

1

CMI RII Release 2.0

User Manual

Copyright

© 1999, 2009 T-Systems Enterprise Services GmbH. All rights reserved. Printed in Germany.

Contact

T-Systems Enterprise Services GmbH Solution Center PLM Fasanenweg 5 70771 Leinfelden-Echterdingen Germany

http://www.cmi-support.com

☎ +49-711-972-40 304
 ⋈ +49-1805-3344910453
 mail: cmi_support@t-systems.com

Manual History

Version	Date
1.0	December 2008
1.1	February 2009
1.2	March 2009
2.0	July 2009

This edition obsoletes all previous editions.

Trademarks

CATIA is a registered trademark of Dassault Systèmes.

Teamcenter is a registered trademark of Siemens PLM Corporation.

Metaphase is a registered trademark of Metaphase Technology, Inc.

Names of other products mentioned in this manual are used only for identification purpose and may be trademarks of their companies.

Preface

This manual describes the main functionality delivered by the CATIA Teamcenter Interface (CMI RII) and includes the creation, storage, modification, and management of CATIA models and assembly structures in the Teamcenter PDM system.

About this Manual

This manual is intended for end users of the CATIA Teamcenter Interface. It assumes that the reader is familiar with the CATIA application and with Teamcenter Rich Client.

Related Documents

The following manuals contain information about installation, usage and customization of the CATIA Teamcenter Interface:

Manual Title	Version
CATIA Teamcenter Interface RII Installation Manual	2.0
CATIA Teamcenter Interface RII User Manual	2.0

Organization

This manual contains the following chapters:

Chapter 1 provides basic information about the CATIA Teamcenter Interface and describes some features of this application interface.

Chapter 2 describes how to start CATIA within the Teamcenter environment and also how to enable the CMI functionality within CATIA V5.

Chapter 3 introduces the *CMI RII Application* with a general explanation and then by listing its functions. The goal of this chapter is to make the user familiar with this component. The *CMI RII Application* functions will be explained in subsequent chapters.

Chapter 4 describes how to handle CATIA relevant data in Teamcenter.

Chapter 5 explains how to work with CATIA V5.

Glossary contains the CATIA Teamcenter Interface terminology.

Conventions Used in this Manual

This font	Is used for document titles and emphasis.
ltem 1→ltem 2	Is used to identify a menu path to reach a specific function.
-0-	This icon is used to identify tips and attention advises.
>	This icon is used to identify Teamcenter related sections and actions.
N	This icon is used to identify CATIA V5 related sections and actions.

Your Comments are Welcome

Please feel free to tell us your opinion; we are always interested in improving our publications. Mail your comments to:

T-Systems Enterprise Services GmbH Solution Center PLM Fasanenweg 5 70771 Leinfelden-Echterdingen Germany

E-mail: cmi_support@t-systems.com

Table of Contents

CHAPTER 1	. 1
OVERVIEW	. 1
INTRODUCING CMI (CATIA TEAMCENTER INTERFACE) CMI RII JOINS THE ADVANTAGES OF CAD WITH PDM CMI ARCHITECTURE	. 1 . 1 . 2
CHAPTER 2	. 3
GETTING STARTED	. 3
ASSUMPTIONS STARTING APPLICATIONS ENABLING THE CMI TOOLBAR IN CATIA V5	. 3 . 3 . 3
CHAPTER 3	. 5
THE CMI RII APPLICATION	. 5
WHAT IS THE CMI RII APPLICATION? THE CMI RII APPLICATION MENU Menu item File Menu item Edit Menu item Tools Menu item Window Menu item Help POP-UP MENUS OF CMI RII ITEMS	. 5 . 6 . 6 . 7 . 8 . 8
Items in the CMI RII application	. 9
	. 9
	11
Menu item CMI – RII	11
ENHANCEMENTS IN THE MY TEAMCENTER APPLICATION	13
CMI RII MENU BAR IN THE MY TEAMCENTER APPLICATION Menu item CMI – RII	13 13
CHAPTER 4	15
CATIA RELEVANT OBJECTS IN TEAMCENTER	15
PREDEFINED OBJECT STRUCTURE WORKING WITH STRUCTURES Creating an Item Searching for Items Creating a Structure Example Structure for CMI UPDATING A STRUCTURE HIGHLIGHTING AN ITEM IN CATIA	15 16 16 16 17 21 22
CHAPTER 5	25
WORKING WITH CATIA V5	25
INTRODUCTION PRODUCT STRUCTURE CATIA V5 vs. TEAMCENTER CMI TOOLBAR CATDRAWINGS IN CMI RII APPLICATION IN TEAMCENTER CMI TOOLBAR: READ FROM WORKBENCH CMI TOOLBAR: UPDATE TEAMCENTER CMI TOOLBAR: SYNCHRONIZATION IN TEAMCENTER	25 25 26 27 28 29

	CMI TOOLBAR: SAVEAS IN TEAMCENTER	31
	CMI TOOLBAR HIGHLIGHT IN WORKBENCH	32
	CMI TOOLBAR: GET ORIGINAL GEOMETRY FROM TEAMCENTER	32
	CMI TOOLBAR: ADD TEMP	33
	Visualize multiple revisions of an Assembly using Add Temp	34
	CMI TOOLBAR: INSERT FROM TEAMCENTER	34
	CMI TOOLBAR: LOCAL SAVE AND RESTORE	35
	CMI TOOLBAR: RECONNECT WITH TEAMCENTER	35
	CMI TOOLBAR: CMI MANAGE CATALOGS	36
	CMI TOOLBAR: CMI INFO	37
	HANDLING OF CATDRAWINGS	38
	Creating a CATDrawing From a Single Model	38
	Creating a CATDrawing From a Product Structure	38
	HANDLING OF CGR AND MODEL FILES	39
	CATALOG MANAGEMENT	40
	Manage Catalogs	40
	Read Catalog	41
	Update or Create Catalog	42
	SUPPORT OF CATIA V5 RELEASED CACHE	45
	OPTIONAL COMMANDS	45
	Update Position	46
	Update Parts	46
	Restore Positions	46
	Choose Update Position	46
	Choose Update Geometry	47
G	LOSSARY	49

Table of Figures

FIGURE 1: CATIA TEAMCENTER INTERFACE ARCHITECTURE	2
FIGURE 2: TEAMCENTER RICH CLIENT START WINDOW	5
FIGURE 3: CMI RII APPLICATION WINDOW.	6
FIGURE 4: CMI RII APPLICATION MENU ITEMS	6
FIGURE 5: CMI RII APPLICATION MENU 'FILE'	6
FIGURE 6: CMI RII APPLICATION MENU 'EDIT'	6
FIGURE 7: THE CMI RII APPLICATION OPTIONS DIALOG	7
FIGURE 8: CMI RII APPLICATION MENU 'TOOLS'	7
FIGURE 9: CMI RII APPLICATION MENU 'WINDOW'	8
FIGURE 10: CMI RII APPLICATION MENU 'HELP'	8
FIGURE 11: CMI RII APPLICATION ABOUT DIALOG.	8
FIGURE 12: CONTEXT MENU ON A BOMLINE IN THE CMI RII APPLICATION	9
FIGURE 13: CONTEXT MENU ON A DATASET IN THE CMI RII APPLICATION	. 10
FIGURE 14: PSE APPLICATION WITH CMI RII MENU	. 11
FIGURE 15: PSE MENU 'CMI - RII'	. 11
FIGURE 16: PSE APPLICATION WITH SEND TO CATIA COMMAND	. 11
FIGURE 17: PSE APPLICATION WITH SEND DMU TO CATIA COMMAND	. 12
FIGURE 18: MY TEAMCENTER APPLICATION WITH CMI RII MENU	. 13
FIGURE 19: MY TEAMCENTER MENU 'CMI - RII'.	. 13
FIGURE 20: MY TEAMCENTER APPLICATION	. 13
FIGURE 21: PREDEFINED CATPRODUCT OBJECT STRUCTURE	. 15
FIGURE 22: PREDEFINED CATPART OBJECT STRUCTURE	. 16
FIGURE 23: EXAMPLE OF AN EXPANDED ASSEMBLY IN TEAMCENTER PSE APPLICATION	. 17
FIGURE 24: EMPTY TEAMCENTER PSE APPLICATION	. 17
FIGURE 25: PSE APPLICATION WITH "TABLE"	. 18
FIGURE 26: PSE APPLICATION WITH "TABLE", "PLATE", AND "LEG"	. 18
FIGURE 27: MY TEAMCENTER APPLICATION WITH "PLATE"	. 19
FIGURE 28: NEW DATASET DIALOG	. 19
FIGURE 29: MY TEAMCENTER APPLICATION WITH COMPLETE "TABLE"	. 20
FIGURE 30: CMI RII APPLICATION WITH COMPLETE "TABLE"	. 20
FIGURE 31: CATIA V5 WITH LOADED "TABLE"	. 21
FIGURE 32: CATIA V5 WITH UPDATED "TABLE"	. 21
FIGURE 33: CMI RII APPLICATION WITH COMPLETE "TABLE"	. 22
FIGURE 34: "TABLE" ITEM IN MY TEAMCENTER	. 22
FIGURE 35: HIGHLIGHT POP-UP MENU IN CMI RII APPLICATION	. 23
FIGURE 36: HIGHLIGHTED ITEM IN CATIA V5	. 23
FIGURE 37: PRODUCT STRUCTURE IN TEAMCENTER AND CATIA V5	. 25
FIGURE 38: CMI TOOLBAR IN CATIA V5	. 26
FIGURE 39: CMI RII APPLICATION WITH A CATDRAWING DATASET	. 27
FIGURE 40: DRAWING WORKBENCH FOR READ, UPDATE, CREATE OR SAVE AS CATDRAWING	3 27
FIGURE 41: DIALOG WINDOW FOR UPDATE TEAMCENTER	. 28
FIGURE 42: THE SYNCHRONIZE TEAMCENTER DIALOG	. 29
FIGURE 43: EDIT PDM-PART CATEGORY DIALOG	. 30
FIGURE 44: THE SYNCHRONIZATION IN TEAMCENTER DIALOG WITH SUCCESS	. 31
FIGURE 45: DO NOT ACTIVATE DEFAULT SHAPES ON OPEN OPTION IN CATIA V5	. 33
FIGURE 46: RECONNECT DIALOG	. 36
FIGURE 47: INFORMATION DIALOG WINDOW FOR CATPRODUCT WITH "MORE ATTRIBUTES"	. 37
FIGURE 48: CMI INFORMATION FOR MULTIPLE ITEMS	. 38
FIGURE 49: MANAGE REPRESENTATION DIALOG OF CATIA V5	. 39
FIGURE 50: MANAGE REPRESENTATION DIALOG OF CATIA V5 WITH NEW MODEL FILE	. 40
FIGURE 51: SELECT CATALOG FOR BROWSING DIALOG	. 41
FIGURE 52: BOLT CATALOG OPENED IN CATIA	. 41
FIGURE 53: SELECT CATALOG FOR EDITING DIALOG	. 42
FIGURE 54: EDIT CATALOG IN CATIA	. 42
FIGURE 55: SYNCHRONIZE CATALOG DIALOG	. 43

FIGURE 56: CONFIRMATION DIALOG FOR UNKNOWN ENTRIES IN THE SYNCHRONIZE CATALOG	
COMMAND	. 44
FIGURE 57: SYNCHRONIZE CATALOG WITH SUCCESS	. 44
FIGURE 58: TOOLS→ OPTIONS DIALOG IN CATIA	. 45
FIGURE 59: CHOOSE MATRIX TO UPDATE DIALOG.	. 46
FIGURE 60: CHOOSE MODEL TO UPDATE DIALOG	. 47

CHAPTER 1

Overview

This chapter provides basic information about the CATIA Teamcenter Interface and lists some features of this application interface.

