

Ford Supplier Information

CATIA V5 to JT Version 22.XX.YYY

Software Installation Guide



Integrated with FEDE-C3PNG SER4.0

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Section 1. Introduction

Introduction

This document is intended for CATIA V5 Administrators only. It is assumed that the C3PNG compliant version of CATIA V5 is already installed and licensed correctly. It is also assumed that the installation process is undertaken by someone with the correct Administrator level access authority.

Installation Prerequisites

The following base packages are required to install the Ford Supplier C3PNG Release JT to CATIA V5 Interface

CATIA V5-6R2019 (R29) Service Pack 3 + Hotfix

Please refer to the Ford Supplier website to identify the specific Service Pack & Hotfix version level to be installed. Using the translator external to CATIA V5 only requires a minimum of CATIA V5 R29 GA.

The JT-CATIA V5 interface makes use of a combination of both CATShape and CGR data to graphically represent the JT data that is inserted in the assemblies. The ability to create data of these types is enabled by the inclusion of the CATIA V5 'CNA - Compartment and Access 2 Product' module. Therefore ensure that this package is installed into your installation.

CNA - Compartment and Access 2 Product

Managing the conflict between Ford & Dassault Systemes JT-V5 Multi-CAD Architecture

Important Note

With the introduction of CATIA V5-6R2019 Dassault Systemes are delivering their basic Multi-CAD infrastructure as part of the base CATIA V5 installation. The basic DS Multi-CAD infrastructure causes a conflict with the Ford JT to V5 mechanism when running inside of the CATIA application. Therefore it is necessary to disable the basic DS Multi-CAD environment prior to running the Ford processes. This is achieved by simply renaming one of the DS supplied DLL files (CATMCIArchitecture.dll) located within the bin folder of the CATIA V5 installation. Scripts are provided to perform both the task of managing this conflict by simply renaming the DLL file in its original location.

Therefore as an Administrator user you can run the following scripts;

- **%TS_INST%\bin\disable_v5r29_CATMCIArchitecture.cmd** – this script renames the DLL and therefore allows the Ford Multi-CAD process to operate interactively within CATIA V5

- **%TS_INST%\bin\enable_v5r29_CATMCIArchitecture.cmd** – this script restores the DLL to its original name therefore allowing the DS Multi-CAD process to operate interactively within CATIA V5 and disables the Ford Multi-CAD process from operating

Microsoft Visual C++ Redistribution Requirements for Windows Users

Important Note

This version of the translator is based upon CATIA V5, JT Open and other third party libraries. Consequently for Windows users there is a pre-requisite to install the VC++ Redistribution libraries associated with the API releases. A number of executables are provided to install these libraries in the directory named %TS_INST%\VCREDIST of the installation. As a user with System Administrator privileges simply execute the all of the files in the VCREDIST directory. This will install the necessary libraries onto your machine.

Note, other applications that also have the same dependency of this Microsoft VC++ application may have already installed the libraries onto your machine. In this case installing the libraries for a second time will not have a detrimental impact on your machine. Therefore in these circumstances you may elect not to install the libraries for a second time.

Copies of the files that must be installed, if not previously installed, at this release are named;

- **%TS_INST%\VCREDIST\dotNET\dotnetfx45_full_x86_x64.exe**
- **%TS_INST%\VCREDIST\VC8\vc redistrib_x64.exe**
- **%TS_INST%\VCREDIST\VC9\vc redistrib_x64.exe**
- **%TS_INST%\VCREDIST\VC10\vc redistrib_x64.exe**
- **%TS_INST%\VCREDIST\VC11\vc redistrib_x64.exe**
- **%TS_INST%\VCREDIST\VC12\vc redistrib_x64.exe**
- **%TS_INST%\VCREDIST\VC14\vc redistrib_x64.exe**
- **%TS_INST%\VCREDIST\VC141\vc redistrib_x64.exe**

Supported Operating Systems

The following list operating systems are supported by the C3PNG JT to CATIA V5 Interface.

- **Windows 64bit**

Obtaining the Software

Installation packages are available for the specified operating systems. These packages can be obtained from the Theorem Solutions Ford Supplier Distribution website which is accessed via the Ford Supplier webpage at <https://web.c3p.ford.com/release/SER1>

The download packages are named

- **theorem_22.xx.yyy.zip** – For Windows 64bit users

Note! The xx.yyy field of the file name 22.xx.yyy will be replaced with the specific version used for a given release e.g. 22.1.001

Copies are available for distribution by CDROM if required, contact either Theorem Solutions or your Theorem Solutions software reseller a CDROM will be sent to you directly.

