatory that the user ID follows the name prefix otherwise the user pictures cannot be located by TE. E.g. for user TEUSER it would need to be ZTE_WEBUI_USER_PIC_TEUSER
USERPIC_URLPREFX	URL prefix for user picture (/bti/ te_web_services?action=GETUSERPICTURE&uname=)
DEFAULT_ROLEID	ID of the Role to be used for all users if one is not allocated individually in /BTI/ TE_USERPREF Role ID 00000000000000000000 (Default Web User Role) is delivered as standard.
TASKOWNER_ROLEID	ID of the Role to be used to default the task owner. Based on the user roles defined in /BTI/TE_ROLEU in the TE config “User Roles” tab. A “Task Owner” role could be specified and attached to each TE task. This can then be configured in this field for use in the web UI. If a role is specified here this will be automatically attached to all tasks when they are created and assigned with the user who is creating the task. The default tester of the task is designated as the task owner if not role is specified here to override this.
NUM_NEWSITEMS	Number of news items to display in the “News” feed. The default is 50
NUM_RECENCTACT	Number of items to display in the “My recent activity” feed. The default is 50
TL_GROUPBYID	Default task list group by option for all users
EXCLUDE_COMPLETE	Exclude tasks where the deployment status is “Deployment Complete” from the task metrics
INC_CURUSER_NEWS	Include the current user activities in the “News” feed. If not set the logged in user activities will not be shown in the news as they can be viewed in the “My recent activity” feed anyway

The user roles are maintained in TE config as follows. To change the description of the “Default Web User Role” please maintain this here:



/BTI/ TE_USERPREF	**Web UI User preferences table**
Field	**Description**
UNAME	User name
UIROLEID	ID of the default role to be used for the user in the web UI. Based on the user roles defined in /BTI/TE_ROLEU in the TE config “User Roles” tab If this is not specified, the role in /BTI/TE_WEBUICFG-DEFAULT_ROLEID will be used
DB_FILTERID	Last selected filter on the Dashboard Overview screen (auto populated by TE)
DB_PROJECTID	Last selected project on the Dashboard Overview screen (auto populated by TE)
PM_FILTERID	Last selected filter on the Dashboard Projects screen (auto populated by TE)
PM_PROJECTID	Last selected project on the Dashboard Projects screen (auto populated by TE)
TL_GROUPBYID	Last selected group by on the Task List screen (auto populated by TE)

/BTI/ TE_USERGRPS	**User groups table to allow users to be assigned to teams based on the task group**
Field	**Description**
UNAME	User name
TASKGROUPID	Task Group ID of the task group that the user is to be assigned to. This will then associate all tasks that have this group to the user’s team

/BTI/ TE_ROLEACT	**Role actions table to link the user roles to the default actions**
Field	**Description**
ROLEID	ID of the role to be used. Based on the user roles defined in /BTI/TE_ROLEU in the TE config “User Roles” tab. Entries for Role ID 00000000000000000000 (Default Web User Role) are delivered as standard and can be copied to create further roles
ACTIONID	The Action Id of the actions to be assigned and displayed for the user role
SEQUENCE	The sequence the actions should be displayed in

/BTI/ TE_ROLEMET	**Role metrics table to link the user roles to the default metrics**
Field	**Description**
ROLEID	ID of the role to be used. Based on the user roles defined in /BTI/TE_ROLEU in the TE config “User Roles” tab Entries for Role ID 00000000000000000000 (Default Web User Role) are delivered as standard and can be copied to create further roles
METRICID	The Metric Id of the metrics to be assigned and displayed for the user role
SEQUENCE	The sequence the metrics should be displayed in

/BTI/TE_PHASE	**Project phases table**
Field	**Description**
PHASEID	Unique Id for the project phase
PHASE_DESC	Description of the phase (e.g. Blueprint, Realisation, Final preparation, etc.)

/BTI/TE_PHASSTAT	**Table to assign the task statuses to the project phases**
*Field	*Description
PHASEID	Id for the project phase
STATID	Id for the relevant task deployment or planning status
STATTYPE	Selection of deployment or planning status

/BTI/ TE_PRJPHASE	**Table to assign the project phases to a project along with the start an end dates**
Field	**Description**
PROJID	Id for the relevant project
PHASEID	Id for the project phase
SEQUENCE	The sequence that the project phases should run in
START_DATE	The start date for the project phase

END_DATE	The end date for the project phase

6.7. Web UI Background Jobs

In order to generate the data for the TE Web UI **News** and **My Recent Activity** feeds a background job is required to run every 5 or 10 minutes to execute program /BTI/TE_RUNEWS_UPDATE.

In the program variant the “No. of days to retrieve events” parameter should specify the number of days that the News / My Recent Activity is required to be reported for. The default is 60 days but in reality this would be much less.

6.8. Forced Delegation

Transport Expresso includes functionality to allow users to delegate their approvals to another user, for example, when a user goes on holiday/vacation.

Delegation can be done in the TE Windows GUI and in the TE Web UI by authorised users.

This same functionality can also be performed by Transport Expresso Administrators. The most common use of this “forced delegation” is when an approver goes away on holiday/vacation (or is away due to sickness) and thus fails to turn on the delegation for themselves.

In this case, the course of action is for one of the TE Administrators to perform a “Forced Delegation” whereby you select the approver who is away on holiday and then select a user (or users) who will be performing the delegation in their place.

6.9. User Exits

The following user-exits are available to enhance Transport Expresso for specific requirements of the end client:

User Exit	Description
Validation during saving of a Transport Form **(Exit Identifier 0010)**	When a transport form is being saved by the user, this user-exit enables one to do whatever is necessary (for example validation of the input data).
Validation of a locked/unlocked Transport Form **(Exit Identifier**	When a transport form is locked or unlocked by the user, this user-exit enables one to perform any required function.

