



# Change Request Management Critical Objects Check & Approval

How to configure and activate the “Critical Objects Check & Approval” feature?

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# 1 Introduction

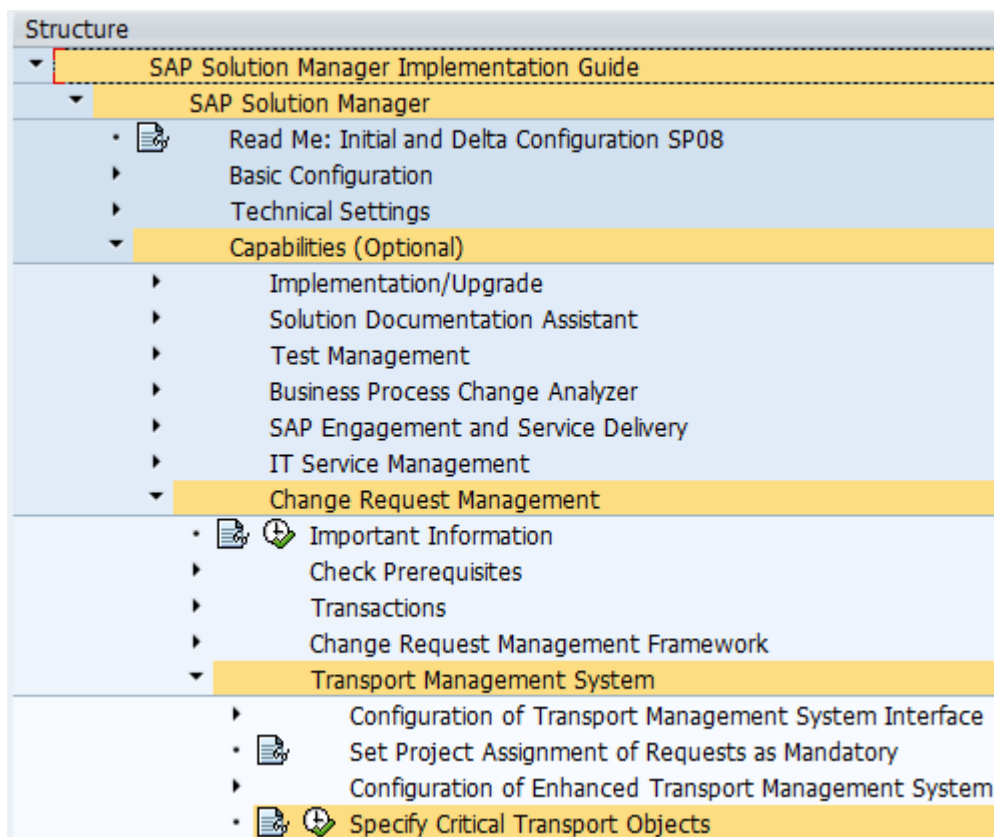
## 1.1 Summary

COA is a powerful ChaRM feature to prevent the release of transport requests containing critical objects. It can easily be activated. We need only a little bit UI Configuration (field Critical Objects), Customizing (Actions “Process Critical Object” and Partner Function “Change Manager”), Authority Assignment (Approval Authority) and Master Data Maintenance (Activation + Definition of Critical Objects).