Disk Space Requirements

The overall disk space requirements to install the translator are dependent upon the operating system used. Therefore the following list identifies the disk space required for each operating system supported.

- Windows 64bit = Approx. 570 Mb

Section 2. Installation Process

Installation Directory

It is assumed that CATIA V5 installation is located in the directory C:\Program Files\Dassault Systemes\B29. During the software installation a new directory named theorem will be created within the C:\Program Files\Dassault Systemes\B29 directory. Therefore the default installation directory will be named C:\Program Files\Dassault Systemes\B29\theorem.

The software may be relocated into an alternate directory structure of your choice. However please contact Theorem Solutions for guidance before installing the software into an alternate directory structure.

Installation Process for Windows Users

Copy the installation package into the installation directory **C:\Program Files\Dassault Systemes\B29**

Extract the files from the installation package "**theorem_22.xx.yyy.zip** "

The initial installation directory name will be named **theorem_22.xx.yyy** Rename this directory to become **theorem** such that the directory named **C:\Program Files\Dassault Systemes\B29\theorem** contains sub-directories with names such as bin, FlexIm, data etc.

The following edits need to be made to the CATEnv file that is used within CATIA V5. The standard CATEnv file for C3PNG release is named **C:\ProgramData\Dassault Systemes\CATEnv\CATIA_V5R29_CAA.FEDE.txt** Update this environment file and add or modify the following settings

TS_INST – Set the path to the Theorem translator installation

- **TS_INST=C:\Program Files\Dassault Systemes\B29\theorem**

TS_CGR_TYPE – Sets the type of CGR output required. Available settings are QUICK, BREP_FACET or PRECISE. For information regarding the settings refer to the JT – CATIA V5 Command Line Reference Guide

- **TS_CGR_TYPE=QUICK**

TS_CFILE_VIS – Location of the translator configuration file used for CGR creation. Note the name should match the setting used for the TS_CGR_TYPE. Therefore available settings are;

- **jt_read_visualization_quick.config**
- **jt_read_visualization_brep_facet.config**
- **jt_read_visualization_precise.config**
- **TS_CFILE_VIS=%TS_INST%\etc\jt_read_visualization_quick.config**

TS_CFILE_DES – Location of the translator configuration file used for CATShape creation

- **TS_CFILE_DES=%TS_INST%\etc\jt_read_design.config**

THEOREM_LICENSE_FILE – Location of the Theorem Solutions license server

- **THEOREM_LICENSE_FILE=7601@license_server_hostname**

TS_V5PATH – Set the path to the Theorem CATIA V5 extensions

- **TS_V5PATH=%TS_INST%\B29\win_b64**

PATH – Add the path for the translator to the existing path setting

- **PATH=%TS_V5PATH%\code\bin;C:\Program Files\Dassault Systemes\B29\..... etc**

CATDLLPath – Add the path to the translator to the existing path setting

- **CATDLLPath=%TS_V5PATH%\code\bin; C:\Program Files\Dassault Systemes\B29\..... etc**

CATDictionaryPath – Add the path to the Theorem dictionary to the existing path setting

- **CATDictionaryPath=%TS_V5PATH%\code\dictionary;C:\Program Files\Dassault Systemes\B29\..... etc**

Example Windows CATEnv File

The following example CATEnv file shows a default example file for the Windows platform with the specified edits highlighted in **BLUE** text.