0011)	
Transport Form creation (Map User) **(Exit Identifier 0012)**	Can be used to map users during Transport Form creation process (incase userid different in Development and Domain Controller)
Get extended task list item **(Exit Identifier 0020)**	When searching for a Task in the “Task Search” dialog, it is possible to retrieve other tasks from, for example, external systems in this user-exit.
Action Confirmation **(Exit Identifier 0030)**	Implement this exit to override whether a particular action within Transport Expresso requires confirmation, as well as the behaviour of the confirmation dialog. Possible actions are: A = Approve a task (or set of tasks) I = Import a transport request (or set of transport requests) T = Save test results and finish testing Errors can be issued by setting the return structure Y_RETURN by calling function module /BTI/TE_RETURN_GET, passing in the message details: message type, message ID, message number and variables. Set parameter XY_CONFIRMATION_REQUIRED=X to force Transport Expresso to ask the user to confirm their actions.
Validation during saving of a Task (Create or Change) **(Exit Identifier 0040)**	This user-exit is called during the creation or changing of a Task (after the save button is selected). Refer to User Exit 0620 for a user-exit prior to display of the Task. The mode is passed through (Create or Change) as well as the values that have been entered. Based upon this, the user-exit can issue a message to the user to prevent the creation/ change of the Task or add additional data behind the scenes. It should be noted that this user exit cannot be used to update custom fields.
Validate transport creation from task **(Exit Identifier 0041)**	This user exit can be used to validate the populated Transport Form from Business Task information.
Check for duplicate task reference during saving of a Task (Create or Change) **(Exit Identifier 0045)**	This user-exit is called during the creation or changing of a Task (after the save button is selected). A flag can be set to indicate whether the task reference field can accept duplicates values or whether it must be unique.
Dependency Check **(Exit Identifier 0050)**	This user exit is called during dependency checking.
Transport import **(Exit Identifier 0060)**	This user-exit is called during the transport import process. It allows specific actions to be carried out during the import process.
Change clients during import process **(Exit Identifier 0065)**	This user exit is called during the import process to override the clients used for client dependent imports. By default TE will import into all configured clients for the relevant target but this user exit allows the list to be adjusted if there are any special rules. E.g. only import transports originating in client 200 into client 210 and ignore clients 100 and 110
Non SAP	Can be used to deploy non-SAP changes from within ActiveControl

Change Import **(Exit Identifier 0068)**	
Merge request creation in participating systems **(Exit Identifier 0070)**	This user exit is called at the point where either a merge request or a backup request is to be created in a participating system. It is possible to override the standard functionality for creating these requests within this user exit.
Merge request processing **(Exit Identifier 0071)**	This user-exit is called during the processing of merge transports. This can be used to influence how the merge requests are created. For example, the standard implementation can be used to create a new merge transport for every source transport being merged.
Set form fields for merge **(Exit Identifier 0072)**	This user-exit can be used to set fields for auto merge form creation. It has been largely replaced by configuration options within the Windows GUI in later versions of Transport Expresso and ActiveControl
Task creation webservice preprocess **(Exit Identifier 0080)**	This user-exit can be used to perform webservice pre-processing during Business Task Creation
Task read webservice postprocess **(Exit Identifier 0081)**	This user-exit can be used to perform webservice post-processing during Business Task read
Task change webservice preprocess **(Exit Identifier 0082)**	This user-exit can be used to perform webservice post-processing during Business Task change
Task test results webservice preprocess **(Exit Identifier 0083)**	This user-exit can be used to perform webservice pre-processing during Test Results entry
Task approval webservice preprocess **(Exit Identifier 0084)**	This user-exit can be used to perform webservice pre-processing during Business Task approval
Task get transports WS postprocess **(Exit Identifier 0085)**	This user-exit can be used to perform webservice pre-processing to get Transport list from Business Task
Integration conversions **(Exit Identifier 0090)**	This user-exit can be used to perform conversions as part of Integration
Integration notifications	This user-exit can be used to perform alternative notifications as part of Integration

(Exit Identifier 0091)	
Load User List **(Exit Identifier 0100)**	Implement this exit to override the list of users that will appear in Transport Expresso when choosing administrators, approvers and managing the list of users whose transports are being displayed. The main user details like user ID, first / last name, email address, etc. can be returned.
Load Test User List **(Exit Identifier 0110)**	Implement this exit to override the list of users that will appear in Transport Expresso when choosing test users within tasks. The main user details like user ID, first / last name, email address, etc. can be returned.
Before Transport Release: Runs in target **(Exit Identifier 0120)**	This exit can be used to perform target activity prior to transport release.
Extra validation in Inline Risk Analysis **(Exit Identifier 0130)**	This exit can be used to perform additional validation during the conflict analysis process.
Integration exit: Mapping before sending message **(Exit Identifier 0200)**	This exit can be used to perform mapping activity prior to sending Integration message.
RFC destinations **(Exit Identifier 0310)**	This exit can be used to manipulate the name of the RFC destination that is used when connecting to remote systems. For example, it can be used to override the default destination based on the system ID to point to an alternative system.
Modify list of approvers **(Exit Identifier 0500)**	This exit can be used to modify list of approvers for web gui and notification engine, prior to Delegation.
Filter transports for approval **(Exit Identifier 0505)**	This exit can be used to filter list of transports awaiting approval.
Pre-population of emails during notification **(Exit Identifier 0510)**	This exit is called during the notification engine just prior to any emails being sent. This means that all email details that have been derived, the subject, message body and recipients are provided to the user-exit for alteration if desired.
Post-population of emails during notification **(Exit Identifier 0520)**	This exit is called during the notification engine but after each email has been sent. During this exit you can send further emails if desired.
Pre-population of a Transport Form **(Exit Identifier 0610)**	When a Transport Form is initially created, this exit is called prior to the Transport Form appearing. This enables the default values of the Transport Form to be pre-populated. It also enables attachments to be automatically added as well as dependencies to other transport requests.
Pre-population of	When a Task is either initially created or changed, this exit is called prior to the Task