Introducing CMI (CATIA Teamcenter Interface)

The CATIA Teamcenter Interface (CMI RII) was developed by T-Systems as a high-end integration between the CAD system CATIA V5 and the PDM system Teamcenter. With this interface it is possible to manage CATIA V4 and CATIA V5 models and assemblies in Teamcenter and CATIA V5.

CATIA V5 uses assemblies similar to *Teamcenter*. CMI makes a bidirectional mapping between the *Teamcenter* structure and the *CATIA V5* structure. So users have the full functionality of *Teamcenter* and *CATIA V5*.

CMI RII joins the advantages of CAD with PDM

The CATIA Teamcenter Interface combines the CAD Excellency of CATIA with the power of the PDM system Teamcenter. It provides the user with a more sophisticated way of working with CATIA by allowing the management of product structures and multiple level assembly structures within the PDM system.

The CATIA Teamcenter Interface (CMI RII) permits:

- Integration of CATIA data in workflow (e.g. release control);
- Management of CATIA data in vaults, without knowledge about the underlying file system;
- Updating concurrent engineering processes by different users;
- Distribution of CATIA data in a network;
- Simultaneous management of CATIA data and structures;
- Construction of part structures within Teamcenter;
- Modification of the position of the structures;
- Search for CATIA data by different attributes.

CMI Architecture

The following figure explains the architectural basics of the CATIA Teamcenter Interface (CMI RII).



Figure 1: CATIA Teamcenter Interface architecture

The user can expand an assembly within the CMI RII Application and send this assembly to CATIA V5. After changing geometries and/or positions in CATIA the user can update the assembly in Teamcenter.

CHAPTER 2

Getting Started

This chapter describes how to start CATIA within the Teamcenter environment and also how to enable the CMI functionality within CATIA V5.

Assumptions

Some assumptions, for a better understanding of the descriptions and examples:



CATIA V5 should display the CMI toolbar:



UNIX:

Start CATIA V5 with the command cmicatstart.sh

Windows:

Make sure you have set up the right environment (refer to Installation and Administration Guide). Launch CATIA V5 with the command: CNEXT.exe -env CatiaCMIEnv -direnv "C:\<path to the CMIEnv>"

Starting Applications

Before working with CMI RII it is necessary to start the Teamcenter Rich Client, the Teamcenter user interface, and the CATIA V5.

For information on starting Teamcenter Rich Client see the Teamcenter Help Library – Getting Started with Teamcenter provided by Siemens PLM.

For information on starting the CATIA User Interface see the CATIA Solutions User's Guide.



It makes no difference if Teamcenter or CATIA is started first.

Enabling the CMI toolbar in CATIA V5



In CATIA V5, select the menu View -> Toolbars -> CMI.

If the CMI toolbar is not in the list of toolbars, a problem with the installation may have occurred. In this case, contact the *administrator*. Information about this kind of problem can be found in the Installation Manual.

CHAPTER 3

The CMI RII Application

This chapter introduces the *CMI RII Application* with a general explanation and then by listing its functions. The goal of this chapter is to make the user familiar with this component. The *CMI RII Application* functions will be explained in subsequent chapters.

What is the CMI RII Application?

The *CMI RII Application* is a Teamcenter application used to interactively prepare an assembly structure for sending to CATIA and to provide several manipulation facilities for the CMI commands found in CATIA. The entire data interchange between Teamcenter and CATIA is achieved via the *CMI RII Application*.

CMI RII defines some new dataset types in Teamcenter that can be used to manage CATIA V5 files (CATPart, model, cgr, CATProduct, and CATDrawing). The management of CATIA V5 files is described in *Chapter 5*.



The CMI RII application has to be started in Teamcenter before you can call the functions of CMI RII.

To start the *CMI RII application* use the standard Teamcenter start mechanism as shown in Figure 2.



Figure 2: Teamcenter Rich Client start window

A window with the CMI RII application will appear after logging in in the PDM system Teamcenter (see Figure 3).



Figure 3: CMI RII application window

The CMI RII application Menu

Below the CMI RII application menu items will be described.

File	Edit	Tools	Window	Help
-	10		C 🖂 🛛	×

Figure 4: CMI RII application menu items

Menu item File



Figure 5: CMI RII application menu 'File'

The menu item *File* \rightarrow *Close* will close the CMI RII application. The menu item *File* \rightarrow *Exit* will exit the Rich Client application.

Menu item Edit

File	Edit	Tools	Window	Help
	<mark>2</mark> 1 u	lser Set	ting	
	<u>8</u> c)ptions.		

Figure 6: CMI RII application menu 'Edit'

The menu item *Edit* \rightarrow *User Setting* ... will open the User Setting dialog of the Rich Client application.

The menu item *Edit* \rightarrow *Options* ... will open the Preferences dialog of the Rich Client application.

The CMI RII preferences show the CMI RII options (see Figure 7).

- Send Drawings To CATIA Checked if drawings (CATDrawing) should be sent to CATIA.
- Transfer CGR files To CATIA
 - No No CGR are sent to CATIA
 - Only.CGR Only CGR are sent to CATIA
 - CGR + geometry CGR and geometry files are sent to CATIA
- Work with CATIA Version
 - V5 work with CATIA V5
 - V4 work with CATIA V4

🎾 Options		x
Øptions		
	Send Drawings to CATIA □ Send drawings to CATIA? −Transfer CGR files To CATIA □ Only CGR □ C ORly CGR □ C GR + geometry −Work with CATIA Version C V5 □ C V4	
Options Index Search Organizati	on	
	OK Apply Ca	ncel

Figure 7: The CMI RII application options dialog



File	Edit	Tools	Window	Help	
		🛃 Se	nd To Cati	а	
		🖶 Te	mp To Cati	ia	
		🚭 Ins	sert To Cal	:ia	
		👯 Ca	ncel Catia	Action	
		🛜 Cle	ear Workbe	ench	

Figure 8: CMI RII application menu 'Tools'

The menu item *Tools* \rightarrow *Send To Catia* starts the Read To Catia Action and will read the CMI RII application content to the CATIA.

The menu item *Tools* \rightarrow *Temp To Catia* starts the Add Temp To CATIA Action and will read the temporary added items to the CATIA. This menu item is only usable if the Add Temp action is started from the CATIA.

The menu item *Tools* →*Insert To Catia* starts the Insert To CATIA Action and will read the queried items to the CATIA. This menu item is only usable if the Insert from Teamcenter action is started from the CATIA.

The menu item *Tools* \rightarrow *Cancel Catia Action* cancels actions which are started from CATIA. (e.g. SaveAs and AddTemp). This menu item is only usable if an action is started from the CATIA (e.g. SaveAs and AddTemp).

The menu item *Tools→Clear Workbench Action* removes all Items from the CMI RII Application window.

Menu item Window



Figure 9: CMI RII application menu 'Window'

The menu item *Window* includes the standard menu items provided by the Teamcenter Rich Client application.

Menu item Help



Figure 10: CMI RII application menu 'Help'

The menu item *Help* points to the standard application Help provided by the Teamcenter Rich Client Application.

The menu item $Help \rightarrow About$ opens the About dialog.

The About dialog informs about the actual CMI RII application (see Figure 11).

About CMI RII	
	T···Systems····
Siemens PLM Software	CMI RII - The Teamcenter CATIA Integration (Version 2.0.0)
	CMI RII manages CAD product structures and connects CATIA V5 with Teamcenter.
el the	More info more
China and	IRE Version: 1.5.0.11
/ CONTRACT	JVM Available Memory: 532.81Mb
Carlos (No	JVM Free Memory: 408.11Mb
	Host Name: vp-scplmtestdll
	Log File: C:\DOCUME~1\tc2007\LOCALS~1\Temp\tcserver.exe16484b80.syslog
	Journal File: C:\DOCUME~1\tc2007\LOCALS~1\Temp\tcserver.exe16484b80.jnl
SIEMENS	Copyright © 2008, 2009 by T-Systems Enterprise Services GmbH. All rights reserved. CATIA is a registered trademark of Dassault Systèmes. Teamcenter is a registered trademark of Siemens PLM Software.
	Plug-in Details Configuration Details OK

Figure 11: CMI RII application About dialog.

Pop-Up menus of CMI RII Items

If you select an Item and *drop it into*, or *Send it to* the CMI RII application, a BOMLine will be created dynamically. Items which will be handled as geometry items are represented by $\stackrel{<}{\Rightarrow}$, structure elements are represented by $\stackrel{<}{\Rightarrow}$. If you select a Drawing dataset and *drop it into*, or *Send it to* the CMI RII application a dataset is shown in the CMI RII application. The Drawing dataset is represented by $\stackrel{<}{\Rightarrow}$.

Items in the CMI RII application

On the Item objects displayed in the CMI RII application window there are the following functions available:

DMI RII - Teamcenter 8				
File Edit Tools Window Help				
🖸 🔁 🔁 🔣 🖂 🕅				TEAMCENTER
😔 Back 🔹 😌 📲 CMI RII (to	2007 (tc2007) - Engineering/Designer [IMC-51645	7144])		🗲 ×
Search	S CMIRII &			- 8
Engine 🔁 🔹	Name	Item Id	Revision	Occurrence Name
Quick Links Customize		Encine	A.	
Home >>	🔽 🐁 ConnectionRod/A; Single	selection (CMI RII)	۹.	ConnectionRod.1
🗞 My Worklist 🛛 🚿	😑 🔽 🤌 Crankshaft/A;1 (v Send 1	To 🕨	4	Crankshaft.1
My Saved Searches >>	🔽 🔩 CrankBolt/A;1 🛛 💥 Expan	d	۹.	CrankBolt.1
😽 My Links 🛛 🚿	🔽 👶 CrankShaftLef	d Dalaus	۹.	CrankShaftLeft.1
	🖳 🔽 🍓 CrankShaftRig	I DEIUW	۹.	CrankShaftRight.1
▶ Open Items	🖃 🔽 🤣 FixedParts/A;1 (vi Expan	d Below	4	FixedParts.1
h History	🔽 🔩 CylinderBlock/ Collap	se Below	4	CylinderBlock.1
· miscory	😑 - 🗹 🤣 Rack/A;1 (viev 🛛 😜 Remov	re from Window	4	Rack.1
Favorites Organize	🗹 🍓 Case/A;1 🛛 🕺 Highlic	ht in Catia	4	Case.1
	🔽 🍓 Screw/A;1 💦 Prope	rtiec	4	Screw.1
I Want To Customize	🔽 춳 Screw/A;1 🚆 Dafe	4	4	Screw.2
	🖂 🔽 🍓 Screw/A;1	sn	4	Screw.3
N Getting Started	🔤 🐼 Screw/A;1	Screw /	4	Screw.4
2	🖃 🖓 PistonComplete/A;1 (view)	PistonComplete a	4	PistonComplete.1
🖉 CMI RII	🔤 🐼 Piston/A;1	Piston a	4	Piston.1
	🖃 🗹 🤣 PistonBoltAssm/A;1 (view)	PistonBoltAssm 4	4	PistonBoltAssm.1
(iii) My Teamcenter	🔤 🐼 PistonBolt/A; 1	PistonBolt /	4	PistonBolt.1
Structure Manager	🗹 🍓 RetainingRing/A;1	RetainingRing a	4	RetainingRing.1
	🔤 🗹 🎨 RetainingRing/A;1	RetainingRing a	4	RetainingRing.2
🗟 😤 🐼 🍰 »			[Q 🥔
Ready			2 X	💊 🚜 🕂 💥 💕 😕 📑 o 🛛

Figure 12: Context menu on a BOMLine in the CMI RII application



The *Remove from Window* command is only available on top level elements.