Note this file has a sequential logically dependency structure. Therefore, the setting of a variable, e.g. TS_INST=C:\Program Files\Dassault Systemes\B29\theorem must precede the usage of the variable e.g. TS_CFILE_DES=%TS_INST%/etc/jt_read_design.config. CATIA V5 will not operate correctly if this rule isn't adhered to.

```
!-----  
! DASSAULT SYSTEMES - V5 ENVIRONMENT FILE  
!-----  
! MODE : Global  
! TYPE : CATIA  
! TMSTMP : 1139570754  
!-----  
TS_INST=C:\Program Files\Dassault Systemes\B29\theorem  
TS_CGR_TYPE=QUICK  
TS_CFILE_VIS=%TS_INST%\etc\jt_read_visualization_quick.config  
TS_CFILE_DES=%TS_INST%\etc\jt_read_design.config  
THEOREM_LICENSE_FILE=7601@license_server_hostname  
TS_V5PATH=%TS_INST%\B29\win_b64  
CATInstallPath=C:\Program Files\Dassault Systemes\B29\win_b64  
CATDLLPath=%TS_V5PATH%\code\bin;C:\Program Files\Dassault  
Systemes\B29\win_b64\code\bin  
CATICPath=C:\Program Files\Dassault Systemes\B29\win_b64\code\productIC  
CATCommandPath=C:\Program Files\Dassault Systemes\B29\win_b64\code\command  
CATDictionaryPath=%TS_V5PATH%\code\dictionary;C:\Program Files\Dassault  
Systemes\B29\win_b64\code\dictionary  
CATDocView=C:\Program Files\Dassault Systemes\B29\win_b64\doc  
CATReffilesPath=C:\Program Files\Dassault Systemes\B29\win_b64\reffiles
```

```

CATFontPath=C:\Program Files\Dassault Systemes\B29\win_b64\resources\fonts
CATGalaxyPath=C:\Program Files\Dassault Systemes\B29\win_b64\resources\galaxy
CATGraphicPath=C:\Program Files\Dassault
Systemes\B29\win_b64\resources\graphic;C:\Program Files\Dassault
Systemes\B29\win_b64\resources\graphic\icons;C:\Program Files\Dassault
Systemes\B29\win_b64\resources\graphic\figures;C:\Program Files\Dassault
Systemes\B29\win_b64\resources\graphic\splashscreens;C:\Program Files\Dassault
Systemes\B29\win_b64\resources\graphic\symbols;C:\Program Files\Dassault
Systemes\B29\win_b64\resources\graphic\textures
CATMsgCatalogPath=C:\Program Files\Dassault
Systemes\B29\win_b64\resources\msgcatalog
CATFeatureCatalogPath=C:\Program Files\Dassault
Systemes\B29\win_b64\resources\featurecatalog
CATDefaultCollectionStandard=C:\Program Files\Dassault
Systemes\B29\win_b64\resources\standard
CATStartupPath=C:\Program Files\Dassault Systemes\B29\win_b64\startup
CATW3ResourcesPath=C:\Program Files\Dassault Systemes\B29\win_b64\docs
CATReferenceSettingPath=
CATUserSettingPath=CSIDL_APPDATA\DassaultSystemes\CATSettings
CATCollectionStandard=
CATTemp=CSIDL_LOCAL_APPDATA\DassaultSystemes\CATTemp
CATMetasearchPath=DSKEY_TMPDIR
CATW3PublishPath=DSKEY_TMPDIR
CATSharedWorkbookPath=DSKEY_TMPDIR
CATErrorLog=CSIDL_LOCAL_APPDATA\DassaultSystemes\CATTemp\error.log
CATReport=CSIDL_LOCAL_APPDATA\DassaultSystemes\CATReport
CATDisciplinePath=
USER_HOME=CSIDL_PERSONAL
JAVA_HOME=%JAVA_HOME%
CLASSPATH_JDBC=
CLASSPATH=%CLASSPATH_JDBC%;%CLASSPATH%
PATH=%TS_V5PATH%\code\bin;C:\Program Files\Dassault
Systemes\B29\win_b64\code\bin;C:\Program Files\Dassault
Systemes\B29\win_b64\code\command;%JAVA_HOME%\bin;%PATH%

```

Configuring the Translator to Run from the Command Line

Having installed the software in the default installation directory of **C:\Program Files\Dassault Systemes\B29\theorem** you'll find a file named **ts_env.bat**. When running the translator from the command line various system settings are obtained from data within this file. This data enables the translator to locate the correct CATIA V5 settings that are being used as well as confirming the actual software installation location. If you've decided to install either CATIA V5 or the translator into an alternate directory location then it will be necessary to edit this file and change the default settings to reflect your actual installation.

The default values found in the supplied **ts_env.bat** file are;

```

set CATIAV5R29_INST=C:\Program Files\Dassault Systemes\B29
set CATIAV5_ENV=CATIA_V5R29_CAA.FEDE
set CATIAV5_DIRENV=C:\ProgramData\Dassault Systemes\CATEnv
set TS_INST=C:\Program Files\Dassault Systemes\B29\theorem
set TSC_TEMP_DIR=%TEMP%
set THEOREM_LICENSE_FILE=7601@license_server_hostname

```

Note: You will need to edit the supplied **ts_env.bat** file and uncomment the setting for **THEOREM_LICENSE_FILE**. Then change the value of the variable *license_server_hostname* to be the actual hostname of the machine used as the license server

The Translator Configuration File

When running the translator in the Catia5 interactive mode options are able to be invoked by using the translator configuration file. These files are referenced in the CATenv file using the TS_CFILE_DES and TS_CFILE_VIS settings. The configuration file is a simple text file containing a number of command line translator options, one option per line of the configuration file.