a Task **(Exit Identifier 0620)**	form appearing. All fields of the Task can be defaulted or changed prior to display of the form. More importantly, both the default set of Testers and the default set of attachments can be pre-populated.
Pre-population of a Test Result **(Exit Identifier 0630)**	When a Test Result (via a Task and a Test Queue) is initially created, this exit is called prior to the Test Result appearing. The Test result has only 2 fields that can be pre-populated (Test Result and Test Description). More importantly, however, you are also able to attach file templates within this exit. Hence, attachments such as Test Documentation can be added to the Test Result automatically upon entry of the Test Result. The user then has the option to either populate the template or to remove it (if required). Please note that the context of the Test Result (i.e. the Test Queue control point) is also passed to this user-exit along with the Task details so that the behaviour can be altered dependent upon this context (e.g. one template for Integration Testing and another for User Acceptance Testing).
Test Result validation when saving **(Exit Identifier 0635)**	This user exit can be used to validate the entered Test Results during save process.
Task Search Results Filtering **(Exit Identifier 0640)**	This user exit is processed during the task search process. It can be used to further filter the list of tasks returned by the search to build in any customer specific checks. For example, it could be used to additionally search for the entered text within custom fields.
Transport Request Travel **(Exit Identifier 0710)**	When a transport request moves from one location (e.g. Inbox) to another location (e.g. Import Queue) it is possible to manipulate the movement of the transport request within this user-exit. In particular, one is able to “skip” control points and even entire systems if desired (e.g. if the transport request is of a particular type). It is also possible to release the transport request automatically after movement into a particular control point (e.g. after approval is given and the transport request moves into an import queue of a given system then perform the auto-release).
End of Transport Request Travel **(Exit Identifier 0720)**	This user exit is called at the end of the transport path travel function module. By this stage the location of the transport form will have been updated and this can be used, for example, to trigger the creation / sending of TE notifications.
SAP Transport Request Creation **(Exit Identifier 0730)**	This user exit is called during SAP transport request creation. It can be used to set defaults for the transport request details like description, owner, target and project.
SAP Transport Request Creation **(Exit Identifier 0740)**	This user exit is called during approval, before the actual travel takes place.
Merge Request Creation **(Exit Identifier 0800)**	This user exit is called during during the creation of merge request. Note that this user exit is deprecated in more recent versions of Transport Expresso and ActiveControl.
After Merge Request Creation **(Exit Identifier 0810)**	This user exit is called after the creation of merge request. It can be used to automatically create a transport form for the new merge transport.

Merge CTS+ Processing **(Exit Identifier 0820)**	This user exit is called during the processing of CTS+ transports. It can be used obtain the timestamp for the CTS+ transport objects for use in overtake and conflict checks.
Post Import Processing **(Exit Identifier 0850)**	This user exit is called after transport import is complete. It can be used to carry out any required post processing activities on the imported transports or the created merge requests. For example, it could be used to perform the BW renaming on created BW merge requests.
Post Import Processing (single tp/client) **(Exit Identifier 0851)**	This user exit can be used for post processing activities on the imported transports, per single transport/client deployment.
Post Import Processing (unconditional) **(Exit Identifier 0852)**	This user exit can be used for post processing activities on the imported transports.
TOC Creation **(Exit Identifier 0855)**	This user exit can be used to create Transport Form for Transport of Copies.
User Exit for global check in General Analysis **(Exit Identifier 0900)**	Used to set the global check flag during the general analysis. Setting the global check flag will mean that the general analysis will look at all transports in the path whether created locally or imported from other systems.
RFC client destination for conflict analysis **(Exit Identifier 0910)**	This user exit is called during the conflict analysis process to override the RFC destination and therefore the client used. By default the client in the merge target will be used for the conflict analysis but it can be overridden to check a different client if required but using a different RFC destination. E.g. check client 100 for conflicts with transports originating from this client but check client 200 if the transport originates from there
Web UI News feed filtering **(Exit Identifier 0920)**	This user exit can be used to restrict and filter the news and recent events items returned for the logged in user so they don't see news relating to all users.
Link creation validation **(Exit Identifier 0930)**	This user exit can be used to validate link creation.
Priority Schedule Filter **(Exit Identifier 0940)**	This user exit can be used to perform a filter on Priority Schedule.
Overtake Analysis Filter **(Exit Identifier 0950)**	This user exit can be used to perform a filter during Overtake analysis process.
Custom Field updates on	This user exit can be used to update custom fields on transport form when saving the transport form.

Transport Form save **(Exit Identifier 0960)**	
Custom Field updates on Transport release **(Exit Identifier 0970)**	This user exit can be used to update custom field on transport release (if Transport Form already exists). This is called after is called after transport release (class /BTI/ CL_IM_TE_BADI_TR_REL).
Exclude objects from analysis **(Exit Identifier 0980)**	This user exit can be used to exclude unnecessary objects from an analysis

6.9.1. User Exit Implementation

If a user exit is to be implemented, simply copy the sample function module which has a naming standard of **/BTI/TE_EXIT_SAMPLE_XXXX** (where XXXX = 4 digit user exit number) into the customer name space. This copies across the signature of the function module (Importing, Exporting, Changing, Tables and Exception parameters).

The copied function module should then be implemented to the client’s requirement.

Once implemented, an entry must be added to table **/BTI/TE_EXITC**. Note that a corresponding entry may also need to be added to /BTI/TE_EXIT if it does not already exist and has been shipped. The entry in /BTI/TE_EXITC requires:

Field	Description
EXITID	This is the User Exit identifier such as 0010, 0020, etc.
COUNTER	This is just the sequence number, starting from 01. However, if the user-exit allows multiple exits to be defined, then this can be incremented for each implemented user-exit (i.e. 01, 02, 03, etc).
EXITFUNC	The function module name defined in the customer namespace (e.g. ZABC_TE_EXIT_0010).

Notes
Please note the that the following can have impacts across Transport Expresso and should be avoided:
(i) A non active exit added to table /BTI/TE_EXITC.
(ii) A non active exit created in a Function Group which has an existing FM in use.

6.10. Domain Controller Programs

There are a number of utility programs available in the Transport Expresso domain controller backend that enables you to administer the TE system.

Each of these are described below.