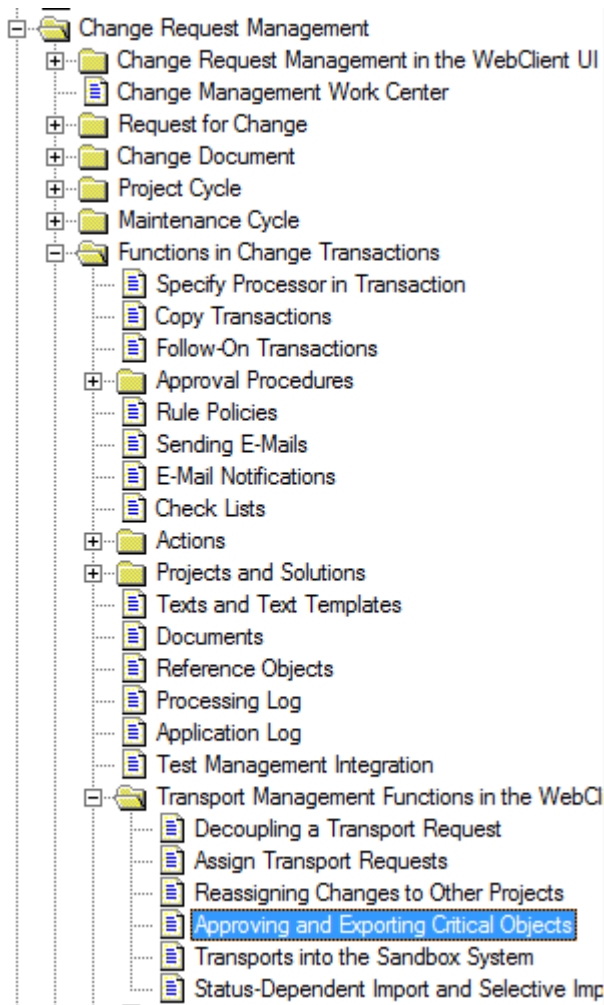
This short guide explains all steps which need to be done. Additionally it explains how to mark all changes as critical or how to mark all configuration changes of a certain customizing table as critical independent from the way of maintenance (table, view, view cluster, IMG, SE16, ...).

## 1.2 Information Sources

SPRO:



SAP Online Library:



### 1.3 Version History

Version	Author	Date	Comment
1	Peter Weigel	21.08.2015	First Version
2	Peter Weigel	04.01.2016	End-User Documentation added, Configuration Doc. redesigned, Development Doc. enhanced.

### 1.4 Literature, Disclaimer, Contact and Download

#### Literature



This document is based on information from SAP Online Library, Implementation Guide of SAP Solution Manager 7.1, several SAP Notes and several SCN articles. These piece of information were enriched by the authors knowledge and experience.

### **Disclaimer**

<http://www.hybrid-eichhoernchen.de/rechtliche-hinweise/>

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## 2 SAP Documentation (from SPRO and SAP Online Library)

### 2.1 Usecase for COA feature

The export of critical transport objects has to be processed in a controlled way. It is possible to activate/deactivate the whole export check for system clients, and to activate/deactivate each critical object specification for system clients.

### 2.2 Activities for feature activation

First you must specify a set of critical transport objects. There are two types of transport critical objects: cross-client and client-specific objects. For each type of critical object there is a separate maintenance interface.

- On the Change Management - Central Configuration screen, choose Critical Objects.
- Select the systems/clients for which you want to specify critical transport objects.
- Switch to the relevant maintenance interface (Client-Specific Objects or Cross-Client Objects) by choosing Switch View.
- Choose Create.
- Enter the relevant data about the critical objects.

For client-specific objects, you must make an entry in the Master Type and Master Name fields. For more information, press F1 in the Master Type field.

For cross-client objects, note that the Program ID, Object Type, and Object Name fields are mandatory. You can specify subobjects (type = LIMU). You can activate the export check for modifications by using the report /TMWFLOW/CONFIG\_SERVICES.

### 2.3 Approving and Exporting Critical Objects

A user attempted to export a transport request containing critical objects, but the export was terminated. In the Schedule Manager application log, the following information is displayed:

```
Export checks for critical transport objects activated
```

```
Transport request <number> contains critical objects
```

In the change transaction, an icon is displayed in the *Critical Objects* column in the transport management assignment block.



You now either have to remove the critical objects from the transport request, or explicitly approve transport of the critical objects. This procedure describes how to approve the objects for export.

## 2.4 Prerequisites

You are the Change Manager who gave the approval to create the preceding change transaction.

## 2.5 Procedure

### Approving and Exporting Critical Objects in the Task List

In the task list, execute the method Display and Approve Critical Transports.