A Ford recommended JT Read Design configuration file is delivered as part of the software distribution. The filename is %TS_INST%\etc\jt_read_design.config and contains the following translator settings;

```
read_pmi
dont_print_info
assemble_faces
edge_curves
dont_map_layers
noinfo
nowarnings
off_ditto
```

For additional information please refer to the JT – CATIA V5 Command Line User Reference Guide for a detailed definition of these specified options.

Section 3. License Management

Introduction

This outlines FLEXlm based licensing for Windows users. The information below defines how to use the FLEXlm license mechanism with the any of the Theorem Solutions CADverter software products.

Loading the FLEXlm Software

The FLEXlm software is loaded automatically during software installation.

The License File

To obtain a valid license file you must supply the output generated when using the theorem_composite executable located in the flexlm directory of the installation. An example of the output generated is shown below.

Send a copy of the output generated to your software vendor to enable the license to be created.

Your license file will usually be sent to you by E-mail or if necessary by FAX It will contain other text such as instructions on how to load it; this text will not affect the running of the license file.

If you receive the file by FAX you will need to use any text editor to enter the data.

An example license file is shown below:

```
SERVER server1.theorem.com COMPOSITE=18642C02FFCF 7601
DAEMON theorem /usr/theorem/flexlm
INCREMENT DirectModel_Catia5_eval theorem 15.0 24-oct-2012 \
1 37CA284B337E VENDOR_STRING=<license_type_purchased> \
ck=87 SIGN=354805646156
```

Only the important lines are shown in this example. They are split up into three types:

SERVER followed by the HOSTNAME server1.theorem.com), the COMPOSITE HOSTID (*COMPOSITE=18642C02FFCF*) and the PORTID (*7601*). The COMPOSITE HOSTID and the HOSTNAME must match output generated from the theorem_composite executable when run on your license server machine. If you change your processor then the license will no longer function and must be re-cut by your software provider.

DAEMON followed by the path to the License server daemon executable. If you have installed the CADverter software in a path other than /usr/theorem then you must edit this line to reflect the location of the flexlm/theorem file.

INCREMENT followed by the feature name (e.g. *DirectModel_Catia5*) and other license data to protect the feature. These lines must not be edited or the FEATURE **will not** work.

Note: text may be wrapped over more than one line. When this occurs the continuation character is denoted by a '\'. The continuation line must then start with a 'tab' character.

Once the license file has been installed you may start the license manager.

License Manager Utility – Windows Users

Use the FLEXIm utility lmttools located in the %TS_INST%\flexIm directory for all license functions on Windows.

FLEXIm On-Line Documentation

The FLEXIm License manager software package contains a complete set of End User Documentation written in HTML format. To review these documents point your browser to