Report Name	Description
/BTI/ TE_RBACKUP_DATA_EXP_NEW / /BTI/TE_UBACKUP_DATA	This utility program enables you to export all TE data to the file system. These files can then be imported into another TE domain controller system (via program /BTI/TE_RBACKUP_DATA_IMP). This utility allows you to move your TE domain controller to another system. It can also be used to backup the TE data if desired or simply rebuild a TE playpen system.
BTI/TE_RBACKUP_DATA_IMP_NEW / /BTI/TE_UIMPORT_DATA	This utility program allows you to take the data exported from program /BTI/TE_RBACKUP_DATA_EXP and load these files into a new TE domain controller. This can be used for moving the TE domain controller to a new system or for restoring the TE domain controller from a backup copy.
/BTI/TE_RDATA_SYNCHRONISE	This program should only be used when two TE domain controllers are running in parallel and need to be synchronised. Please consult Basis Technologies support for further information on the use of this program.
/BTI/TE_RNOTIFICATION_ENGINE / /BTI/TE_UEMAIL_NOTIF	The notification engine program sends email notifications for Approvals, Imported transports, etc. Further details about running this report can be found in earlier sections of the Administration Guide.
/BTI/TE_RSYSTEM_REBUILD / /BTI/ TE_USYS_REBUILD	If you ever rebuild a system (e.g. rebuild your test system from your production system), then this report will ensure that TE is brought back into synch. For example, if transport X was applied to the Test system but not Production and then the Test system was rebuilt from production, TE needs to be put back in synch so that transport X is added back to the import queue of the Test system). Important Note: Whenever a system is rebuilt, this utility program should always be run to get TE back in synch.
/BTI/TE_RTASK_UPLOAD / /BTI/ TE_UTASK_UPLOAD	This utility program can be run to upload one or more Tasks into the TE domain controller. The format is relatively straight forward and is described in the selection screen of the program. Data is uploaded from the front-end PC from a flat character-separated file (the character is a parameter). The program should be used during implementations of TE (during migration) or to take a feed of Task data from an external fault management software.
/BTI/ TE_RTRANSPORT_FORM_ENTER	This utility program can be run to enter third-party (external) transport requests into TE. The most common use of this program is for AOP or advance corrections that you would like to have approved via TE (rather than just having the Basis team apply them to the various systems in the landscape ad-hoc). It can also be used when a third-party product (e.g. Transport Expresso) is to be moved through the landscape via the TE approval process. The program expects the transport request number (which must exist in the TMS cofile/data file directory prior) and the target system to import the transport into. This should be the root

	development system. Once this program has been run, a Transport Form can then be created to push the third-party transport request through the pre-defined TE change process.
/BTI/TE_RTRANSPORT_FORM_EXP	Export Transport Form data to XML format to the file system (this program is superseded by /BTI/TE_RBACKUP_DATA_EXP).
/BTI/TE_RTRANSPORT_FORM_IMP	Imports Transport Form data from XML data into the TE domain controller (this program is superseded by /BTI/ TE_RBACKUP_DATA_IMP).
/BTI/ TE_RTRANSPORT_FORM_UPLOAD /BTI/TE_UTF_UPLOAD	This program is used during the migration phase of TE implementation. It allows "in-flight" transport requests (prior to TE implementation) to be added to the correct control point (i.e. normally an import queue) in the correct transport path. Once migrated to the correct control point, the TE change process can then proceed. Please refer to the program selection-screen for further details of the operation of this report.
/BTI/ TE_RERUN_BW_MERGE_NAMEFIX /BTI/TE_UBW_MERGE_PP	During BW/BI merges some objects are renamed based on the system they are being imported into. This means that the objects added to merge transport of copies also need to be renamed. If there are issues with the merge process this renaming can fail. Use this program to re-run the renaming process for the relevant merge transports
/BTI/ TE_REVENTS_COFILE_RECON / /BTI/TE_UEVENT_RECON	If transports are manually "Marked as imported" in TE the import date and time of the transport may not be based on the actual time and date in the transport logs. This can cause sequencing issues as TE uses this information when calculating the import sequence. This report can be used to update the import date and time to the actual values based on the SAP transport logs.
/BTI/TE_RU002 / /BTI/ TE_UASSIGN_ATTR	This report is used to update the transport attributes for the selected transports. This needs to be run in the relevant development system where the transports reside. This can be used after system refreshes / copies and when new projects are started to mark older transports as not relevant for the TE conflict analysis (see TE Housekeeping section of Admin Guide)
/BTI/TE_RU403 / /BTI/ TE_UUP_ORIG_SYS	This program is used to update the original system TADIR entries for all objects in a system to the current system. It can be used after project go-lives when objects may be still marked as owned by a different system. Only DDIC users are permitted to run this report
/BTI/TE_RU404	This program is used for caching of open transport requests for performance reasons. Please contact Basis Technologies support for further information on this program.
/BTI/ TE_RUTASK_STATUS_UPDATE	This program can be used to update the Planning and Deployment statuses of Tasks currently in TE. This should be run when configuration changes to the statuses have been made to set the statuses correctly for all existing Tasks
/BTI/TE_RUTASK_STATUS_SET	This program can be used to do a mass update of existing TE Business Tasks to specific Deployment and/or Planning statuses
/BTI/	This program can be used to perform en-masse updates to a

TE_RUADD_APPROVERS_TO_CP	custom field at Business Task or Transport Form level

6.11. Domain Controller Reports

There are a number of utility programs available in the Transport Expresso domain controller that enables you to report on the TE system. Each of these are described below.

A **/BTI/TE** menu is available giving access to the key ones.