The system displays a list of the critical Workbench objects and critical Customizing objects.

For each object that you want to explicitly approve, choose the traffic light icon at the beginning of the relevant row.

In the dialog box that appears, choose Yes.

The icon color changes to green, which indicates that the objects have now been approved for export.

If necessary, you can revoke the approval for export by choosing the icon again.

### Approving and Exporting Critical Objects in the Change Transaction

Choose *More Process Critical Object*.

The system displays a list of the critical Workbench objects and critical Customizing objects.

For each object that you want to explicitly approve, select the entry and choose *Approve Object*.

The icon in the *Status* field changes color, indicating that the objects have now been approved for export.

If necessary, you can revoke the approval for export by highlighting the entry and selecting *Reject Object*.



## 2.6 Result

The next time an export is performed, the system displays the following information in the application log for the task list:

```
Export checks for critical transport objects activated
```

```
Export of <request number> <object name> authorized by user <name>
```

This information is also entered in the application log for critical objects.





## 3 End-User Documentation

### 3.1 Critical Object Icon

If a transport request contains unapproved critical objects, end-users will see an icon in the Transport Management assignment block.

Critical Objects



### 3.2 Critical Object Action

There exists an action “Process Critical Objects” as part of Transport Management assignment block. This action can be used to display critical objects and their approval status.

Process Critical Object

This action is visible and executable in all status.

### 3.3 Critical Object Warning Message

In status “In Development” a warning message will appear in case there exist unapproved critical objects.

### 3.4 Critical Object Approval

All critical objects need to be approved before releasing the transport request or creating the Transport of Copies. The approval of critical objects can only be done by the Change Manager of the corresponding Change Document.

The approval can be done using the “Process Critical Objects” action. Alternatively there exist a task in the task list of the project to show and approve all critical objects of all transport requests of this project.

### 3.5 Risk

There is a field “Risk” as part of the Change Request and Change Document. This field is only for information and reporting purpose and has no dependencies with the critical objects check feature.

### 3.6 Release Blocking

If critical object approval (in general and for a specific development system) is active and if the current transport request contains unapproved critical objects, the creation and release of transport of copies will be blocked. For the same reason the release of



the origin transport request will be blocked. If the Change Document status change to the next status checks the successful release, the status change will be aborted, because of the failed transport request release.

### **3.7 Import Blocking**

The critical objects check and approval feature supports check on release only. Import of transport request will always be allowed even it contains unapproved critical objects.



## 4 Configuration Documentation

### 4.1 Critical Object Icon

The field/column “Critical Objects” is always visible in the Transport Management assignment block. The UI configuration ensures that this action is there next to the CSOL field. This is the SAP standard configuration. An adjustment is actually not needed except if the title or position should be changed.

	Column Title	Colu...	Horizontal...	Hidden	Fi...
	Actions		Automatic	<input type="checkbox"/>	
	Transport ID		Automatic	<input type="checkbox"/>	
	Request Description		Automatic	<input type="checkbox"/>	
	Request Type		Automatic	<input type="checkbox"/>	
	Transport of Copies		Automatic	<input type="checkbox"/>	
	Tasks		Automatic	<input type="checkbox"/>	
	Owner		Automatic	<input type="checkbox"/>	
	CTS ID		Automatic	<input checked="" type="checkbox"/>	
	Status		Automatic	<input type="checkbox"/>	
	Created On		Automatic	<input checked="" type="checkbox"/>	
	Creation Time		Automatic	<input checked="" type="checkbox"/>	
	Critical Objects		Automatic ▼	<input type="checkbox"/>	
	CSOL		Automatic	<input type="checkbox"/>	

### 4.2 Critical Object Action

In SAP standard, action “Process Critical Objects” is visible in all status but editable in status “In Development“ only. This makes sense, because in SAP standard status “In Development” cannot be left (including release of transport requests) without a complete approval. However, this make no sense since release managers want to have a look at the critical object list including the approval status in a later stage (e.g. before change status to release for production).