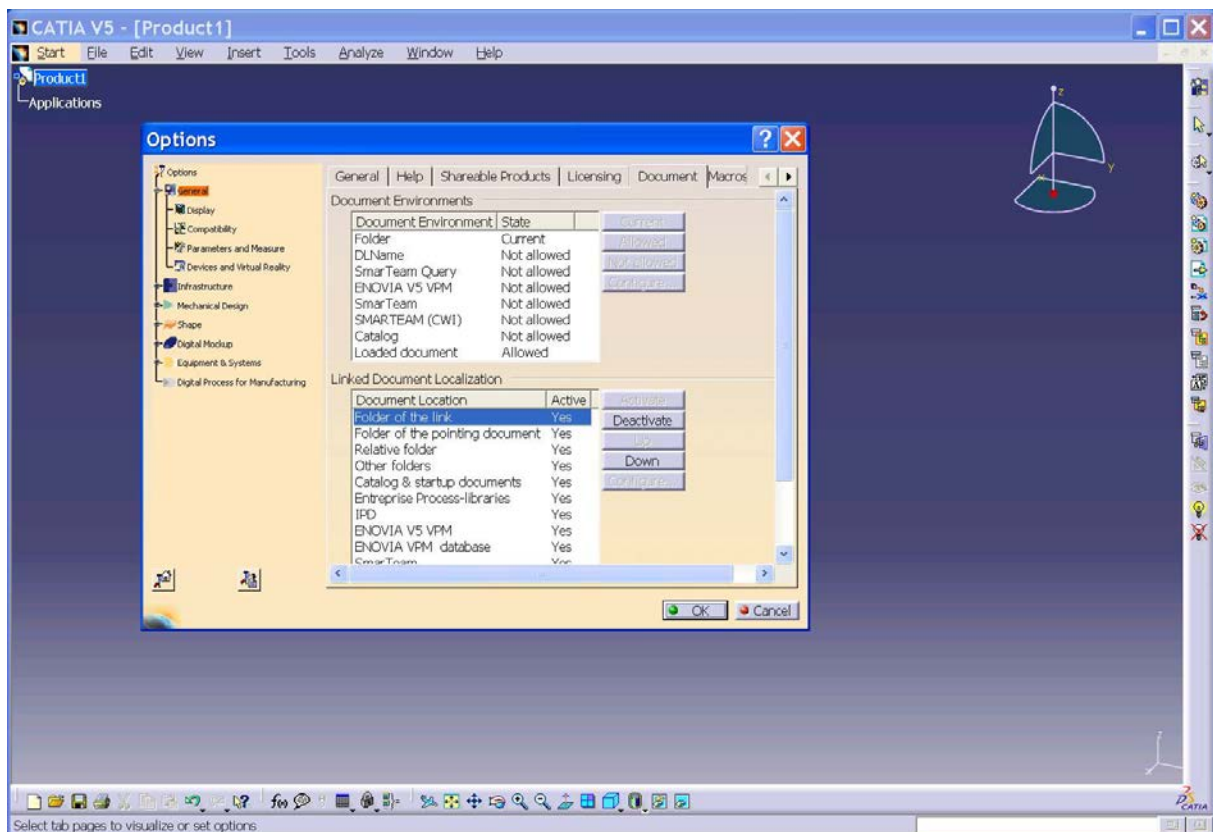
`%TS_INST%\flexIm\doc\TOC.htm`

Section 4. Testing the Installation

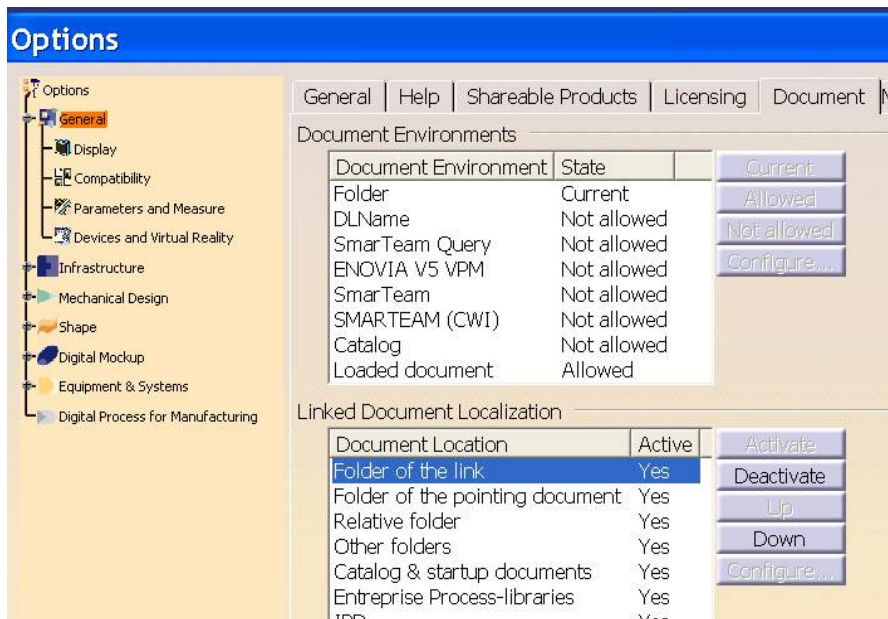
Test Pre-Requisites

Note when using the Insert Existing Component command CATIA V5 will reference the “Folder of the link” settings of the current CATIA V5 environment. Therefore to enable the interactive insertion of JT files the setting of the “Folder of the link” must be active.

This is activated using the CATIA V5 Tools>Options>General>Document menu. Ensure that the “Folder of the link” is ACTIVE before interactively attempting to insert a JT file into the active session.