Report Name / Transaction	Description
/BTI/ TE_RTASK_STATUS_REPORT / /BTI/TE_RTASK_STATUS	This operational report gives detailed project and task level status information. It provide a snap shot of the status of projects giving both detailed and summary information about the status of all items relating to the projects. Some of the key data that can be reported upon is: • Project/Task/Transport reporting showing the current deployment status (e.g. In development, In test, Awaiting production, etc.) • Project/Task reporting showing the current planning status • The full details of all items returned (Projects/Tasks/Transports) for the selected criteria are available along with a high level summary of the number of items in each status
/BTI/TE_RACTIVITY_EVENTS / /BTI/TE_RACT_EVENTS	This report can be used to show an audit of Transport Expresso activities and events. This includes Imports (including import errors), Approvals, Rejections, Mark as Imported, Mark as Manually Applied, Added to Import Queue, Added to Control Point, etc. The data can be reported at transport level or task and project level as required
/BTI/TE_RIMPORT_AUDIT / /BTI/ TE_RIMP_AUDIT	This report provides an audit of transport imports allowing imports carried out in Transport Expresso to be compared to those performed in SAP / STMS so differences can be highlighted. It can be used find transports imported via SMTS that need to be updated in Transport Express
/BTI/ TE_RANALYSIS_RUN_HISTORY / /BTI/TE_RANAL_HIST	When an analysis is performed the results of the analysis run are stored in the TE database. This provides a history of analysis issues along with the action taken by the user. The change analysis history report allows this history to be reported upon. It gives the full details of the analysis issues along with the action taken by the user (e.g. Approve anyway)
/BTI/ TE_RTRANSPORT_LOCATIONS /BTI/TE_RTRAN_LOCN	This report provides transport and location information as follows: • Retention: For a selected period, the transports with import date/time and duration of “retention” in all relevant systems in the selected transport path • Object: For one or more objects, the transports imported in selected systems • Project: For a project, where the relevant transports are

	located • Owner: For one or more transport owners, where the relevant transports are located
/BTI/TE_RU001 / /BTI/TE_RCONFLCT_ANL	The conflict analysis report is used to report on conflict analysis issues during the merge process. It can be executed for a specific merge target and all conflicting transports are reported. Each transport can be double-clicked to view the object details
/BTI/TE_RTRANSPORT_IMPSTATUS / /BTI/TE_RTR_IMPSTAT	The Import Status report displays all transport requests for a given transport path and into which systems the transport has been imported. The report allows for you to specify whether you want the TE view of the transport request (i.e. whether TE believes the transport was imported) or via the TMS view which examines the transport logs to determine whether the transport was imported. Alternatively, both views can be combined. Each system in the transport path is displayed dynamically, and whether the transport has or hasn't been imported into that given target is displayed.
/BTI/TE_RTRANSPORT_LOCATION / /BTI/TE_RTR_LOCATION	The Transport Location report displays all transport forms belong to a particular Project or Transport path and where they current "sit" within the landscape.
/BTI/TE_RMERGE_RECONCILIATION / /BTI/TE_RMERGE_RECON	The transport and merge reconciliation report is used to provide reconciliation from the original transport to all related merge transports along with an import status to show which systems the transport has been imported into. It provides a linkage into all merged systems so the progress of the original transport can be fully tracked.
/BTI/TE_RTRANSPORT_MERGE / /BTI/TE_RTR_MERGE	The Transport Merge report should be run during and just prior to the release of a project (or upgrade project) that is currently using the "Merge" process. During the merge process, Production Support transport requests are merged into the future release/project and this is either done manually or automatically. In either case, this report displays all Production Support transport requests and the corresponding merge request that they were merged into the project/release on. This report should be run during and just prior to the project/release to ensure that the Production Support transports have all been fully merged and that no regression will occur when the project is set live.
/BTI/TE_RSYSTEM_COMPARISON / /BTI/TE_RSYSTEM_COMP	The System Comparison report allows you to compare two target systems to determine what differences exist between what has been imported into each. A break-down of the missing transport requests (and Tasks) is provided enabling you to take appropriate steps.
/BTI/TE_RANALYSIS_CONFIG / /BTI/TE_RANAL_CONFIG	The analysis configuration report provides a view of which analysis types are switched on for specific targets / locations in Transport Expresso. The yellow icon shows where the analysis is switched on for the location and the green icon indicates where it's mandatory. Clicking on the items will show a popup if there are any parameters entered.
/BTI/TE_RTASK_ROLES_STATS_DETS /BTI/TE_RTSK_STAT	This report provides an overview of the roles and users assigned to the selected tasks and an overview of the changes to both deployment and planning statuses

/BTI/TE_ROPEN_TRANSPORTS /BTI/TE_ROPEN_TRANS	This report can be used to identify old/orphan unreleased transports that are present in development systems and haven't been changed since a specified date. This is useful to aid in the clean-up activity of unrequired transports
/BTI/TE_RCHANGE_METRICS /BTI/TE_RCHG_METRICS	This report will give totals transport imports (and associated tasks) into selected systems for a date / time range. It can be used to report metrics for systems and projects by priority, group, type, etc.
/BTI/ TE_RTEST_RESULTS_ENTRY /BTI/TE_RTEST_RESULT	This report can be used to give visibility to all test results entered for multiple Business Tasks or even a whole project. It will show negative and positive entries for each Business Task and any comments entered.
/BTI/TE_RDELEGATION_REPORT /BTI/TE_RDELEGATIONS	This report shows the details of all active delegations in Transport Express
/BTI/ TE_RTRANS_IMPSTATUS_ALL /BTI/TE_RTR_IMPPATHS	This report is an extension of the Import Status Report, but allows you to view transports over multiple paths. For the report to format the data properly, the Roles assigned to each Target must be consistent across the paths
/BTI/ TE_RLOCATION_CLEARDOWN /BTI/TE_RTR_CLEARLOC	This new utility can be run to remove all of the Transport Forms over a certain age from any particular Control Point. Any Transport Forms that have been in the selected Control Point for more than the configured number of days are 'completed' and removed from the Path
/BTI/TE_RBUILD_LIST /BTI/ TE_BUILD_LIST	This report allows you to sequence all Transports and manual activities for a group of transports in a control point and to give estimated timings using previous import history. This report allows you to create an always up-to-date build list for project cut-overs
/BTI/TE_RISK_ANALYSIS_TR /BTI/ TE_RRISK_ANLSIS	This report is used to identify transports containing objects contained in a specific set of risk groups. This can be useful for enabling a retrospective analysis on changes made to critical objects / blacklists etc. It is based on current Risk Guard group / template locking functionality.

6.12. Windows Interface Command Line Parameters

The following command line parameters are currently available with the TE GUI:

1. Start the TE GUI at a particular Target and Location

- TE.EXE /TARGET: /LOCATION: * TARGETID = 4 digit target identifier as per entry in /BTI/ TE_TARG * LOCATION = 1 character control point (Q=Import Queue, T=Test Queue, I=Inbox, O=Outbox)

2. Open a specified Task upon startup of the TE GUI

- TE.EXE /TASK: * TASKID = Internal Task Identifier as per entry in /BTI/TE_TASK

6.13. Language Translation

Transport Expresso default language is English, however it also includes out of the box translation in German, and also offers the capability to setup the tool for other languages if required.