We should adjust the SAP standard configuration in the following way: For all used Change Documents (SMMJ, SMHF, ...) the action is visible and editable beginning with status “In Development” including “Closed” but excluding “Withdrawn”.



Structure	
▼	SAP Solution Manager Implementation Guide
▼	SAP Solution Manager
•	Read Me: Initial and Delta Configuration SP08
▶	Basic Configuration
▶	Technical Settings
▼	Capabilities (Optional)
▶	Implementation/Upgrade
▶	Solution Documentation Assistant
▶	Test Management
▶	Business Process Change Analyzer
▶	SAP Engagement and Service Delivery
▶	IT Service Management
▼	Change Request Management
•	Important Information
▶	Check Prerequisites
▶	Transactions
▼	Change Request Management Framework
•	Specify change request transaction type
•	Assign Implementation to Change Transaction Types
•	Make Settings for Change Transaction Types
•	Define Transaction Types to be Completed With a Project Cycle
▶	IT Calendar Integration
•	Define status change depending on approval result
•	Adjust UI objects by User Status





▼	SAP Solution Manager Implementation Guide
▼	SAP Solution Manager
	Read Me: Initial and Delta Configuration SP08
▷	Basic Configuration
▷	Technical Settings
▼	Capabilities (Optional)
▷	Implementation/Upgrade
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▷	Test Management
▷	Business Process Change Analyzer
▷	SAP Engagement and Service Delivery
▷	IT Service Management
▼	Change Request Management
	Important Information
▷	Check Prerequisites
▷	Transactions
▼	Change Request Management Framework
	Specify change request transaction type
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	Define Transaction Types to be Completed With a Project Cycle
▷	IT Calendar Integration
	Define status change depending on approval result
	Adjust UI objects by User Status
	Synchronize Project and Solution Context
▷	Actions in Change Request Management
▼	Consistency Checks
	Define Consistency Checks
	Define Basic Settings
	Register Messages
	Implement Consistency Checks in Change Request Management
	BAdI: Enhance Consistency Check for Test Plan Status

Note : Actually the consistency check is only supported on CD level. It is available but not working on CR level.

#### 4.4 Change Manager Identification

In SAP standard, critical object approval can only be done by Change Manager of Change Document. He/she can be a person or an organizational unit. If no partner function is marked as “Change Manager”, approval cannot be done via “Process Critical Object” action of Change Transaction. It can only be done via Task List Task.



SAP Solution Manager Implementation Guide

SAP Solution Manager

- Read Me: Initial and Delta Configuration SP08
- Basic Configuration
- Technical Settings
- Capabilities (Optional)
  - Implementation/Upgrade
  - Solution Documentation Assistant
  - Test Management
  - Business Process Change Analyzer
  - SAP Engagement and Service Delivery
- IT Service Management
  - Guided Procedure
  - Specify Destination in Managed Systems
  - Using previous transaction types during transition phase
  - Transactions
  - Checklists
  - Personalized E-Mail
  - Customer Surveys
  - General Settings
  - BW - Reporting
  - Time Recording
  - Customer-Specific Application Components
  - Multilevel Categorisation
  - Text Determination Procedure
  - Partner Determination Procedure
    - Partner Processing
    - Define Partner Functions
    - Use of Own Partner Functions
    - Define Access Sequences
    - Define Partner Determination Procedure
    - Assign Partner Schema to Transaction Type
    - Assign Partner Determination Procedure to Installed Base Category
    - Specify Partner Function Display in Transactions
- Support Team