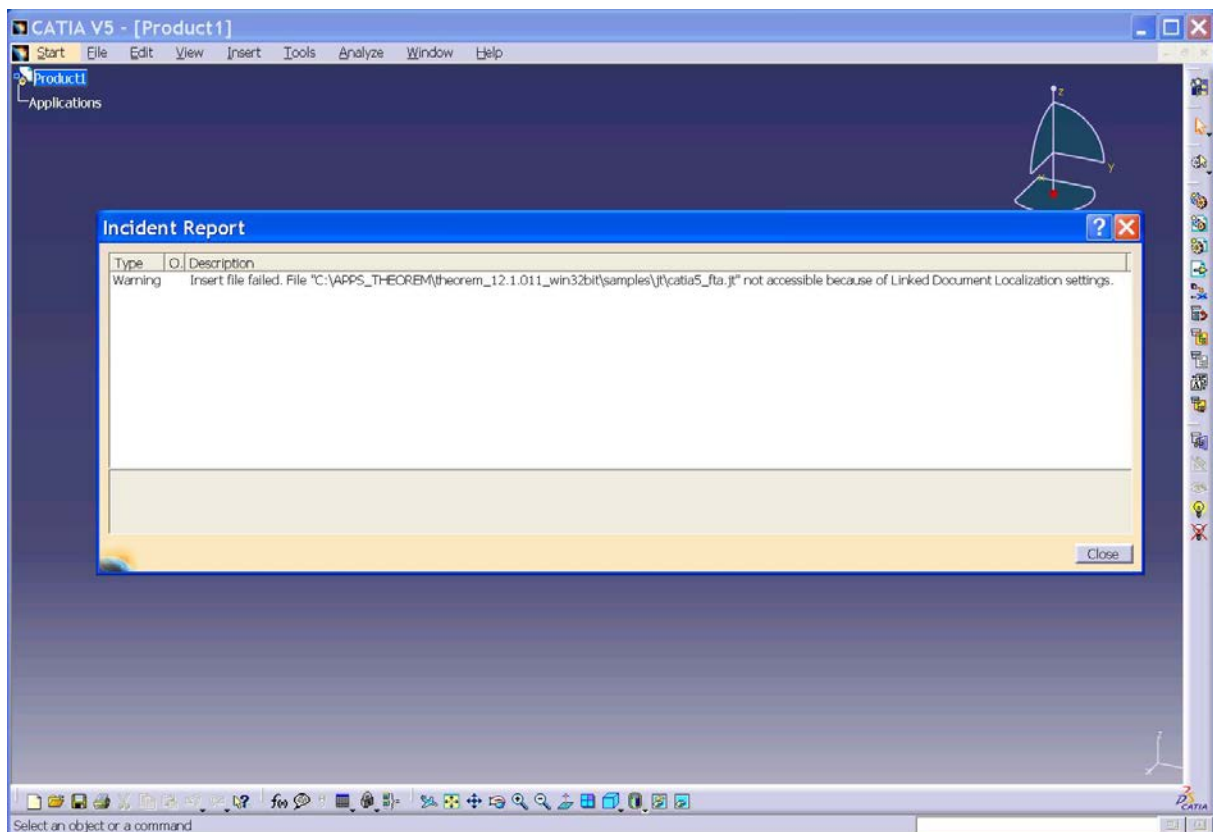


CATIA V5 Interface showing the Tools>Options>General>Document Menu



The CATIA V5 Menu Showing the “Folder of the Link” setting Activated

If this setting is deactivated the following error message will be reported to the screen when you attempt to insert the JT file into the active session