The language is determined by the language settings in the user’s SAP system.

Setting up translation within Transport Expresso to a language other than English or German is a technical exercise that will require Basis Technologies involvement. If this is something you are interested in, please contact us.

7. Housekeeping Activities

7.1. Recommended Housekeeping Activities

The performance of some functionality within Transport Expresso can inevitably slow down over time, particularly in organisations delivering large volumes of transports through their SAP landscape. To avoid performance degradation over time, Basis Technologies recommend some simple housekeeping activities be performed periodically within TE.

*1. Perform periodic TE Data Archiving
Data archiving can be performed to remove old data from the system. See proceeding “TE Data Archiving” section.

2. Review / remove non-required ‘in-flight’ transports
SAP best practice is always to move every transport through the entire SAP landscape to keep every system in sync, however the reality is that almost all SAP customers do not always do this.

Basis Technologies therefore recommend a regular review of transports that have been stopped half-way through your landscape, and if it certain that they will never be moved further through the SAP landscape, to consider deleting them from Transport Expresso.

Step	Activity
1	Run the Transport Locn by Date/Obj/Project/Ownr report. On the report selection criteria screen, enter wide start/end dates to ensure you capture all transports.
2	In the report output screen, sort the results by the [Time In (SID)] column.
3	Review the oldest transports sitting in each System, and verify if 1) whether they are valid changes that still need to be moved through landscape in the future or 2) whether they are never going to be moved.
4	For all transports that fall into the latter category and are never going to be moved, do a Look For / Locate for each transport within the Windows GUI and delete them from Transport Expresso (using File > Delete (Just Remove The Items From the {Control Point}.

3. Set Ignore attributes on Transports
Transport Expresso analysis checks analyse all transports logged in TE, including those that have already reached your Production system. To avoid this becoming a performance issue over time, it is possible to set a couple of “IGNORE” flag attributes on transports so that they are excluded from specific TE Analysis Checks.
Basis Technologies recommend doing this activity periodically on transports that have been moved through your entire landscape, to avoid the analysis checks slowing down.

3.1 Attribute: YBT_TE_IGNORE

Can be used to remove transports from the TE Conflict Analysis check.

Scenario	Recommended Activity
Single Track Landscape	Whenever a transport reaches Production, run Program /BTI/TE_RU002 in each of your development systems to assign TE attribute YBT_TE_IGNORE to all the transports included in that Project release so they are no longer considered during conflict analysis.
Multi-Track Landscape	Whenever a Project Release reaches Production, run Program /BTI/TE_RU002 in each of your development systems to assign TE attribute YBT_TE_IGNORE to all the transports included in that Project release so they are no longer considered during conflict analysis.

3.2 Attribute: YBT_TE_OVERTAKE_IGNORE

Can be used to remove transports from the TE Overtake/Regression checks.

Step	Activity
1	Within the Windows GUI, locate the oldest 'in-flight' transport (i.e. the one with the earliest release date/time) in a system landscape, by manually checking each Control Point in in the path.
2	Any transport that has reached Production that has a release date/time older than this in-flight transport can have the OVERTAKE_IGNORE attributes set since there is no risk of an overtake/ regression issue.
3	Run Transport Activity Report in the Windows GUI Dashboard to identify all transports that have been imported to Production already. Sort by Release Date to identify all the transports that were released before the oldest in-flight transport that you identified in previous Step.
4	Run program /BTI/TE_RU002 in each of your Development systems to assign TE attribute YBT_TE_OVERTAKE_IGNORE to all the transports identified in previous step, so they are no longer included in overtake/regression analysis check calculations.
5	Repeat for each of your SAP system landscapes

Note: Attribute EXPTIMESTAMP must exist in the development system in order for the attribute update to be successful. If this doesn't exist, run RSWBO006 and copy the settings for EXPORT_TIMESTAMP to EXPTIMESTAMP.

4. Review / remove unnecessary Open transports

Unless TE has been configured to prevent it, your organisation may have a gradual build-up of open transports in your Development systems which have either been forgotten about or deliberately not been released and moved through your SAP landscape.

Step	Activity
1	Run the Open Transports by System & Change Date report to capture a list of all historical open transports.
2	Extract this list and review with the Transport Owners, to validate if the transports are likely to be

	progressed in the future.
3	For the transports that are not expected to be progressed, request that the Transport Owners delete them from SAP. For the ones that already have a corresponding Transport Form, also delete them from Transport Expresso (using File > Delete (Permanently Delete…) in the Windows GUI.

5. Do not configure unnecessary Production Outbox
Some TE customers have historically set-up a Production outbox to act as an easy way of viewing all transports that have gone to Production. The downside of this is that none of the Tasks to which these Transports are ever marked as “Completed” within Transport Expresso.

Basis Technologies would recommend not to have a Production outbox unnecessarily, and if one already exists and is not being used as a control point to a subsequent target system, to approve everything out of it.

6. Hide all inactive SAP Paths
If a SAP landscape path is no longer actively being used, deactivate it within Transport Expresso so that any transports that only exist in that path are not included in TE Analysis Checks.

Step	Activity*
1	Within Windows GUI Configuration screen, change the status of any transport paths not being used to “Cannot be assigned to new transports, not visible within Transport Expresso”

7.2. ActiveControl Data Archiving

ActiveControl includes a data archiving capability to ensure that the performance of the tool does not deterioate over time due to data constraints.

This can be used to archive historical tasks, transport forms, import runs and analysis history data.

Preparing for an archive

A new **Task Creation Date** field has been added in Transport Expresso 6.10.

This field needs to be populated for older tasks that were created before the addition of the field, by running **/BTI/TE_RUUPDATE_TASK_CRT_DATE**.