Business Partner User Interface Control						
Tran...	Procedure	Order	Function	Role Type	Object Relation Name	Search Help
SMMJ	SMMJ0001	01 1	SMCD0001	DEVELOPER Developer	BTPartner_PFT_0005_ABBR_DEVE	EMPLOYE_SH Search...
SMMJ	SMMJ0001	02 2	SMCD0002	TESTER Tester	BTPartner_PFT_0007_ABBR_Test	EMPLOYE_SH Search...
SMMJ	SMMJ0001	03 3	SMCD0003	IT_OPERATR IT Operator	BTPartner_PFT_0006_ABBR_ITOP	EMPLOYE_SH Search...
SMMJ	SMMJ0001	04 4	SDCR0002	CHNG_MANGR Change Manager	BTPartner_PFT_0008_ABBR_CHMA	EMPLOYE_SH Search...
SMMJ	SMMJ0001	05 5	SDCD0004	CURR_PROCR Current Proces...	BTPartner_PFT_0000_ABBR_CPRC	EMPLOYE_SH Search...
SMMJ	SMMJ0001	06 6	SDCR0001	REQUESTER Requester	BTPartner_PFT_0007_MAIN	CONTACT_SH Search...
SMMJ	SMMJ0001	07 7	00000001	SOLD_TO_PT Sold-To Party	BTPartner_PFT_0001_MAIN	SOLD_TO_SH Search...
SMMJ	SMMJ0001	08 8	SDCD0005	PROD_MANGR Production Man...	BTPartner_PFT_0005_MAIN	EMPLOYE_SH Search...



## 4.5 Critical Object Approval Authority

All users which could be Change Managers, needs to have following authorities:

- B\_SMAN\_WPL 03/16 + Task List
- /TMWFLOW/D 5000

## 4.6 Critical Object Definition

If all modification should be considered as critical, the critical objects check for modifications needs to be activated using report /TMWFLOW/CONFIG\_SERVICES resp. transaction /TMWFLOW/CONFIG\_SVC. This needs to be done in the productive SAP Solution Manager System.

<b>Change Management Services</b>
<b>Object Reporting</b>
<input checked="" type="radio"/> Object Reporting Active
<input type="radio"/> Object Reporting Inactive
<b>Modification Checks</b>
<input checked="" type="radio"/> Modification Checks Active
<input type="radio"/> Modification Checks Inactive
<b>Extended Authorization Checks</b>
<input type="radio"/> Check for special authorizations for individual tasks in Service Desk
<input checked="" type="radio"/> Do not check for special authorizations for individual tasks in Service Desk
<b>System Roles Setting for Transporting Copies</b>
<input type="radio"/> Configure system roles or role types of target systems
<input checked="" type="radio"/> Use the default role types for target systems: Single System, Target System

The definition of critical workbench and customizing objects can be done using transaction /TMWFLOW/CMSCONF. All definitions are per default active for all development systems/clients but it is possible to restrict the definition to some development systems only. Using this solution it is possible to define global and local critical objects.

In general, sometimes the exact name (master, view, table, object) needs to be mentioned [EQ]. Some times the name could be left empty, what means that we don't care about the value. Sometimes the name could contain wildcard patterns ("\*" and "?") [CP]. If a generic definition is used, it needs to be ensured that this definition is supported and working. The following tables should help to identify the supported definitions without the need of testing all single critical object definitions.





Please be informed, that the definition of critical object can be improved like mentioned in section 5.4. Therefore much more generic critical object definitions are supported now.

Workbench Objects:

Title	pgmid	objecttype	objname
Variant 1	EQ	EQ	CP

Customizing Objects:

Title	mastertype	mastername	viewname	tablename	tabkey
1.a	EQ	EQ	EQ	EQ	CP
1.b	EQ	EQ	EQ		CP
1.c	EQ	EQ		EQ	CP
2	EQ	EQ		EQ	CP
3	EQ	EQ	EQ	CP	
4	EQ	EQ		CP	
5	EQ	EQ	CP		
6	EQ	CP			
7	EQ	EQ			CP