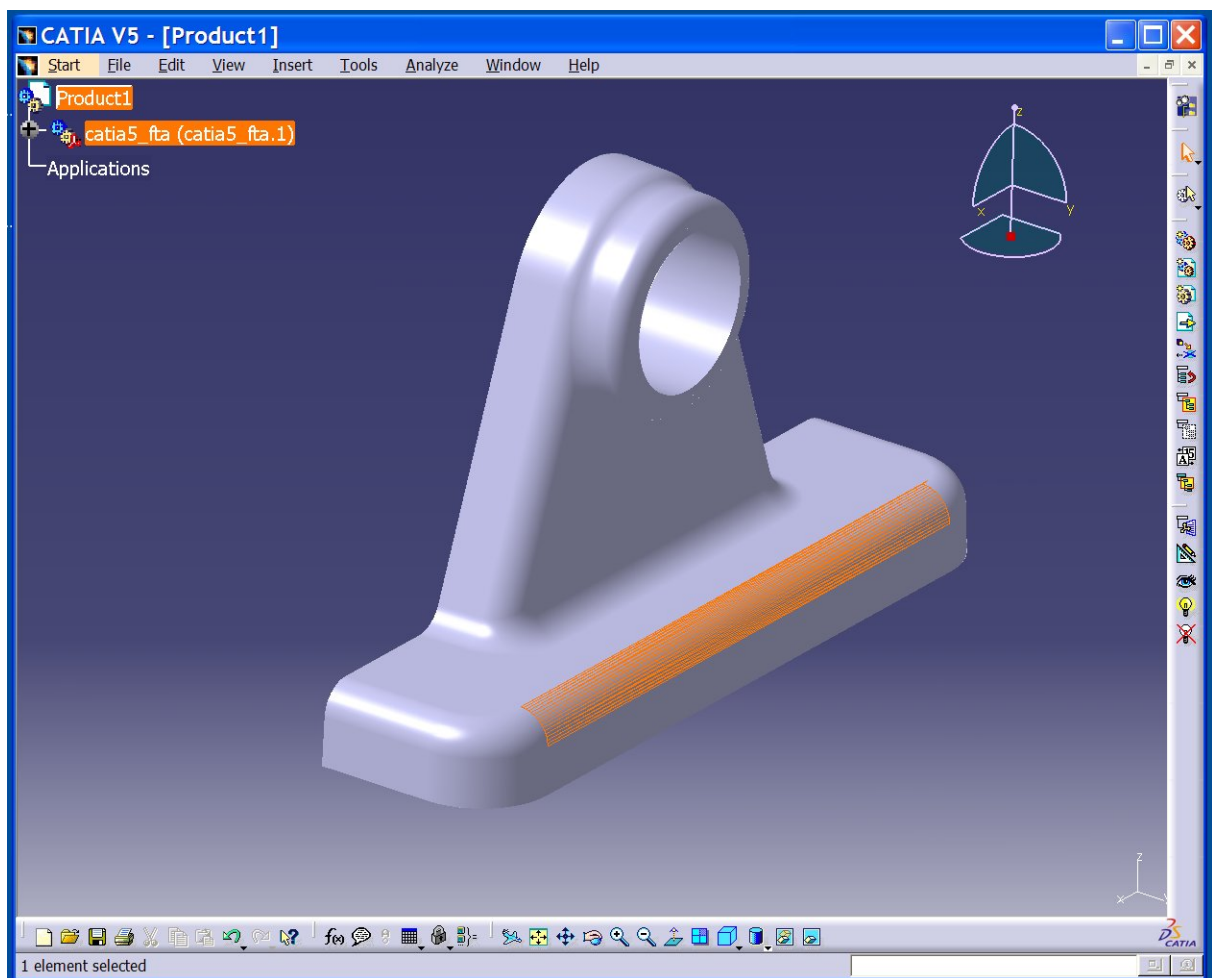


The CATIA V5 Error Message generated when the “Folder of the link” setting is Deactivated.

Test Process

A sample JT file is provided to test the installation of the software. The file named catia5_fta.jt and is located in the %TS_INST%/samples/jt directory.

To test the installation start CATIA V5 using the modified CATEnv environment. Then using a new CATIA V5 CATProduct select the Insert>Insert Existing Component menu, browse to the sample directory and select the file catia5_fta.jt. Assuming that caching is switched on in the current environment CATIA V5 will display the JT file using a CGR representation.