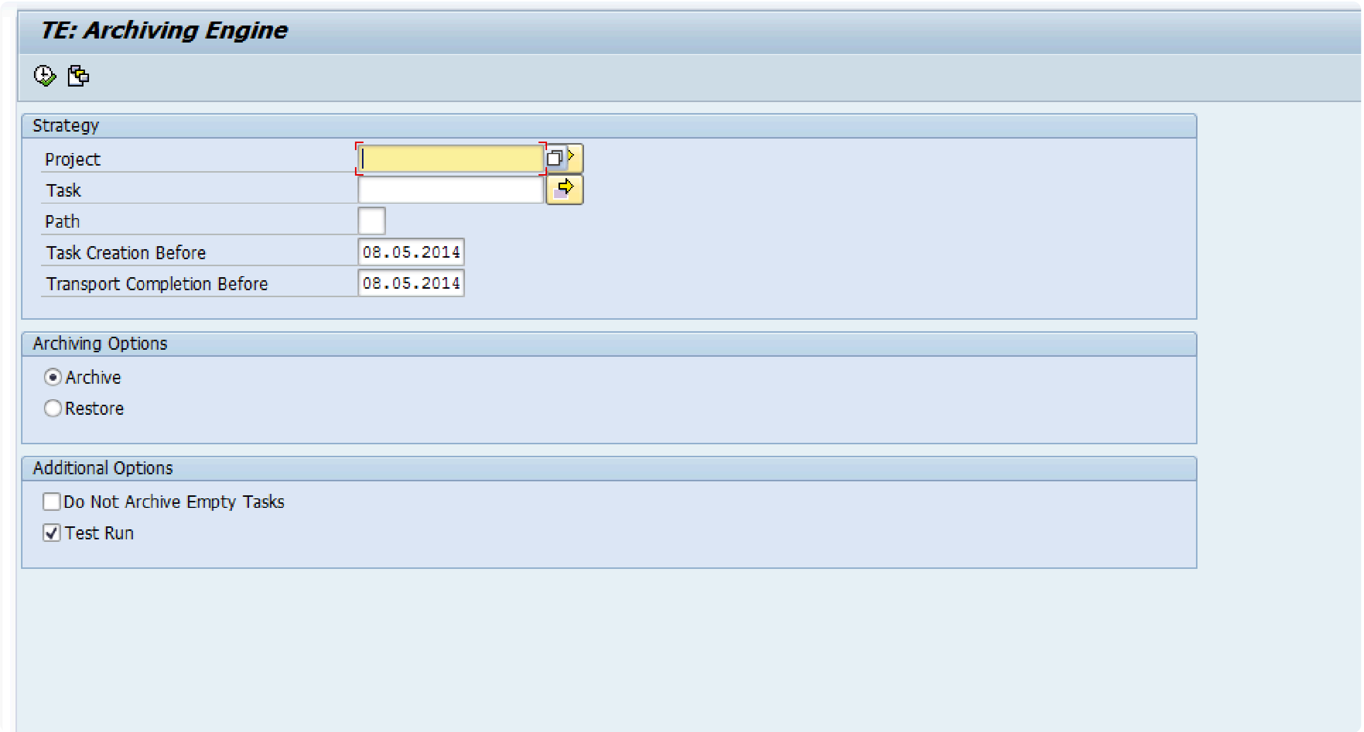
This must be done before performing the first ActiveControl archive.

Performing an archive

Archiving is performed by ActiveControl Administrators in the backend of the ActiveControl Domain

Controller, via program **/BTI/TE_RARCHIVE_ENGINE**

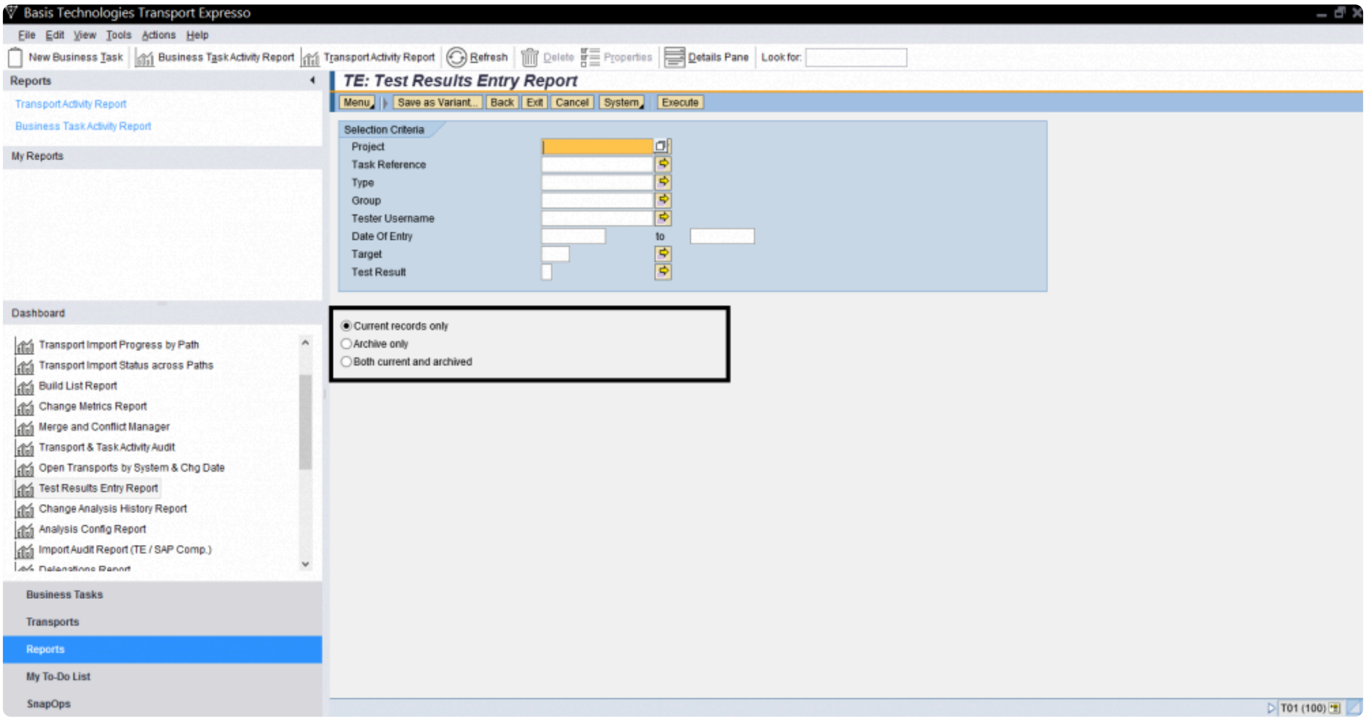
This program can be used to archive as well as restore data. It can also be run in test mode where required.