**Extended Configuration – Change Request Management and QGM**

System Change Options Critical Objects

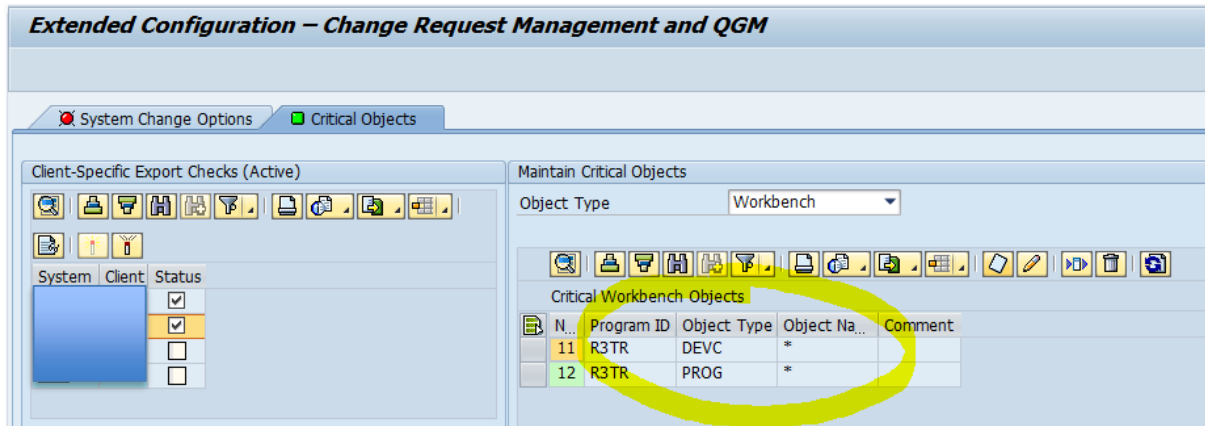
Client-Specific Export Checks (Active)

Maintain Critical Objects

Object Type Customizing

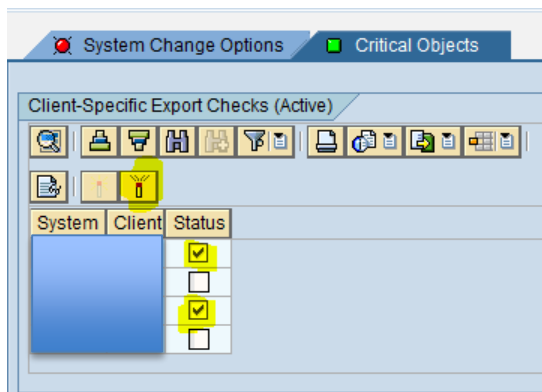
Critical Customizing Objects

N.	Master Type	Master Name	View Name	Program ID	Object Type	Object Na...	Key	Comment
5	TABU	*		R3TR	TABU			
6	VDAT	*		R3TR	TABU			
7	TDAT	*		R3TR	TABU			
8	CDAT	*		R3TR	TABU			



## 4.7 Critical Object Activation

In SAP standard, the Critical Objects Check & Approval needs to be activated by transaction /TMWFLOW/CMSCONF in the productive SAP Solution Manager System. Here the COA needs to be activated in general and for the specific development system + client.



## 4.8 Test

Create CR, CD, TR (CUST + WB, active and not active system/client).

Include critical and not-critical object to TR.



Refresh Transport Management Assignment Block. --> Field CO should show a flash for active systems/clients.

Call "Process Critical Object" action and try to approve. --> Should show critical objects. Approval should be possible for Change Managers only.

Goto Task List, Call Task "Display and Approve Critical Transports". Approve. -> Should work.

The screenshot shows the SAP Transport Management interface. The main table displays transport requests with columns for Transport ID, Request Description, Request Type, Transport of Copies, Tasks, Owner, Status, Conflict, and Critical Objects. A dialog box titled "Process Critical Objects -- Webseitendialog" is open, displaying a warning message: "Only assigned change manager can approve or reject critical objects". The dialog also shows summary statistics: Total Customizing Objects: 3, Approved Customizing Objects: 2, and In Approval Customizing Object: 1. Below these statistics is a table of objects with columns for Status, Processor, Object Type, Programm ID, Sub-Object, Su-Object, Object Name, Request/Task, Export Status, Key, and User.