Single selection (CMI RII)	Description
Send To	Sends the selected object to another Teamcenter application.
Expand	Expands the object one level.
Expand Below	Expands the object multiple levels.
Expand Below	Expands the object multiple levels, a dialog will be displayed where the level number can be defined.
Collapse Below	Collapses all children.
Remove from Window	Removes the selected object from the CMI RII application window.
Highlight in Catia Properties… Refresh	Highlights the selected objects in CATIA. Displays the Teamcenter properties dialog. Refreshes the selected object from the database.

Models in the CMI RII application

On the Dataset (CATDrawing) objects displayed in the CMI RII application window there are the following functions available:

ilo Edic 1006	мпоом пер					
🗉 🔁 🗟 K						TEAMCENTE
🖲 Back 🔹 🍪 🔹	CMI RII (to	2007 (tc2007) - Engineerir	ng/Designer [IMC-5164	57144])		مح
iearch		🗲 CMI RII 😣				
Engine	-	Na	me	Item Id	Revision	Occurrence Name
• Ouick Links	Customine		Single relection (CMI BII	;		
	Customize	🖻 – 🗹 🤣 Engi 💶	Single selection years has	ne	A	
🚷 Home	>>	- 🗟 🗧	Remove from Window	nectionRod	A	ConnectionRod.1
💊 My Worklist	>>	🖹 🖻 🗹 🤌 🛛 🍂	Highlight in Catia	hkshaft	A	Crankshaft.1
🛕 My Saved Sear	ches »	- I I I I I I I I I I I I I I I I I I I	Properties	hkBolt	A	CrankBolt.1
🦃 My Links	>>	- V 🔁	Pefrech	hkShaftLeft	A	CrankShaftLeft.1
			ronarongno n ya		A	CrankShaftRight.1
Open Items		🗄 - 🔽 🤔 FixedPa	ts/A;1 (view)	FixedParts	A	FixedParts.1
		🔤 🖉 🚴 Cyli	nderBlock/A;1	CylinderBlock	A	CylinderBlock.1
History		🖯 – 🔽 🌛 Rac	(A;1 (view)	Rack	A	Rack.1
Favorites	Oraniaa	- F 🐁	Case/A:1	Case	A	Case, 1
	Organize		Screw/A:1	Screw	A	Screw.1
I Want To	Curbonias		Screw/A:1	Screw	A	Screw.2
	Customize		Screw/A:1	Screw	A	Screw.3
b			Screw/A:1	Screw	A	Screw.4
y Getting Star	ted	🖻 🖂 洛 Piston Cr	mnlete (A:1 (view)	PistonComplete	A	PistonComplete.1
		📃 🔽 🚴 Pish	níA:1	Piston	A	Piston, 1
Carta		🖻 🔽 🍝 Pish	nBoltAssm(A:1 (view)	PistonBoltAssm	A	PistonBoltAssm, 1
🐘 My Teamce	nter	🎄 🕁 🕺	PistonBolt/A:1	PistonBolt	A	PistonBolt, 1
			RetainingRing(A-1	RetainingRing	Δ.	RetainingRing 1
🚰 Structure M	anager	<u>الم</u> الم	RetainingRing/A:1	RetainingRing	A	RetainingRing.2
æ 🧐 🐼	🏚 🏠 »		5 (9)(1)-	,,		, .,

Figure 13: Context menu on a Dataset in the CMI RII application

Single selection (CMI RII)	Description
Remove from Window	Removes the selected object from the CMI RII application window.
Highlight in Catia Properties… Refresh	Highlights the selected objects in CATIA. Displays the Teamcenter properties dialog. Refreshes the selected object from the database.

Enhancements in the PSE Application

This section introduces the enhancements in the PSE Application by listing its functions.

CMI RII Menu bar in the PSE Application

The PSE application menu is enhanced by a new CMI - RII Menu Item (Figure 14).

File Edit View CMI-RII Tools Window Help

Figure 14: PSE application with CMI RII menu

Menu item CMI – RII

The Menu item CMI – RII Menu (Figure 15) contains two commands to send data to CATIA.



Figure 15: PSE menu 'CMI - RII'

CMI−RII→Send To Catia

The menu item CMI – RII → Send To Catia will send the expanded PSE content to CATIA.



The *Send To Catia* command will send the content of the current active PSE application window to CATIA. Only expanded structures will be sent to CATIA. Unexpanded structures will not be sent to CATIA.

Structure Manager - Teamo	enter 8	- 🗆 ×
File Edit View CML-RU Tool	s Window Help	
📭 🗵 🛛 🔁 Send To Cat	із осайа 🛊 🖉 🖄 🔛 🗅 ≻ 🛞 🗐 🔐 💷 🦓 🔍 н 🖌 ► Ы	TEAMCENTER
😌 Back 🔻 😂 🕈 Structure i	Manager (tc2007(tc2007) - Engineering/Designer [IMC-516457144])	🥐 ×
Search	📝 Structure Manager 🛛	- 8
Engine 🔁 👻	Engine/A;1 (view) - Latest Working - Date - "Now"	🛅 🏭 🛛
▼ Quick Links Customize	BOM Line Absolute Transforma Occurrence Name	
Abme >> Abmy Workist >> Abmy Saved Searches >> You My Links >> ▼ Open Items >> Bengine/A;1 (view) >>	P. Engine/A;1 (view) 1 0 0 0 1 0 0 0 1 Conscient/Rd/A;1 0,9837963425359 Conscient/Rd/A;1 0,9837963425359 Conscient/Rd/A;1 0,097877597257220 Conscient/Rd/A;1 0,097877597257220 Conscient/Rd/A;1 0,09787757257220 Conscient/Rd/A;1 1,065044234907e Conscient/Rd/A;1 0,09787757527220 Conscient/Rd/Rd/Rd/A;1 1,065044234907e Conscient/Rd/Rd/Rd/A;1 1,065044234907e Conscient/Rd/Rd/Rd/Rd/Rd/Rd/Rd/Rd/Rd/Rd/Rd/Rd/Rd/	
History Getting Started CMI RII My Leamcenter		
Structure Manager		
Ready		් 🖞 🗱 🕑 😭 🛄 0

Figure 16: PSE Application with Send To Catia command

Only the expanded structures from the example structure in Figure 16 will be sent to CATIA. The selected items *FixedParts* and *PistonComplete* are not expanded and the substructures of these items are not sent to CATIA.

CMI-RII→Send DMU To Catia

The menu item *CMI* – *RII* → *Send DMU* To *Catia* will send the DMU 'marked' PSE content to CATIA.



The Send DMU To Catia command will send the checked content (checkboxes are presented by the viewer functionality) of the current active PSE application window to CATIA. Only checked structures will be sent to CATIA. Unchecked structures will not be sent to CATIA.



Figure 17: PSE Application with Send DMU To Catia command

Only the checked items from the example structure in Figure 17 will be sent to CATIA. The unchecked structures *FixedParts* and *PistonComplete* will not be sent to CATIA.

Enhancements in the My Teamcenter Application

This section introduces the enhancements in the My Teamcenter Application by listing its functions.

CMI RII Menu bar in the My Teamcenter Application

The My Teamcenter application menu is enhanced by a new CMI – RII Menu Item (Figure 18).

File Edit View CMI-RII Translation Tools Window Help

Figure 18: My Teamcenter application with CMI RII menu

Menu item CMI - RII

The Menu item CMI – RII Menu (Figure 19) contains a command to send data to CATIA.

File Edit View CMI - RII Translation Tools Window Help

Figure 19: My Teamcenter menu 'CMI - RII'.

CMI-RII→Send To Catia

The menu item $CMI - RII \rightarrow Send$ To Catia will send the selected My Teamcenter objects to CATIA.



Figure 20: My Teamcenter application



The *Send To Catia* command will send the selected objects (see Figure 20) of the current active My Teamcenter application window to CATIA. Only CATDrawings are supported now.

CHAPTER 4

CATIA relevant Objects in Teamcenter

This chapter describes how to handle CATIA relevant data in Teamcenter.

Predefined Object Structure

The CATIA Teamcenter Interface (CMI RII) uses the following predefined object structure for CATProducts.

🎾Му	Teamcenter - Te	amcenter 8						
File E	dit View CMI-R	II Translation Tools	Window Help	0			_	
	* 4 4 1	<] 👁 📎 🖻 🗖	🗒 01 [1+ 3+]	4			TEAMC	ENTER
@ Bac	* 🇐 Мут	eamcenter (tc2007	(tc2007) - Engineering)	Designer [IMC-516	457144])			• ×
Searc	h	🔒 Item001	× "2 " 🗆	🎽 Summary 🖾	🛛 😭 Details 🔷 Vie	ewer 😕 Impact	Analysis 💈 JT Preview	w) = D)
It	-	Q Q	🤣 🖃 🗄 🍷 🎽				ty 🛟	🗴 🔩 🗸
-	ltem	Ttem	001	🔊 Item001	/A			C
		2 I	tem001	in recinour	.,,,,			Summary
it	em Revis	ion 🗕 🚽 🖏	tem001/A:1	 Properties 				▼ A—
	-		/A Item001/A		Object: Item001/A			-
2	Datacot		Ttem001/A-view		Name: Thomas I A			- 4
	Dataset		Item001/A		Itemoot/A		<u>_</u>	i 🖆
) • Op	en Items		Item001.1/A				<u>×</u>	. – .
► His	Named Refer	ences	12 View	Des	cription: ThemOO1/A		x	Sei
) Fa	✓ Humed Refer						×	1
		1			1	1		
- **	CATProduct	Name Item001_CATProduct	Size Rem	ImanEile	30-Jul-2009 12:56	Volume volume1		
\heartsuit			1010	pindentio	00 04 2000 12/00	rolanox		
1								
-								- I
								_
87	Open	Import Exp	ort			0	% 🖻 🛅 🗡	
				Close				· I
Deads						2 4	0	
Ready						/ ×	-> O- 🔽 🏍 🕤	

Figure 21: Predefined CATProduct object structure

An Item Revision has a Dataset attached of the type CMIStructure. The Dataset has exactly one Named Reference of the type CATProduct. This will be loaded to CATIA as a CATProduct.

-0

If no Dataset is attached to the Item Revision, a new Product is created in CATIA with the Read operation.