Reporting on archived data

It is possible to run relevant reports relating to Activities, Events and Test Results on archived data.

This is done via the aforementioned reports, by making use of the options on the report selection screen.

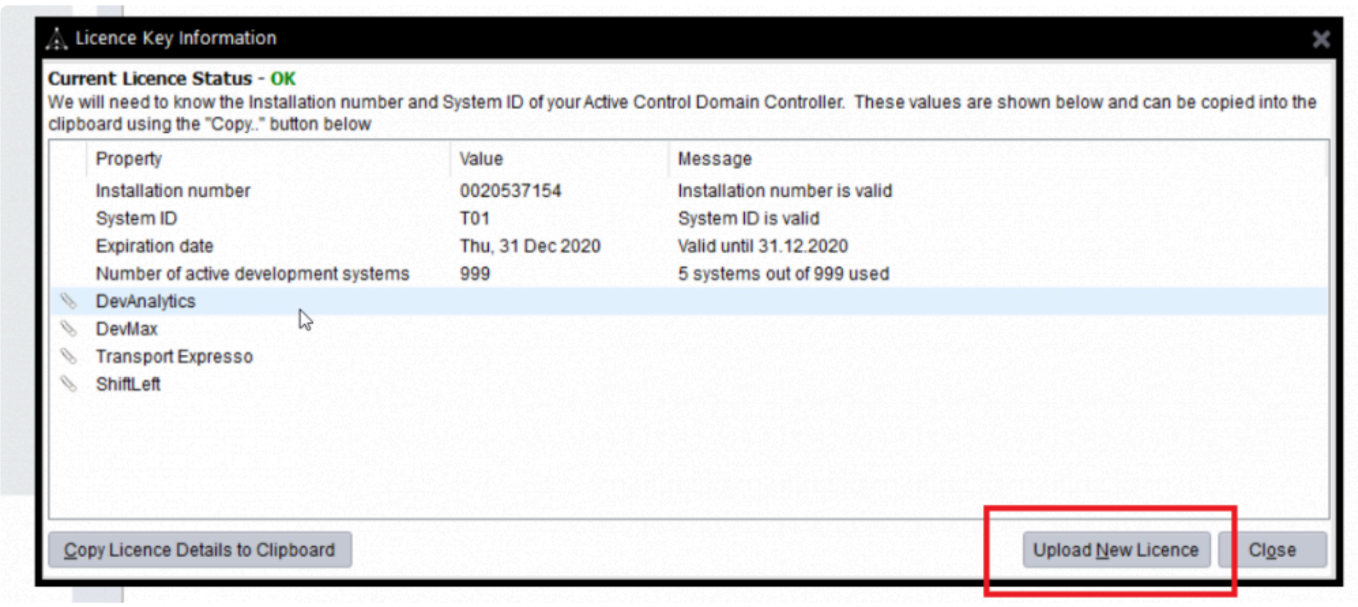


7.3. Updating ActiveControl License Keys

Basis Technologies typically issue a new ActiveControl license key as part of the Annual renewals process.

This license key can be uploaded via the Windows GUI. This is done via the “Help” dropdown > “License Key…” option.

Click on the “Upload New License” button to upload the key you have been sent.



8. Software Support

8.1. ActiveControl Administrators

If you have questions or issues whilst using ActiveControl, you should always contact your internal ActiveControl Administrators in the first instance.

8.2. Online FAQ forum

Basis Technologies offer an online forum containing over 400 searchable **Frequently Asked Questions** relating to ActiveControl and Transport Expresso.

These FAQs cover many of the common error / warning messages that might be experienced during usage, and also useful HOW TO guides to perform many of the common operations within the tool.

The online forum can be accessed via the following URL:

http://support.basistechnologies.com/forums

We strongly encourage all our customers (in particular ActiveControl Administrators and Basis team) to register for accounts on our website, and actively make sure of this forum. It not only helps our customers be more self-sufficient and resolve common issues quickly and without the need for Basis Technologies involvement, but also helps us understand the common challenges our customers are facing.

8.3. Support from Basis Technologies

Raising Support Tickets

To request support from Basis Technologies on any issue relating to our product sets (ActiveControl, Transport Expresso, DevOps, Testimony, Diffuser, Utilities or Transformation), a ticket should be raised via the following email address:

support@basistechnologies.com

Sending an email to this address will automatically create a ticket in Zendesk, the ticketing tool used by Basis Technologies.

To help us offer you the best service with your issue, please include as much information as possible about the issue, with particular attention to the following:

- **Customer:** Include the name of the customer you are representing, it may not always be obvious from your email address
- **Product and Version:** Include the Basis Technologies product and version that you are operating that has the issue
- **System & Client:** The system and client where the issue/fault occurred and if it's a license key issue provide the SAP system installation number (it is always ten digits long)
- **Description:** A clear description of the problem and the steps to replicate the issue, with screen shots
- **Data:** Any master or transactional data objects associated with the issue. E.g. Business Partner, BPEM Case ID, Plant
- **Error Messages:** Details of any error or warning messages given including where applicable run time errors, short dumps and error logs
- **User ID:** The User ID being used when the issue occurred
- **Authorisations:** Ensure transaction SU53 is run and results shared to help with authorisation issues
- **Contact Details:** Please include your own contact details in your email
- **Priority:** Reflect any high priority issues by including URGENT or HIGH PRIORITY at the start of the email subject

Support Escalation

If you have any concerns with the service you are getting from Basis Technologies support, or wish to escalate any high priority issues please email **supportescalation@basistechnologies.com**

Require additional Information or Services?

If additional information or services relating to any of Basis Technologies product sets is required, you can contact us via the above support@basistechnologies.com address, or alternatively by contacting your assigned Basis Technologies Account Director.