Transport ID	Request Description	Request Type	Transport of Copies	Tasks	Owner	Status	Conflict	Critical Objects
	Customizing Req...	Customizing Req...	0	1	WEIGEL	Changeable	!	!
	Customizing Req...	Customizing Req...	0	1	WEIGEL	Changeable	!	!
	Workbench Requ...	Workbench Requ...	0	1	WEIGEL	Changeable		!

Status	Processor	Object Type	Programm ID	Sub-Obj...	Su-Objec...	Object Na...	Request/T...	Export St...	Key	User
✓	WEIGEL	V DAT	TABU	V_T005S	R3TR	T005S	M1DK901...	CTS proje...	205AR 11	WEIGEL
✓	WEIGEL	V DAT	TABU	V_T005S	R3TR	T005U	M1DK901...	CTS proje...	205DAR 11	WEIGEL
✗		V DAT	TABU	V_T005S	R3TR	T005U	M1DK901...	CTS proje...	205EAR 11	WEIGEL



**Template Project** - Schedule (Time Zone)

Notes on use | Change task list | Status | Phase

Task List

- ▼ Demo Major Release 2
  - ▼ General Tasks
    - Project Administration in Solution Manager
    - Configuration in Solution Manager
    - Test Plan Management in Solution Manager
    - Change Transaction in Service Desk
    - Correct Import (Repair Flag)
    - Assign cProjects Project to Template Project
    - Call cProjects Project for Template Project
    - Remove cProjects Project from Template Project
    - Lock/Release Transport Tracks incl. Role Types
    - System Logon
    - Display TMS Alert Monitor
    - Display TMS Import Monitor
    - Display TMS Import History
    - Perform Transport Tasks in Several Systems
    - Register transport requests in task list
    - **Display and Approve Critical Transports**
    - Reassign Change
    - Ignore Downgrade Protection Conflict
    - Assignments of Postprocessing Systems to Development Systems



Display and Authorize Critical Transport Objects

ABAP Objects Customizing Objects

Status	Processor	Master Type	Master Name	View Name	Object Type	Program ID	Object Name	Key
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205D...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205D...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205E2...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205E2...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205E2...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205E2...
		V DAT	V_T005_BAS	V_T005_BAS	R3TR	TABU	T005X	205Z...
		C DAT	CRMV_CNTRY_GRPVC	CRMV_CNTRY_GRP	R3TR	TABU	CRMC_CNTRY_GRP	205Z...
		C DAT	CRMV_CNTRY_GRPVC	CRMV_CNTRY_GRP	R3TR	TABU	CRMC_CNTRY_GRP_T	205E2...
		C DAT	CRMV_DYNAM_ATTR	V_CRMC_IM_SCEN	R3TR	TABU	CRMC_IM_SCEN	205Z...
		C DAT	CRMV_DYNAM_ATTR	V_CRMC_IM_SCEN	R3TR	TABU	CRMC_IM_SCEN_T	205Z...
		C DAT	CRMV_DYNAM_ATTR	V_CRMC_IM_SCEN	R3TR	TABU	CRMC_IM_SCEN_T	205Z...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005S	205A...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005S	205A...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205D...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205D...
	WEIGEL	V DAT	V_T005S	V_T005S	R3TR	TABU	T005S	205A...
	WEIGEL	V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205D...
		V DAT	V_T005S	V_T005S	R3TR	TABU	T005U	205E...