My Teamcenter - Teamcenter 9	0		
File Edit View CMI-RII Translatio	ion Tools Window Help		
🛛 🗶 🗅 🖄 🗶 🕭 🔇	ا 🕶 🖬 🔒 🖆 🔕 🕹	Q 7	EAMCENTER
😔 Back 🔹 🤣 🔭 My Teamcente	21° (tc2007 (tc2007) - Engineering/i	Designer (IMC-516457144))	💮 ×
Search	tramini X × □	Summary 🖄 😂 Datais or Viewer 🎽 Impact Analysis 🖉	IT Preview
Them001		Daninary to E Decars Never D Inpact Historys .	
			∽ <mark>≎ X</mark> - 5
▼ Quick Links Customize	E 10 Item001	🚳 Item001/A	Summary
A Home >>	Trem001-view	- Descention	
🖗 My Worklist 🛛 🚿	🖃 🤌 Item001/A;1	• Properties	
My Projects >>	Item001/A	Object: Item001/A	-
My Links >>	Item001/A-view		4
Eq. my saved searches //	Item001.1/A	Name: Item001/A	<u> </u>
> Open Items	Ttem001.1/A		_
, open temp	F 🔂 View	Description: ThemOn1/A	Sei Sei
Hit Mamed References			
🕨 Fa 🟪			
Reference Na	ame Size Rem	ote Type Last Modified Volume	_
CATProduct Item001.CA	ATProduct 15 Kb	ImanFile 30-Jul-2009 12:56 volume1	
2			
5			
<u></u>			
Open Import	Export	X 🗎 🕻	
		Close	
	U		
Ready		/ × % d* 🛽) ke 🕰 🔄 🔽 🖸

Figure 22: Predefined CATPart object structure

An Item Revision has a Dataset attached of the type CMI3DGeo. The Dataset has exactly one Named Reference of the type CATPart. This will be loaded to CATIA as a CATPart.



If an empty Dataset of the type CMI3DGeo is attached to the Item Revision, a new CATPart is created in CATIA with the Read operation.

Named References of the type CMI3DGeo can handle references of the type *model* and *cgr* which will be loaded in CATIA with the Read operation.

'model' is used for V4 CATIA model files.

'cgr' is used for light geometry representation files.

Working with Structures

A structure is made of one or more items.

An item can contain other items.

Creating an Item



In a Teamcenter Rich Client (e.g. *My Teamcenter* or *PSE* application) select: File->New->Item...

The Item creation wizard is started and guides you through the Item Creation Process.

Searching for Items



In a Teamcenter Rich Client (e.g. *My Teamcenter* application) press the Search button

In the Search window use the Predefined Search for Items. The result is displayed in the My Teamcenter application.

Creating a Structure

To create or modify a structure in Teamcenter use the PSE application.

	× % % 🚰 🚍 → ⇔ 💀 😵 🍡 🌽 🏷 🖆 🗋 🖏 🖏 🖀 🗂	TEAMCENTER
Back • @ z comet		TEAMCENTER
• Structi	re Manager (tc2007(tc2007) - Engineering/Designer [IMC-516457144])	<u> 7</u>
5earch	📝 Structure Manager 🛛	- [
Enter Item ID to search	Engine/A;1 (view) - Latest Working - Date - "Now"	🛅 🏥 🛛
 Quick Links Custom 	ize BOM Line Item Id Occurrence Name	
A Home >> S My Worklist >> A My Saved Searches >> S My Links >>	Chylic (1, 1) (VeW) Chylic (1, 1) ConnectionRod ConnectionRod.1 Conne	
▼ Open Items 参Engine/A;1 (view)	CyinderBiotz/A;1 (view) FixedParts FixedParts. CyinderBiotz/A;1 CyinderBiot. CyinderBiotz/A;1 Ceee Case.1 Constant Co	
History Jiem004/A;1 Getting Started GMT BII	Screw(A): Screw Screw.2 Screw(A): Screw Screw.3 Screw(A): Screw Screw.3 Screw(A):	
My Teamcenter Structure Manager	Petorikoli A;1 Petorikoli Petorikoli Petorikoli 1 Petorikoli A;1 RetainingRing RetainingRing,1 RetainingRing A;1 RetainingRing RetainingRing.2	

The figure below shows an example assembly with expanded items in the PSE application browser.

Figure 23: Example of an expanded assembly in Teamcenter PSE application

Example Structure for CMI

The following instructions describe step by step how to create an example assembly structure which can then be loaded into the CATIA session:



Start the PSE application in Teamcenter Rich Client (Figure 24).

Structure Manager - Teamce	nter 8			_ 🗆 🗵
File Edit View CMI-RII Tools	Window Help			
🚺 🛛 🗶 🗅 🗂 🗙				TEAMCENTER
1 😳 😤 😭 🚍 🔿 👄 5	🐖 😵 😼 🗞 😭 🗋	18 😵 🔗 🗂 🖉	8 9 9 H 4 F	н
🚯 Back 🔹 🙆 🝸 Structure M	lanager (tc2007 (tc2007) - Engine	eering/Designer [IMC-51	.6457144])	📝 ×
Search	Tructure Manager			- 8
000100				· 444
	No structure - Latest Working - Date	- "Now"		🗖 🗰 🛪
▼ Quick Links Customize	BOM Line	Item Name	Occurrence Name	
🚵 Home >>				
🔬 My Worklist 🛛 »				
🛕 My Saved Searches 🛛 »				
😽 My Links 🛛 🚿				
▼ Open Items				
3000100/A:1-Table				
▼ History				
💆 Getting Started				
Commu				
(iii) My Teamcenter				
Structure Manager				
🗟 😤 🐼 🍰 »	<u>`</u>	+ 🕄		
Ready				0×~+±>0= 00

Figure 24: Empty Teamcenter PSE application



Create a new item named "Table" with File→New→Item...

Structure Manager - Teamor	enter 8				
File Edit View CMI-RII Tools	Window Help				
N X X M × S K (2 B → ⇔ 5	• • • • • • •	> 8 8 #	Ш\$ <u>\$</u> % Q н	4 6 6	TEAMCENTER
🚱 Back 💌 🎱 🝸 Structure M	lanager (tc2007(tc2007) - Engin	eering/Designer [IMC-S	16457144])		🥐 ×
Search	📝 Structure Manager 🛛				- 0
000100 🔁 🗸	000100/A;1-Table - Latest Working	- Date - "Now"			🗀 🗰 🛛
▼ Quick Links Customize	BOM Line	Item Name	Occurrence Name		
A Home >>	000100/A;1-Table	Table			
My Worklist >>					
My Saved Searches >>					
👽 My Links 🛛 🚿					
▼ Open Items					
🤌 000100/A;1-Table					
▼ History					
Getting Started					
🖉 CMI RII					
()) My Teamcenter					
Structure Manager					
🗟 😤 🐼 🍰 »		+ 😪			
Ready				🧷 🗙 % d	0 🗂 😒 😲 🎀 🔁

Figure 25: PSE application with "Table"



Select the "Table" and create a new item named "Plate" with **File→New→Item...** Select the "Table" and create a new item named "Leg" with **File→New→Item...**

🎾 Structure Manager - Teamce	enter 8				_ 🗆 ×
File Edit View CMI - RII Tools	Window Help				
📘 🛛 🔀 ڭ 🖄 🗙					TEAMCENTER
😵 😤 📑 🚍 🔿 🤜 🥫	🧧 😵 🍫 😺 🖎 😭 🗋) 🕻 🖲 🕲 🔗	🛅 🏂 😤 🔍 M	() N	
📀 Back 🔹 🚳 🖍 Structure M	lanager (tc2007(tc2007) - Eng	gineering/Designer [IMC-S	16457144])		📝 ×
Search	📝 *Structure Manager 🛛				- 0
000100 🔁 🕶	000100/A;1-Table - Latest Workin	ig - Date - "Now"			🗀 🏥 🛛
▼ Quick Links Customize	BOM Line	Item Name	Occurrence Name		
A Home >>	🤣 000100/A;1-Table (view)	Table			
My Worklist >>		Plate			
My Saved Searches >>		Leg			
Synthese My Links State					
▼ Open Items					
3000100/A;1-Table (view)					
▼ History					
Getting Started					
🖉 CMI RII					
(iii) My Teamcenter					
Structure Manager					
🗟 😤 🐼 🍰 »	🖪 🔿 🔁 🔧 🕹	+ &			
Ready				2 x % d	• 😷 🏁 😗 😢 📋 o

Figure 26: PSE application with "Table", "Plate", and "Leg"



Select the "Plate", right Click→Send To→My Teamcenter.

Why Teamcenter - Teamcente	er 8			- 🗆 ×
File Edit View CMI - RII Trans	lation Tools Window Help			
] 🛛 💥 🕒 🗂 🗙 🔈	N 🗟 🖆 🖆 🔒 🖛 🐖]	Q	TE.	AMCENTER
😔 Back 🔹 📀 🍷 My Teamcer	iter (tc2007 (tc2007) - Engineering/	Designer [IMC-516457144])		💮 ×
Search	🤌 000101/A;1 🙁 👋 "1 🗖 🗖	😕 Summary 🕄 📑 Details 🖉	👓 Viewer 😕 Impact Analysis 🔮 J	T Preview
Enter Item ID to search 🍯 🗸	Q 🖉 😑 🕂 🕂 🍸		đ	> a* x5 ±a ▽
Quick Links Customize	000101-Plate	8 000101-Plate		Summary
Home »	⊞ 3000101/A;1-Plate	▼ Properties		▼ Actions
My Projects >>		Object: 000101-Pla	te	Copy
🛕 My Saved Searches 🛛 »		Name: Plate		E Save
> Open Items				
History		Description:		Send To:
Favorites Organize	4			×
	🖘 🤣 000101/A;1-Plate	Owner: 🤱 tc2007	<u>(tc2007)</u> 💌	
🕎 Getting Started	📝 000101/A 	Group ID: 🍇 Engine	ering 💌	
🖋 CMI RII		Last Modifying User: 🙎 tc2007	(tc2007) 💌	
()) My Teamcenter		Checked Out:		_
Structure Manager		Checked Out By: 🔒 No Valu	<u>a</u>	
😸 😤 🔗 🍰 »		•		Þ
Ready			1 × % d° 🗈 🤋	🕷 🕐 😢 📩 O

Figure 27: My Teamcenter application with "Plate"



Select the Item Revision "xxxx/A;1 – Plate" and use the command File→New→Dataset to create a new dataset of type CMI3DGeo to define a geometry.

Use the More... button on the left side to select the type CMI3DGeo. The CMICatiaV5 Tool is set automatically.

Press the OK button to continue.

💯 New Datase	et			×
۵.				
•	Name: 0	00101/A	*	
CMI3DGeo	Description:			
	Tool Used:	MICatiaV5 💌		
	Import:			•••
More				Open On Create
	ОК	Apply	Cancel	

Figure 28: New Dataset dialog



Select the "Leg" of the "Table" in the PSE application and copy the item with **Edit→Copy**.

Repeat the same procedure for the "Leg" item and switch to the PSE application.

Select the "Table" item and paste the "Leg" item three times with Edit→Paste.