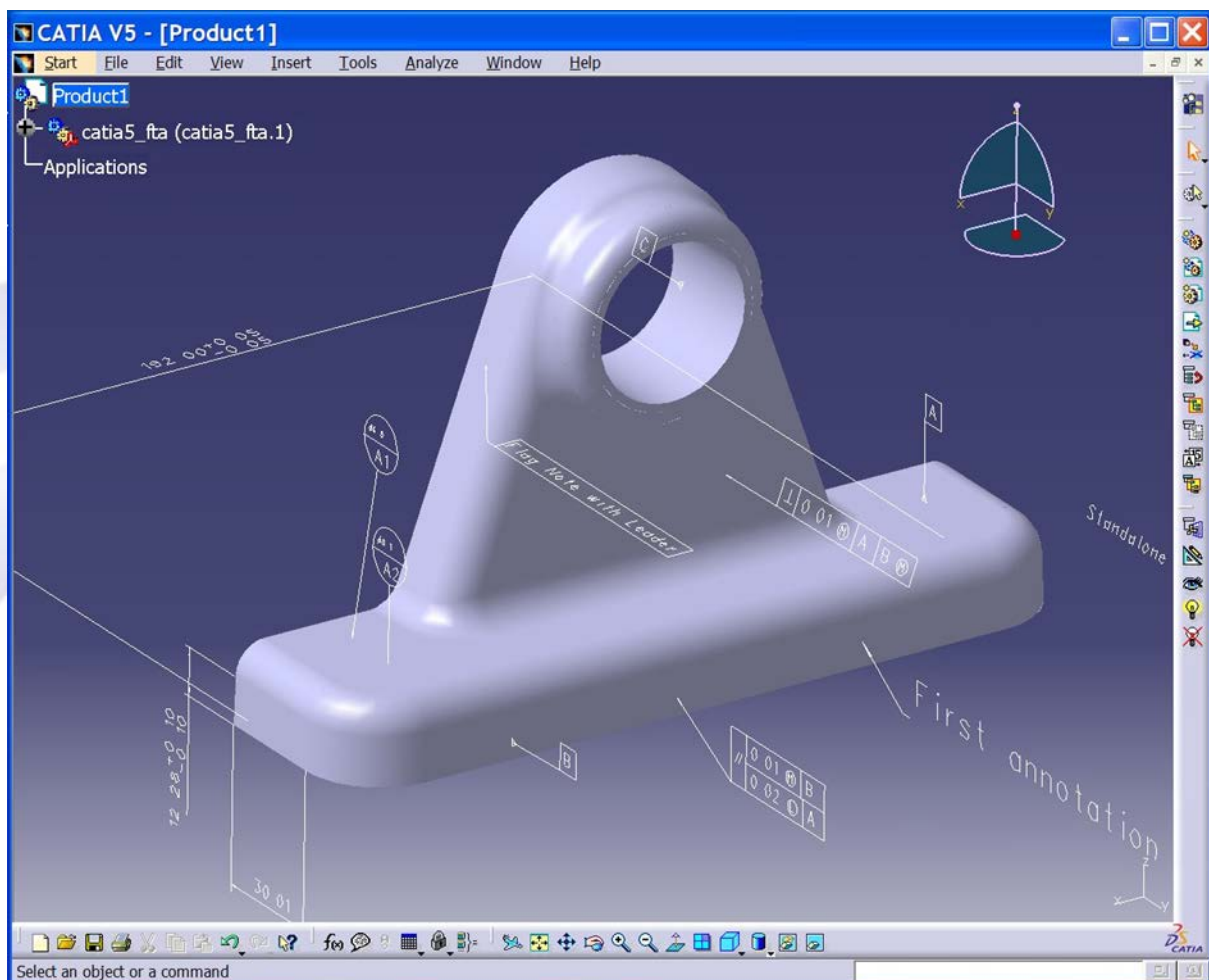




The CGR file is automatically generated in the directory specified in the CATIA V5 Tools>Options>Infrastructure>Product Structure>Cache Management tab. Note if the CGR file is retained then the translation will not take place again until such time as the JT file is itself updated. The mechanism ensures that CATIA V5 presents the latest available representation of the JT data.

If the current cache settings is switched off then the JT file would have been translated into a CATShape representation and stored in the current CATTemp directory.

Following this select the item in the specification tree and then using the right hand mouse button menu select the option Representations>Design Mode the display will then change to show a CATShape representation of the JT file including the PMI data.



This completes the installation test. If you fail to see either of the previous pictures refer to Section 5 Trouble Shooting to read some of the common problems that you may be experiencing.



Section 5. Trouble Shooting

Common Problems

- Check that the license file is called **\$TS_INST/flexlm/license.dat** or if an alternative filename is used ensure that the filename matches the setting of the environment variable **THEOREM_LICENSE_FILE**
- The first line of a FLEXlm license.dat file should resemble the following
SERVER mymachinename COMPOSITE= 0800366f1102 7601
The information reported for mymachinename and COMPOSITE id value **MUST** match the output data generated when using the theorem_composite license manager utility.
- The current system date and time should be correct. If incorrectly set, the license file may NOT be valid.
- If you have installed the software in a non-default location then ensure that you edit the ts_env.csh or ts_env.bat file in the installation directory.
- If when starting CATIA V5 you see a message stating that a VEL license can't be located this is most likely due to old values retained in your CATSettings directory. This message doesn't have a detrimental impact on the operation of the system. However to overcome this message being reported you can remove the complete CATSettings directory before starting CATIA, the CATSettings directory will then be automatically recreated.
- If the translator fails to operate from within the CATIA V5 first check that the FLEXlm license process is running and then attempt to run the translator from the command line. Refer to the Command Line User Guide for the translator command line syntax.

- When attempting to use "Insert Existing Component" CATIA V5 displays the message

"Warning Insert file failed. File...\jt\catia5_fta.jt" not accessible because of Linked Document Location settings."

This issue is caused by the setting for the "Folder of the link" being deactivated. To insert JT files into an active CATIA V5 session this setting must be activated. See Section 4 "Testing the Installation: Test Pre-Requisites" for instructions on how to resolve this issue.

- When attempting to use Insert "Existing Component" CATIA V5 displays the message

**"Cannot Insert Files(s) :.....\jt\catia5.jt.
Insert Failed due to invalid or inconsistent extension type. Extension Type doesn't exist or license is not granted"**

The most likely causes of this message are either a typing error in the CATEnv file. Check all additional settings in the file, especially the setting of CATDictionaryPat which controls the interface between CATIA V5 and the translator. Alternatively the issue may be due to the fact that the nominated CATEnv isn't being referenced when CATIA is starting. Check the launching of CATIA and ensure that the right CATEnv is being used.