## 5 Technical Hints & Optimizations

### 5.1 Tables

Critical Object Definitions

- /TMWFLOW/BCOOBJS - Business-Critical Objects
- /TMWFLOW/BCOOBJT - Business-Critical Object Specification Text Table
- /TMWFLOW/VBCOCRI - View Business-Critical Objects

Critical Object Approvals:

- /TMWFLOW/RCKWORK - BCO BADI Implementation Workflow Table (Approval Status)
- /TMWFLOW/VRCKAPP - Display Critical Export Objects
- /TMWFLOW/VRCKMOD - Display Critical Export Objects (Modifications only)
- /TMWFLOW/VRCKNCH - critical object view for Non-ChaRM project, such as QGM

Critical Object Activation:

- /TMWFLOW/BCOSPEC - Specification BCOs (System specific deactivation)
- /TMWFLOW/RCKSPEC - Release Check Specification Table (active features)
- /TMWFLOW/RCKSYS - BCO Check Systems (Active systems/clients)

### 5.2 Approver Determination

Function module SOCM\_GET\_CHANGE\_MANAGER is used to determine user names of all persons which are allowed to approve critical objects for a given Change Transaction. SAP standard it is looking at the partner function "Change Manager" of the assigned change document. If it is an organizational unit it will be resolved to employees using organizational management. For employees the assigned username will be read.

### 5.3 Critical Object Check

In SAP standard, the Critical Object Check is performed on transport request release by calling function module /TMWFLOW/RCK\_CHECK\_SM\_CALL.

For Change Documents there exists a consistency check NO\_CRTCL\_OBJ which is using method CHECK\_CRTCL\_OBJ of class CL\_CHM1\_INSTANCE to determine



unapproved critical objects. This method uses function module /TMWFLOW/RCK\_CHECK\_REFRESH which uses /TMWFLOW/RCK\_CHECK\_SM\_CALL.

To get the critical object list and the approval status function module /TMWFLOW/RCK\_CHECK\_SM\_CALL or /TMWFLOW/BCO\_CHECK\_OBJECTS or /TMWFLOW/RCK\_CHECK\_REFRESH is used.

## 5.4 Generic Object Definition

If we want to have the possibility to define customizing tables without master (view, viewcluster, IMG), we need to do some modifications in function module /TMWFLOW/BCO\_CHECK\_OBJECTS: Nearly all exact checks (EQ) of mastertype needs to be replaced by pattern check (CP).

```
Function module /TMWFLOW/BCO_CHECK_OBJECTS Active
Attributes Import Export Changing Tables Exceptions Source code
200
201     ENDLOOP.
202
203     ELSEIF NOT <fs_def_critical>-pgmid_key = space
204     AND NOT <fs_def_critical>-object_key = space
205     AND NOT <fs_def_critical>-objname = space
206     AND NOT <fs_def_critical>-mastertype = space
207     AND NOT <fs_def_critical>-mastertype = space
208     AND <fs_def_critical>-viewname = space
209     AND <fs_def_critical>-tabkey = space.
210
211     LOOP AT lt_e071k ASSIGNING <fs_req_schw_e071k>
212     WHERE pgmid = <fs_def_critical>-pgmid_key
213     AND object = <fs_def_critical>-object_key
214     AND objname CP <fs_def_critical>-objname
215     AND mastertype = <fs_def_critical>-mastertype
216     *{ REPLACE MIDK901984
217     *\ AND mastertype = <fs_def_critical>-mastertype.
218     AND mastertype CP <fs_def_critical>-mastertype.
219     *} REPLACE
220
```

Now we are able to define customizing critical objects independent of the way of configuration:



Maintain Critical Objects

Object Type: **CUST Customizing**

Critical Customizing Objects

No.	Master Type	Master Name	View Name	Program ID	Object Type	Object Name	Key	Comment
1	TABU	*		R3TR	TABU	T001L		
2	VDAT	*		R3TR	TABU	T001L		
3	TDAT	*		R3TR	TABU	T001L		
4	CDAT	*		R3TR	TABU	T001L		

Customizing Objects:

Title	mastertype	mastername	viewname	tablename	tabkey
1.a	EQ	CP	CP	EQ	CP
1.b	EQ	CP	EQ		CP
1.c	EQ	CP		EQ	CP
2	EQ	CP		EQ	CP
3	EQ	CP	CP	CP	
4	EQ	CP		CP	
5	EQ	CP	CP		
6	EQ	CP			
7	EQ	EQ			CP