Structure Manager - Teamo	enter 8	_ 🗆 ×
File Edit View CMI-RII Tools	Window Help	
] 🖪] 🖂 💥 🛅 🛅 🗙		TEAMCENTER
🗞 🛞 📸 🚍 🖶 🔶 s	🐖 😵 🏂 🖉 🔁 🛅 🗋 🗲 🛞 🏵 📽 🖾 🦓 🔍 M 🔺 🕨 M	
🚱 Back 📼 🎱 🖍 Structure M	lanager (tc2007(tc2007) - Engineering/Designer [IMC-516457144])	🦅 ×
Search	Structure Manager 🕺	- 8
000100	000100/A;1-Table (view) - Latest Working - Date - "Now"	🛅 🏥 🛛
▼ Quick Links Customize	BOM Line Item Name Occurrence Name	
Image: Second	Opportunity Table 0 000102/A;1-Hale 0 000102/A;1-Hag 0 000102/A;1-Hag 0 000102/A;1-Hag 0 000102/A;1-Hag 0 000102/A;1-Hag 0 000102/A;1-Hag Leg 000102/A;1-Hag 0 000102/A;1-Hag Leg 000102/A;1-Hag	
😨 😤 🐼 🍰 »		
Ready	2 × %.	ታ 🖆 🏁 🔮 😫 🛅 1

Figure 29: My Teamcenter application with complete "Table"



Check that CATIA is started with installed CMI RII.

Select the "Table" in the PSE application and right Click→Send To→CMI RII.

Select the "Table" in the CMI RII application and right Click→Expand Below.

🎾 CMI RII - Teamcenter 8				
File Edit Tools Window Help				
] 🖅 🛃 🚭 🔣 🖂] 🔬				TEAMCENTER
🚱 Back 🔹 🚱 🔹 CMI RII 🛛 (tc2	:007 (tc2007) - Engineering/Designer [IMC-5	16457144])		, ×
Search	🗲 CMIRII 🛛			- 8
Enter Item ID to search 🍯 🗸	Name	Item Id	Revision	Occurrence Name
▼ Ouick Links	🖃 🖉 🍫 000100/A;1-Table (view)	000100	A	
Customize	🔽 춳 000102/A;1-Leg	000102	A	
🍓 Home 🛛 🚿	🔽 춳 000102/A;1-Leg	000102	A	
🖗 My Worklist 🛛 🚿	🔽 🔩 000102/A;1-Leg	000102	A	
🛕 My Saved Searches 🛛 »	🔽 춳 000102/A;1-Leg	000102	A	
🧏 My Links 🛛 »	🔽 춳 000101/A;1-Plate	000101	A	
Open Items				
History				
Favorites Organize				
I Want To Customize				
Setting Started				
(iii) My Teamcenter				
🛃 Structure Manager				
🗟 😤 🛐 🎓 🔝 »			ſ	Q 0
Ready			1 ×	🔍 🔑 de 👷 😋 👘 1

Figure 30: CMI RII application with complete "Table"





Use the **Tools→Send To Catia** command to send the content to CATIA.



Figure 31: CATIA V5 with loaded "Table"

Updating a Structure

Complete construction in CATIA and press the Update button in CATIA V5.



The files in CATIA and the metadata are updated to Teamcenter.

Figure 32: CATIA V5 with updated "Table"



Change the visible attributes in the CMI RII application and check the values for Occurrence name and Matrices. Both attributes are filled with the current CATIA data.

DI RII - Teamcenter 8				
File Edit Tools Window Help				
🖅 🔁 💿 Ҟ 📨 😒				TEAMCENTER
😔 Back 🔹 🍪 🍷 CMI RII 🛛 (to	2007 (tc2007) - Engineering/Designer [IMC-5:	16457144])		🖉 ×
Search	🗲 CMI RII 🕴			- 8
Enter Item ID to seard 🍯 🗸	Name	Item Id	Revision	Occurrence Name
* Ouick Links	🖃 🔽 🍫 000100/A;1-Table (view)	000100	A	
Quick Links Customize	🔽 🔧 000102/A;1-Leg	000102	A	000102.1
🏡 Home 🛛 🚿	🔽 🐔 000102/A;1-Leg	000102	A	000102.2
See My Worklist See See See See See See See See See Se	🗹 춳 000102/A;1-Leg	000102	A	000102.3
My Saved Searches >>	🗹 춳 000102/A;1-Leg	000102	A	000102.4
🦻 My Links 🛛 »	🖵 🔽 🚳 000101/A;1-Plate	000101	A	000101.1
Open Items				
History				
Favorites Organize				
I Want To Customize				
🏷 Getting Started				
5 CMI RII				
(ii) My Teamcenter				
Structure Manager				
🗟 😤 🗟 🍰 »				Q 00
Ready			0	🗙 % 🕂 🛍 🕅 🙄 🖻 📋 1

Figure 33: CMI RII application with complete "Table"



Select the "Plate" and right $Click \rightarrow Send To \rightarrow My Teamcenter$ Verify that the dataset and a named reference are added.

💯 My Teamcenter - Teamcen	ter 8		
File Edit View CMI - RII Tran	Islation Tools Window Help		
🛛 🗶 🗅 🛅 🗙 🛵	s 💊 🗟 🖆 🖆 🔒 🕨 🐖		TEAMCENTER
😔 Back 🔹 🔄 🔭 My Teamce	nter (tc2007(tc2007) - Engineerin	g/Designer [IMC-516457144])	😁 ×
Search	🚱 000101-Plat 🗙 🎽 🗖 🗖	🛯 📂 Summary 🛛 👔 Details 👓 Viewer 🎽 Impact Analysis	💕 JT Preview 📃 🗖
Enter Item ID to search 🍯 🗸	Q 🤣 😑 🕀 🍯		🖆 📩 📩 💆
Quick Links Customize	O00101-Plate O00101 O00101	₫ 000101/A	Summary
Home >>	E 🤌 000101/A;1-Plate	▼ Properties	▼ A_
My Projects >>	000101/A	Object: 000101/A	
Synthese My Links	🚮 000101/A		iii
G, My Saved Searches >>	III 🔯 View	Name: 000101/A	
Open Items		Description: Description:	<u> </u>
History		Mace	Sei
Favorites Organize	2		<u> </u>
Named Refer	ences		×
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			۹.
	Name Size	Remote Type Last Modified Volume	
SCMIRI CATPart	000101.CATPart 55 K	b ImanFile 31-Jul-2009 09:52 volume1	
Open	Import Export	<u>x</u> [
		Close	
J	n <u></u>		
Ready		2 × % 🐣	19 🕅 🍞 📄 1

Figure 34: "Table" item in My Teamcenter

Highlighting an Item in CATIA

In cases where you have loaded an assembly structure to CATIA as described in the steps above, it may be useful to find the corresponding model in the CATIA session of an item displayed within the CMI RII application.

For this purpose, it is possible to highlight CATIA models in CATIA using the currently selected item in the CMI RII application.



In the CMI RII application, select the item you want to be highlighted in the CATIA session and choose the *Highlight in Catia* option in the *Pop-Up menu*.

File Edit Tools Window Help					
				TEAM	CENTER
😔 Back 🔹 🌚 🔹 CMI RII (tc:	2007 (tc2007) - Engineering/Desig	ner [IMC-516457144])		- Exam	، مح
Search	🗲 CMI RII 🕺				- 6
Enter Item ID to search 📑 🗸	Name	Item	Id Re	vision Occurrence	Name
Quick Links Customize	E ₩ 3000100/A;1-Table (v	iew) 000100	A	000102.1	
Home >>		000102	Â	000102.2	
🖗 My Worklist 🛛 »	🔽 💰 000102/		A	000102.3	
A My Saved Searches >>	🔽 🍓 000102/	Single selection (CMLR11)	A	000102.4	
🦅 My Links 🛛 »	🔽 🐔 000101/	Send To	A	000101.1	
0 P	×	Expand			
• Open Items		Expand Below			
History		Expand Below			
Favorites Organize		Collapse Below			
		Highlight in Catia			
I Want To Customize	E E E E E E E E E E E E E E E E E E E	Properties			
	e	Refresh			
y Getting Started					
🗲 CMI RII					
🛑 My Teamcenter					
😚 Structure Manager					
🗟 😤 🔗 🍰 »					Q 00
landu .				2 V 9	• •• • •

Figure 35: Highlight Pop-Up menu in CMI RII application



CATIA comes to the foreground with the selected CATIA model highlighted.



Figure 36: Highlighted item in CATIA V5

CHAPTER 5

Working with CATIA V5

Introduction

This chapter describes the CMI interface between CATIA V5 and Teamcenter. Typical tasks discussed are loading items/structures/drawings stored in Teamcenter into *CATIA V5* and creating/updating parts and drawings in Teamcenter. One of the main subsections deals with creating and saving CATIA V4 models.

Product Structure CATIA V5 vs. Teamcenter

Product structures in Teamcenter correspond well to product structures found in CATIA V5. The following graphic illustrates the product structure in Teamcenter and CATIA V5.

					CATIA VS - [000100.CATProduct]	
					🚺 Start Elle Edit View Insert Iools CMI Analyze Window Help	_ # ×
CMI RII - Teamcenter 8				_[0]	x ' & A A A A A A A A A A A A A A A A A A A A	
File Edit Tools Window Help					S 100100	
🗉 🚳 👁 🕷 📧 🕅				TEAMCENTER	000102 (000102 1VI an)	6 ⁹
🚱 Back 🔹 🌚 🍨 DML RUL 🔿	2007 (tr2007) - Engineering/Designer, (TMC-51	6457144])	_	5		
Search	Compu S					
Foter Item 10 to search	Nime	Dee Id	Bautisian	Occurrence Name	= +- ¹ 2,000102 (000102.3){Leg} γ □	_
	E V CONTON(A) I - Table (stew)	000100	A	Occurrence name	+-% 000102 (000102.4)(Leg)	۵.
 Quick Links Custonize 	🔽 🚷 000102/A;1-Leg	000102	A	000102.1	+-%2000101 (000101.1){Plate}	
A Home >>	- 🔽 🍓 000102/A;1-Leg	000102	A	000102.2	- Constraints	(a)
My Worklet »		000102	A	000102.3	toplastop	
My Links >>	- 10 - 000101/011-Riste	000102	A	000102.4	-Appreciator is	
h Onen Perme	in the second se	000101		001011		
+ History						
+ Favorites Organize						2
I Want To Customize						
🕎 Getting Started					Ŷ	
🖌 CMI RII						5
(iii) My Teamcenter					ۆ.	j 🚳 🕻
Structure Manager						2
💧 😤 😤 🎓 🔝 »				9 0	,] 🗖 🗑 🛠 🗇 🖉 🔊 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘 👘	CATIA
Ready			0	🗙 👒 🥜 🕂 🏁 🔮 🖄 💼	Select an object or a command	보의

Figure 37: Product Structure in Teamcenter and CATIA V5

CMI Toolbar

The following figure shows the toolbars of the CATIA V5 CMI module. Descriptions of the toolbar and the command icons follow below.



Figure 38: CMI Toolbar in CATIA V5

With the *CMI toolbar* it is possible to read files from the *CMI RII application* in Teamcenter. You can then modify the geometry in your CATIA V5 session. The modifications can be updated in Teamcenter via the 'Update Teamcenter' or the 'Synchronize Teamcenter' button in CATIA V5.

The icon 'Highlight in Teamcenter' is only active if you are working with a product structure.

You can get the Teamcenter information of the CATParts, CATProducts, CATDrawings, and CATIA V4 Models with the CMI Info button if you loaded the product structure with CMI to CATIA V5.

The other commands will be described in more detail later in this chapter.

CATDrawings in CMI RII application in Teamcenter

CATIA V5 will read all expanded assemblies, single CATDrawings from the Teamcenter CMI RII application.

The following figure shows a CATDrawing in the CMI RII application:

7				
VLMI RII - Teamcenter 8				
				-
				TEAMCENTER
🕲 Back 🔹 😌 🍷 CMI RII (tc	2007 (tc2007) - Engineering/Designer [IMC-51645	7144])		• مح
Search	🗲 CMIRII 🛛			- 6
Enter Item ID to seard 📑 🗸	Name	Item Id	Revision	Occurrence Name
	🔽 🗐 000100/A			
Quick Links Customize				
Anter				
My Worldist >>				
My Saved Searches >>				
🖅 My Links 🛛 »				
Upen Items				
History				
Favorites Organize				
▶ I Want To Customize				
St.				
😏 Getting Started				
🌐 My Teamcenter				
🛃 Structure Manager				
🗟 🥞 🛐 🍰 🛸			[Q 🔗
Ready			Ø×	% → 由際0 % 📋 1

Figure 39: CMI RII application with a CATDrawing dataset

When you have transferred a CATDrawing from Teamcenter to CATIA V5 via the CMI RII application, the drawing will be displayed in CATIA V5 in a new window.

CMI for CATIA V5 also supports CATIA V4 models and CATIA V5 Drawing files (CATDrawings). CATDrawings may be included in assembly structures in Teamcenter, however in CATIA V5 they will be displayed in separate windows as shown in the figure below.

All normal CMI functions (Read, Update, Create and Save As) may be used with CATDrawings and CATParts within CATIA V5.



Figure 40: Drawing Workbench for Read, Update, Create or Save As CATDrawing

CMI toolbar: Read From Workbench



With the 'Read from Workbench' button in the CMI Toolbar the content of the CMI RII application in Teamcenter may be read into CATIA V5. The CMI RII application may contain CATDrawings, and assembly structures.

If you want to send one or more assemblies, CATParts or CATDrawings to CATIA follow these instructions:



Drag and drop, Send To drawings (CMI2DGeo datasets) or assemblies (items) into CMI RII.

Expand or Deexpand the assemblies in the CMI RII application. Only those items that are shown in the CMI RII application will be opened in CATIA.



Read Teamcenter CATIA items with Read From Workbench icon

Every top-level item in the CMI RII application will be opened in a separate browser in CATIA V5.



If the PSE application is the current active application in the Teamcenter Rich Client the PSE content will be read to CATIA instead of the content of the CMI RII application.

CMI toolbar: Update Teamcenter



This command updates geometry and position information in Teamcenter.



Modify the content in CATIA.





Write the modifications back with *Update Teamcenter* icon

All files in the assembly and the position information (transformation matrix) which have been modified in CATIA will be updated in Teamcenter.

The success (green icon) and more detailed information (Figure 41) are then displayed to the user.



Figure 41: Dialog Window for Update Teamcenter

CMI toolbar: Synchronization in Teamcenter

6

This command updates Teamcenter with any changes made to your CATIA V5 product structure. The changes that will be reflected in Teamcenter include:

- any geometry and position information changes,
- the creation of any new CATParts/cgr/models and CATProducts that have been added to your product structure,
- the creation of any new CATPart/cgr/model and CATProduct instances,
- the removal of CATProducts and CATPart/cgr/model instances from the product structure.

The changes made to the product structure since the last Read/Update/Synchronize are presented in the form of a list of operations to be performed in Teamcenter.



Modify your product structure in CATIA by adding a new CATPart/CGR, adding a new CATProduct, removing a product or by changing the geometry of a CATPart.

Write the modifications back to Teamcenter with the Synchronization in Teamcenter

The following dialog will appear, showing which changes need to be written to



Teamcenter:

- 0 × Start Elle Edit View Insert Iools CMI Analyze Window Help <u>6666×6565667556665</u>6 66 💑 000102 (000102.1){Leg} 💑 000102 (000102.2){Leg} 000102 (000102.3){Leg 💑 000 102 (000 102.4){Leg} **B** 000101 (000101.1){Plate} 8 000103 (000103.1){TableDecoration} 6 1 Constr **S** Application 4 1 ute Re 000103 Undate (Link ... Edit PDM-Part category... Synchronize Close ingle step mod

Figure 42: The Synchronize Teamcenter dialog

The dialog's *Operation* column shows which procedures need to be performed in Teamcenter for each object and may be a combination of the following:

Undate	The file and positional changes of any children will be undated in
Opdate	

	Teamcenter.
Create	The object will be created in Teamcenter. The object is completely new and not already in Teamcenter.
Link Child	At least one new parent-child relation will be created in Teamcenter. This reflects the addition of a child product in CATIA.
Drop Child	At least one parent-child relation will be deleted in Teamcenter. This reflects the deletion of a child product of the object in CATIA.

The column *Execute* shows whether the operation will be executed or not. If there is any reason why the operation cannot be executed, then the reasons will be shown in the *Result* column.



If new geometry files are to be created in Teamcenter the default is BOM Type. This will become an item and a dataset in Teamcenter.

With the *Edit PDM-Part category* button the category can be changed to *No BOM Type* in the Edit new PDM-Part category dialog (see Figure 43). This file will become a dataset in Teamcenter and will be attached to the parent item.

Edit new PDM-Part	category ?X
PartNumber	000104
PDM-Part category	No BOM Туре 🔽
	Apply to all new PDM-Parts
< Previous	Vext > OK

Figure 43: Edit PDM-Part category dialog



If the *Synchronize* button is pressed, the list of executable operations is worked through in the order shown on the screen.

The results from Teamcenter are shown in the Output Window below the list.

The Update operation:

CATIA File objects will be updated in Teamcenter. No user interaction is necessary.



The Create operation:

CATIA File objects will be created in Teamcenter and the following steps will be completed:

- a Teamcenter item will be created. The created item is also linked to the users Newstuff Folder.
- a dataset will be created under the item
- the file will be imported in the dataset as Named Reference with the correct type (CMI3DGeo or CMIStructure).



The Link Child operation:

- This may only appear as an operation for *CATProduct* objects, as CATParts cannot contain sub-products. In Teamcenter any new children will be added to the Teamcenter item of the parent object by creating a new BOM Line.



The Drop Child operation:

- This may only appear as an operation for *CATProduct* objects as CATParts cannot contain sub-products. In Teamcenter any child CATProducts deleted from the CATIA product structure will be detached from the Teamcenter item of the parent object by removing the BOM Line.



After every operation the success or failure will be registered in the *result* column of the dialog. If an operation fails the output window will provide you with the cause of

the failure.



Figure 44: The Synchronization in Teamcenter dialog with success

CMI toolbar: SaveAs in Teamcenter

á

With this command a CATPart or CATDrawing currently set active in CATIA V5 can replace another file in Teamcenter. A CATPart or CATDrawing selected in Teamcenter and then dropped into CMI RII will be overwritten by the contents of the CATPart or CATDrawing in CATIA memory.



Design or load your CATPart or CATDrawing in a separate window in CATIA.



In CATIA V5 select the Save As in Teamcenter icon

In order to 'Save As in Teamcenter' with a CATDrawing, drag the 'new' CATDrawing dataset to be overwritten into the CMI RII application in Teamcenter. The CATDrawing active in CATIA V5 will then overwrite its content.

In Order to 'Save As in Teamcenter' with a CATPart, drag the 'new' item to be overwritten into the CMIRII application in Teamcenter. The CATPart active in CATIA V5 will then overwrite its content.



Please take care when you 'Save As' a CATPart which is used in a CATProduct - a reference to the CATPart is stored within the parent CATProduct. Make sure that the new CATPart is compatible.

CMI toolbar Highlight in Workbench



If you want to highlight CATParts, CATProducts, and CATIA V4 models in the CMI RII application triggered by CATIA V5 perform the following steps.



In CATIA V5 select the CATIA objects you want to highlight in the CMI RII

application and choose the *Highlight in Workbench* icon ²⁵ from the CATIA CMI toolbar.



Now the items are selected in the CMI RII application.

CMI toolbar: Get original geometry from Teamcenter



The 'Get original geometry from Teamcenter' command retrieves geometry files (CATPart or CATIA V4 model) from Teamcenter if the geometry files are not yet loaded in CATIA V5.



A CATProduct, CATPart or CATIA V4 Model has to be selected in the product structure.

The function is used in context of huge product structures in CATIA to get the original geometry file from Teamcenter if the *Do not activate default shapes on open* option is set in the CATIA Product visualization settings (see Figure 45).



Figure 45: Do not activate default shapes on open option in CATIA V5

CMI toolbar: Add Temp



The 'AddTemp' command allows the user to visualize a temporary structure together with the working one.

For example, if the user is making a design of a car and wants to see if the luggage boot is big enough, he can load a suitcase as a temporary structure by doing the following (supposing that the car structure is already loaded):



In CATIA V5, go to **Tools >Options >Compatibility** (Tab: "CMI") and make sure that the option "Use one temporary product window..." is checked.



Read an assembly (here the car assembly) into CATIA using the *CMI toolbar Read* command.

In CATIA V5 select the AddTemp from Teamcenter icon





Drop the assembly or model you want to add temporarily to CATIA (the suitcase) into the CMI RII application. Expand it as necessary. Click **Tools >Temp To Catia** in the menu or press the *Temp to Catia* icon in the CMI RII toolbar. Changes or expands you make to other assembly structures in the CMI RII application will not be sent to CATIA.



CATIA comes to the foreground with both the original and temporarily added structures loaded in the same window – here the car and the suitcase structure.

It will not be possible to make any changes to the temporarily added (suitcase) structure.

The temporarily added part/structure is removed from the CMI RII application after you sent it to CATIA.

All Part Numbers and File Names in the temporarily added structure are prefixed with "TMP#_", where "#" is a counter in CATIA V5, beginning with 1. Every AddTemp

will increase the counter. This prefix is customizable by the customer.



Limitation: CATProducts are not transferred to CATIA, the products will be represented by "CATIA Components". Only position information from Teamcenter is processed.

Visualize multiple revisions of an Assembly using Add Temp

Add Temp in CATIA V5 can be used to load different versions (revisions) of an assembly or model at the same time. In order to make this possible, the Part Numbers and File Names of the temporarily added assembly are prefixed with "TMP#_".



In CATIA V5, go to **Tools >Options >Compatibility** (Tab: "CMI") and make sure that the option "Use one temporary product window..." is checked.



Read revision B of your assembly as described in *CMI toolbar Read from Workbench*.

You will find that it is opened in CATIA underneath a product tagged "CMI Workbench".



In CATIA V5 select the Add Temp from Teamcenter icon



To Catia in the menu or press the *Temp to Catia* icon ¹/₁ in the CMI RII toolbar. Changes or expands you make to other assembly structures in the Workbench will not be sent to CATIA.



Revision A and B of your assembly are opened in the same Window in CATIA V5. You can overlay and position the assemblies relative to each other for comparison.

CMI toolbar: Insert from Teamcenter



The 'Insert from Teamcenter' command allows the user to load a CMI structure under a selected product.



Read an assembly into CATIA V5 using the *CMI toolbar Read from Workbench* command.

Select a product to be the root of the inserted structure.

In CATIA V5 select the Insert from Teamcenter icon



Drop the assembly-structure you want to use in CATIA V5 in the CMI RII application window. Expand it as necessary. Click **Tools→Insert To Catia** in the menu or press the *Insert To Catia* icon in the CMI RII toolbar. Changes or expands you make to other assembly structures in the Workbench will not be sent to CATIA.



CATIA comes to the foreground with the selected product and the used structure.

The dropped part/structure is removed from the CMI RII application window after you sent it to CATIA.

Via Synchronize you can save the new Use-Relation in Teamcenter.

CMI toolbar: Local Save and Restore



Using Save Local the content of the CATIA V5 session can be stored locally.

This snapshot of the session will persist even when CATIA V5 is closed.

Ш When the session is restored with *Restore Local*, you can continue your work as if you had just used Read from Teamcenter, i.e. you can perform Updates.

The *Restore Local* command is only available when the CATIA is empty – i.e. no documents are open - to avoid conflicts.



With Save/Restore Local you can avoid reading large assemblies from Teamcenter repeatedly. However, the status of the data in Teamcenter may change if you keep your local snapshot for a long time. It may get "stale".

The following restrictions apply:

- Only one saved session is maintained at a time.
- The session can only be saved when the data is up to date. I.e. there are no files in a modified state, and no new files.
- The save/restore session does not restore files that were not loaded from the PDM system.

CMI toolbar: Reconnect with Teamcenter

17

CMI recognizes files that have been loaded into CATIA V5 through the CMI RII application window. Since it knows that they are from Teamcenter, it can update them there.

Other files, that you load with e.g. **File→Open**, it will not know. They will be regarded by Synchronize as new files, and it will create new Teamcenter objects for them.

If you open a product structure from disk that contains files that are already in Teamcenter, you can use Reconnect with Teamcenter to make CMI RII recognize these files. It will recognize products if the part number is correct, and CATPart/model files based upon their filename. If the CATPart is a BOM CATPart (Component) in Teamcenter, the part number must also match.

						1.	_
Status	TC file access	Partnumber	Instancename	Parent Partnumber	Type	Filename	<u> </u>
CMI-Unknown	Read Write*	Engine_Assm	Engine_Assm		CATProduct	Engine_Assm.CATProduct	
Y CMI-Unknown	Read Write*	FixedParts_Assm	FixedParts_Assm.1	Engine_Assm	CATProduct	FixedParts_Assm.CATProduct	
Y CMI-Unknown	Read Write*	CylinderBlock	CylinderBlock.1	FixedParts_Assm	CATProduct	CylinderBlock.CATProduct	
CMI-Unknown	Read Write*		Zylinderblock.2	CylinderBlock	CATPart	01_Zylinderblock.CATPart	
Y CMI-Unknown	Read Write*	Rack_Assm	Rack_Assm.1	FixedParts_Assm	CATProduct	Rack_Assm.CATProduct	
🖌 CMI-Refere	Read Write	Rack Assembly	Rack.1	Rack_Assm	CATProduct	Rack.CATProduct	
🖌 CMI-Instance	Read Write	Chassis 3dmap	Chassis.1	Rack Assembly	3dmap	Chassis.3dmap	
🖌 CMI-Instance	Read Write	Chassis CATShape	Chassis.2	Rack Assembly	CATShape	Chassis.CATShape	
CMI-Unknown	Read Write*	Screw	Screw.1	Rack_Assm	CATProduct	Screw.CATProduct	
🖁 CMI-Unknown	Read Write*		Schraube.1	Screw	CATPart	10_Schraube.CATPart	-
Select unknown	Reconne	ect selected					

Figure 46: Reconnect dialog

There are three possible states:

 $\tt CMI-Unknown:$ CMI does not know this item at all. It would be created as a new part in Teamcenter.

CMI-Reference: CMI knows this item is in Teamcenter. But it appears that in Teamcenter there is no instance known by the same instance name under the same parent item. Maybe it was deleted or is new. It would be created as a new part instance in Teamcenter.

 ${\tt CMI-Instance}$: CMI knows this instance is in Teamcenter. It can be updated in Teamcenter.

An asterisk (*) signifies that the Reconnect Dialog recognized the item, but it is not yet reconnected. Items are actually reconnected when you close the dialog with *OK*. Click *Cancel* to keep them as unknown, e.g. if you want to save them as new Teamcenter objects.



Reconnect does not create anything in Teamcenter or updates any files. Use *Synchronize* to update data.



Load a CATProduct into CATIA V5 using **File→Open**.



In CATIA V5 select the Reconnect with Teamcenter icon 42

In the CMI Reconnect Dialog, click *Select unknown*. In this case, all lines will be selected. Click *Reconnect selected*. If any items are recognized in Teamcenter, they will change their status. To reconnect these items, close the dialog with *OK*. Click *Cancel* to leave the dialog without reconnecting the items.



Reconnected items that are writeable in Teamcenter will be in the "modified" state, to be able to update them in Teamcenter.

Use Synchronize to create the unknown/new data and to update the reconnected files.

If you want to keep individual items as new, unselect them before you click *Reconnect selected*.

CMI toolbar: CMI Manage Catalogs



This command is described in section Manage Catalogs on page 40.

CMI toolbar: CMI Info



This command displays the information from Teamcenter for CATParts, CGRs, CATProducts, CATDrawings and CATIA V4 Models.

The *More* ... button displays attributes of the correspondent Teamcenter-objects. The range of attributes can be customized.

🛐 CATIA ¥5 - [000100.CATProc	iduct]	- 🗆 ×
Start Eile Edit View	Insert Tools CMI Analyze Window Help	_ 8 ×
6666	🖸 🛋 🏂 🕫 EMI - Information	<u>? ×</u>
*	Product Properties	
	Single Object Multiple Objects	
🔶 🎭 000102 (000102.1){l	(Leg) Catia attributes	
+	(Len) Exchange map file name:	same same
	C:\CMI_XMAP\000103.CATProduct	
+-" <u>%</u> 000102 (000102.3){I	Leg) Changed in Catia	
+-% 000102 (000102.4){I	Leg} Teamcenter attributes	
4-000101 (000101 1)/	(Plate) Part read only	
	File read only	
 - 000103 (000103.1) {	TableDecorati	
- 000104 (000104.1	1){Vase} Partnumber: 000102	
Constraint	Instancename: 000103	
Constraints	Revision:	
-Applications	Nomenclature: TableDecoration	
	More attribute information	Close
CMI - More Attributes	2 X	
er in Frone methodees		× f
Attribute Name	Attribute Value	» ·
Current ID	000103	
Current Name		• » 3
Date Created	31-Jul-2009 10:16	CATIA
ExCO - Explore Checked Out	c	
Group ID	Engineering	
ID Ya Ma difficiale	000103	
Is Modifiable	Y 000103-TableDecoration	
ItemRevision Master	000103/A	
	Close	

Figure 47: Information dialog window for CATProduct with "More Attributes"



Select the CATPart, CATProduct, CATDrawing or CATIA V4 Model.





You can also select multiple CATIA items. Information will be displayed in a table view.

CATIA V5 - [000100.CATProduct]		- 🗆 ×
No Start Elle Edit View Insert Iools	CMI Analyze Window Help	<u>- 8 ×</u>
1 6 6 6 6 % 16 8 6 ¹⁰	MI - Information	<u>? ×</u>
000100 ↓ 000102 (000102.1){Leg}	Single Object Multiple Objects	1
+	Open Read Write CMI 000100 Table	
+	Open Read Write CMI 000102 Leg Open Read Write CMI 000102 Leg Open Read Write CMI 000102 Leg	
+-%,000102 (000102.4){Leg}	Open Read Write CMI 000102 Leg	
+-%,000101 (000101.1){Plate}	Open Read Write CMI 000101 Plate Open Read Write CMI 000103 TableDeroration	
	Open Read Write CMI 000104 Vase	
♣- % 000104 (000104.1){Vase}		
Applications	<u>د</u>	
		Close
	ب چ	6
[ା] 🗅 😅 🖶 🖨 🗶 📑 📽 🔊୍ ୧୯୍	, 😯 🗄 fo 🔗 🖲 📲 📲 🌒 🐉 🚽 🐼 😪 🔍 🍰 🎽	DSCATIA
8 elements selected		9

Figure 48: CMI Information for multiple items

Handling of CATDrawings

CATDrawings can be included in your assembly structures in Teamcenter. All the usual functions (Read, Update, Create and Save As) are supported for CATDrawings in CATIA V5 via the CMI Toolbar.

CATDrawings may be created for single models or for assemblies. There are however several caveats when working with CATDrawings and CMI, depending on the context of the CATDrawing.

Creating a CATDrawing From a Single Model

When creating a CATDrawing for a CATPart, send the CATPart item from Teamcenter to CATIA V5, and then create the CATDrawing. This method will preserve the context of the CATDrawing - irrespective of whether the CATPart is later loaded into CATIA singly or as part of an assembly. If you later make changes to the CATPart, and you wish the CATDrawing to update and reflect the changes, you must load both the CATPart and the CATDrawing in CATIA V5 using CMI before you update the CATDrawing.



Drag and drop the CATPart item on the CMI RII application or use SendTo->CMI RII with the CATPart Item.

Select Tools-Send To Catia or use the Send To Catia icon 2 in the CMI RII toolbar.

Create the CATDrawing with the usual CATIA V5 functions.

Select the Synchronize in Teamcenter icon



Creating a CATDrawing From a Product Structure



Drag and drop the assembly into the CMI RII application.

Select **Tools** \rightarrow **Send To Catia** or use the *Send To Catia* icon $\stackrel{\text{loc}}{=}$ in the CMI RII toolbar.



Create the CATDrawing with the usual CATIA V5 functions.

Select the Synchronize in Teamcenter icon

Handling of cgr and model files

CATIA V5 cgr files and CATIA V4 Model files are managed as representation of an embedded component in the product structure. It is not possible to modify such a representation directly. It is only possible to use the Save As function of CATIA V5 to create a new cgr or model file of a loaded CATPart or CATProduct. To update the representation you have to replace the original representation by the new representation.



Load an assembly which uses a cgr or model in the product structure. And use the right Click **> Representations -> Manage Representations ...** command (Figure 49).



Figure 49: Manage Representation dialog of CATIA V5



Use the "Replace" function to use the cgr or model file with a new representation.

nage R	epresentations				?
Name	Source	Туре	Default	Activated	Associate
Shape 1	C:\CMIXMAP\glas1_neu.model	model	yes	yes	Remove
					Replace
					Rename
A chiu she	Deartivate Set & Default				Close

Figure 50: Manage Representation dialog of CATIA V5 with new model file



Use the CMI Update or Synchronize functionality to update the new cgr or model file in Teamcenter.

During the CMI Update/Synchronize process CMI replaces the original representation file in the exchange directory by the new representation file and changes the "Source" path of the representation back to its original value. Then the new representation file (which has the name of the old file) is updated in Teamcenter.

To use this function you need write access to the cgr or model data item in Teamcenter. Although the cgr or model is represented in an embedded component of a higher CATProduct you need no write access to the CATProduct.

Restrictions:

- There must be only one representation in one component.
- The "Name" of the representation must not change.

Catalog Management

CMI can also manage catalog files in Teamcenter. Teamcenter compatible catalogs reference files and items that are actually stored in Teamcenter. If the user opens or inserts a file from the catalog, CMI retrieves the corresponding data from Teamcenter and starts the defined catalog function (see section

Update or Create Catalog for function details) with the retrieved file(s).

Manage Catalogs



The *Manage Catalogs* icon is enabled when you have a CATProduct active. It allows to retrieve catalogs from Teamcenter for browsing.



After starting the *Manage Catalogs* command the select catalog dialog will be opened in CATIA.

Select Catalog for browsing	<u>?×</u>
CatalogDocument1 infodba_catalog1 izeng_catalog Bolte	
sde5225_Catalog	
Refresh List from Teamcenter	Open Catalog for Browsing

Figure 51: Select catalog for browsing dialog



Pick from the list of catalogs available in Teamcenter and select the *Open Catalog for Browsing* button. The catalog will be opened in a CATIA Catalog browser.

Catal	og Brow	ser:c:\CMI	XMAP\Bolts.	catalog				<u>? ×</u>
Curr	ent:	Type 1				- 主		
1	004457	(Broken)			-	_		
/								
<								
<								
1								
					-			
•				Þ				
Filter	r: [<u>#</u>	Ę	Table	>> La	unch .
	Name							
1	004457							
2	004455							
4	004451							
5	004449							_
						🎱 ОК	0 0	ancel

Figure 52: Bolt Catalog opened in CATIA



Double click an end chapter to open the item from Teamcenter. CMI RII will load the required files from Teamcenter if needed.

You cannot use Open Document or Open As New Document in this context.

Read Catalog



The administrator needs to set CMI_ENABLE_CMICATALOGREADCMD=ON in the CATIA environment in order to enable the *Read Catalog* function.

The *Read Catalog* icon is enabled when you have a CATProduct active. It allows you to retrieve catalogs from Teamcenter for editing.



After starting the *Read Catalog* command the Select Catalog dialog will be opened in CATIA. *Read Catalog* allows to retrieve CATCatalogs from Teamcenter for editing.



Only catalogs with write access in Teamcenter will be retrieved from Teamcenter.

Select Catalog for editing	<u>? </u> ×
CatalogDocument1 izeng catalog	
Bolts	
sde5225_Catalog	
Refresh List from Teamcenter	Open Catalog for Editing
	Close

Figure 53: Select Catalog for editing dialog

	100
	1.0
100	
	1
-	

Pick from the list of catalogs available in Teamcenter and select the *Open Catalog for Editing* button. The catalog document will be opened in a CATIA catalog editor.

SCMI - Bolts.catalog	
Bolts.catalog Bolts Bolts Filter: Result Reference Keywords Preview Gene Name Type Object Name 1 004457 Document c:\CMIXMAP\004457	rative Data
Description Definition X Name: 004457 Reference Keyword values Type: Document	CATPart ATPart ATPart ATPart ATPart
File name: c:\CMIXMAP\004457.CATPart Select document Select external feature	Select Select Preview
Select document in session	Launch
OK Gancel	

Figure 54: Edit catalog in CATIA



Use the *Select document in session* button to build the catalog from parts or files that were opened from Teamcenter via CMI.

Update or Create Catalog



The administrator needs to set CMI_ENABLE_CMICATALOGUPDCRECMD=ON in the CATIA environment in order to enable the *Update or Create Catalog* function. The *Update or Create Catalog* icon is enabled when you have a catalog active.



Update or Create Catalog allows saving new or updated catalogs in Teamcenter. It will manage the necessary keyword attributes so that the items contained in the catalog can be retrieved from the Teamcenter database instead of the local file

system.



After starting the *Update or Create Catalog* command the catalog document is analyzed and the following dialog is shown.

MI - Synchronize Catalog			?>
Catalog Filename:	Catalog Nan	ne:	
ExampleCatalog.catalog	ExampleCa	italog.catalog	
Name	Туре	Status	
20080208_Model1	Open	Updated by CMI	
20080207_Model1	Open as copy	Loaded by CMI	
20080225_Model1	Open	Not known by CMI	
	Instantiate	Created by Chi	
Edit selected			Synchronize
]			
			Close

Figure 55: Synchronize Catalog dialog

For new catalogs that were not already opened from Teamcenter, the user can change the file name which should be used in Teamcenter.

The type can be **Open**, **Open as copy**, and **Instantiate**. These types describe the way in which the items will be handled when the catalog is used with the **Manage Catalogs** command.

- Open
 - Open the referenced object in CATIA so that the existing Teamcenter item is used (e.g. standard part).
- Open as copy
 - Open the referenced object in CATIA so that it will be recognized as a new item in Teamcenter (e.g. templates).
- Instantiate Instantiate is used for Features and Power copies which will be instantiated in the active document.

The Status Field can be Loaded by CMI, Updated by CMI, Not known by CMI, and Created by CMI

- Loaded by CMI
- The item is from Teamcenter and already was in the catalog at load time.
- Updated by CMI
 - The item is from Teamcenter but the type was changed.
- Not Known by CMI
- The item is not from Teamcenter.
- Created by CMI

The referenced file was opened from Teamcenter and is new in the catalog.



After pressing the *Synchronize* icon CMI will check all entries and if there are unknown entries, the user must confirm, that he will continue.



Figure 56: Confirmation dialog for unknown entries in the synchronize catalog command



This indicates that there is an item referenced in the catalog, that is not managed by Teamcenter.



Next the catalog is registered or updated in Teamcenter. Figure 57 is shown when the Synchronize command ends successfully.

C	MI - Synchronize Catalog			<u>? ×</u>
	Catalog Filename: ExampleCatalog.catalog	Catalog Name ExampleCata	alog.catalog	
	Name 20080208_Model1 20080207_Model1 20080225_Model1 UDF_A	Type Open Open as copy Open Instantiate	Status Updated by CMI Loaded by CMI Not known by CMI Created by CMI	
	Edit selected			Synchronize
	Operation succeeded in Teamcenter.			Ø
1				Close

Figure 57: Synchronize Catalog with success

Support of CATIA V5 Released Cache

CMI supports the use of cgr files in the *released cache* of CATIA V5. For this purpose the cgr files of CATIA models are stored in Teamcenter. During *To CATIA* these cgr files are copied to the released cache instead of the CATIA models to the exchange map. In CATIA V5 the cgr files are loaded in visualization mode.



Use **Edit→Options** to set the CMI RII preferences.

Set "Transfer CGR-File to CATIA V5" to "Only CGR" or "CGR + geometry"



Use **Tools**→**Options** to set the preferences in CATIA V5.

Set "Work with the Cache System" to "On" and set the path to the released cache. "Check timestamps" must be "On".

Options	<u>? x</u>
Coptions General General Coptions General Coptions Coptions Coptions Coption Coption	Cache Advation Cg Management ENOVIAvym Nodes Customization Product Structure Pri Cache Activation Work with the cache system Cache Location Path to the local cache C:Documents and Settings/sd/uga/Local Configure Path to the released cache C:Documents and Settings/sd/uga/Local Configure Configure Cache Size Configure Configure Cache Size S00 M8 Timestamp GMT timestamp format GMT timestamp format
	OK Scancel

Figure 58: Tools→ Options dialog in CATIA

- These are the necessary preconditions to copy a CGR-file:
 - Work with the cache system in CATIA V5 is enabled.
 - The released cache is set and exists.
 - The CATIA V5 configuration-variable CMI_USERELEASEDCACHE is set to "ON".
 - The CMI RII preference "Transfer CGR-File to CATIA V5" is set to "Only CGR" or "CGR + geometry".
 - A valid cgr file exists for the CATIA model in Teamcenter.



If the CATIA V5 configuration variable CMI_SAVEADDITIONALCGR=ON is set, CMI RII stores a cgr file in Teamcenter whenever a CATPart is created/updated.

Optional commands

In the following section, optional commands are described which must be enabled by the administrator.

Update Position	
-0	To enable this function the administrator has to set the CATIA V5 environment CMI_ENABLE_CMIUPDATEPOSITIONCMD=ON. This function updates only the transformation matrices in Teamcenter. The CATProduct and CATPart files are not updated.
Update Parts	11
· · · ·	To get this function the administrator has to set the CATIA V5 environment CMI_ENABLE_CMIUPDATEPARTCMD=ON. This function updates all modified CATPart files in Teamcenter. Transformations and CATProduct files are not updated.

Restore Positions



To enable this function the administrator has to set the CATIA V5 environment CMI_RESTORE_POSITION=ON. This function restores the positions to their original state loaded from Teamcenter.

Choose Update Position



To get this function the administrator has to set the CATIA V5 environment CMI_ENABLE_UPDATEPOSITIONDIALOG=ON. This function is available for normal "Update" and the "Update Position" command.

oose Upda Model Upda	te Options ate Matrix Update			?
Update Yes Yes Yes Yes	Part Number (Parent) 001579 001579 001579 001579 000790	Instance Name Case.1 Screw.1 Screw.4 ConnectionRodModel.1	Part Number (Instance) 000780 000782 000782 000782 001593	
Toggle upo	date state			
_			🕒 ок 📔 🍛	Cancel

Figure 59: Choose Matrix To Update dialog



If you have changed some positions in the CATIA session this function allows you to select the matrices to be updated. If you select a line in the dialog the corresponding instance will be highlighted in the CATIA structure tree.

- Yes \rightarrow Matrix will be updated in Teamcenter
- No → Matrix will stay unchanged in Teamcenter

To change the state you can double click a line or select the line and press the *Toggle keep state* button.

Choose Update Geometry



To get this function the administrator has to set the CATIA V5 environment CMI_ENABLE_UPD_MODELSELECT_DIALOG=ON.

This function is available for normal *Update* and the *Update Parts* command.

Model Upda	ate Matrix Update		
Update	Part Number	File Name	
/es	000776	000776.CATPart	
Vo	001575	001575.CATPart	
/es	001577	001577.CATPart	
/es	001583	001583.CATPart	
/es	001585	001585.CATPart	
/es	001589	001589.CATPart	
/es	001593	001593.CATPart	
/es	001595	001595.CATPart	
/es	001597	001597.CATPart	
/es	001599	001599.CATPart	
Toggle upd	late state		

Figure 60: Choose Model To Update dialog



If you have changed some geometries in the CATIA session this function allows you to select the models to be updated.

- Yes \rightarrow Model will be updated in Teamcenter
- No → Model will stay unchanged in Teamcenter

To change the state you can double click a line or select the line and press the *Toggle keep state* button.

Administrator	Person, who configures the system, inserts users, manages user permissions and maintains the database.
Browser	Window that displays <i>icons</i> representing <i>objects</i> .
Check In	Action that takes from the users the right to update a work item.
Check Out	Action that gives the user the exclusive right to update a work item. Checking out an item creates a copy of the work item in the specified work location.
Configuration Con	text An attribute that determines which Item Revision should be displayed (for example, only the last revisions).
Dialog Window	Window in which the user enters information.
Field	Component of a <i>dialog window</i> in which the user can enter text.
Generic Workbenc	<i>h</i> Set of components such as windows, dynamic items and information items, used in <i>Teamcenter</i> integration products.
lcon	Graphical representation of an <i>object</i> .
List View	Style of <i>browser</i> window in which <i>objects</i> are viewed as small <i>icons</i> in a list with attribute values in columns.
Object	An item or relationship.
Palette	Any group of CATIA functions created for specific requirements.

Plot File	
	File in a specified format that can be plotted or opened in a viewing tool and represents a 2D view of a model.
Pop-Up Menu	The menu that appears when the user points an <i>icon</i> and holds the right mouse button pressed.
Query	To search the database for <i>objects</i> that match specific criteria.
Register	To make a file or directory known as an <i>object</i> maintained in the Teamcenter database.
Tree View	Style of <i>browser</i> window in which <i>objects</i> are displayed as relationships in horizontal branches.
Vault	Secure place for storing information. To access the data confined in a vault it is necessary to <i>check out</i> or revise the data.