

# **User Guide** 3DExperience - JT

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0	THEOREM HOUSE
	MARSTON PARK
	BONEHILL RD
	TAMWORTH
	B78 3HU
	UNITED KINGDOM

S +44(0)1827 305 350

 THEOREM SOLUTIONS INC. 100 WEST BIG BEAVER TROY MICHIGAN 48084 USA

🜭 +(513) 576 1100



## Contents

About Theorem4	,
Theorem's Product Suite5	,
3DExperience to JT – CADTranslate6	)
The 3DExperience to JT Bi-directional Translator6	;
Primary Product Features	;
Primary Product benefits?6	;
Getting Started7	,
Documentation & Installation Media7	,
Installation8	;
License Configuration	;
Using the Product	;
Running the Product	;
Translating Interactively from within 3DExperience9	)
Launching 3DExperience with Theorem Plug-ins9	1
Interactive Export to JT	1
Interactive Import to 3DExperience12	,
Theorem Interactive Conversion Settings14	!
Configuration Manager183DExperience to JT18JT to 3DExperience24	
Translating in Batch using CATUtil – DataExchangePLMBatch	;
28 Launching DataExchangePLMBatch	;
Batch Export to JT	1
Batch Import from JT	ł
Changing the Options Selected for a Batch Export / Import	;
Changing the JT Configuration Selected for a Batch Export	)
Translating on the Command Line40	,
Log File Generation	:
Export process Log Files	
Import process Log Files	!
3DExperience Environment Files45	,
Appendix A – JT Configuration File46	,
Appendix B – Large Assembly Processing (LAP)53	;



Appendix C – Property Mapping Files	56
Appendix D – PMI Type Filter	58
Appendix E – JT Template Files	59
Appendix F – Creating a Login Ticket	60



## About Theorem



Theorem Solutions is a world leader in the field of Engineering Data Services and Solutions. This leadership position stems from the quality of our technology and the people in the company. Quality comes not only from the skills and commitment of our staff, but also from the vigorous industrial use of our technology & services by world leading customers.

We are proud that the vast majority of the world's leading Automotive, Aerospace, Defence, Power Generation and Transportation companies and their Supply chains use our products and services daily. Working closely with our customers, to both fully understand their requirements and feed their input into our development processes has significantly contributed to our technology and industry knowledge.

Theorem Solutions is an independent UK headquartered company incorporated in 1990, with sales and support offices in the UK and USA. Theorem has strong relationships with the major CAD and PLM vendors, including Autodesk, Dassault Systemes, ICEM Technologies (a Dassault company), PTC, SolidWorks, Spatial Technology and Siemens PLM Software. These relationships enable us to deliver best in class services and solutions to engineering companies worldwide.



## **Theorem's Product Suite**

Theorem have 3 main Product brands. These are:



#### CAD**Translate**

Direct translation of 3D data to or from an alternate CAD, Visualisation or Standards Based format.

See our <u>website</u> for more detail.



#### CAD**Publish**

The creation of documents enriched with 3D content

See our <u>website</u> for more detail.



#### Theorem XR

Visualization for Augmented (AR), Mixed (MR) and Virtual (VR) Reality applications

See our <u>website</u> for more detail.



## 3DExperience to JT – CADTranslate

## The 3DExperience to JT Bi-directional Translator

The 3DExperience to JT translator may be installed on a number of machines accessing a central network-floating license.

The 3DExperience to JT Translator is a bi-directional direct database converter between Dassault Systemes 3DExperience application and JT file format, used by the Siemens Teamcenter Visualization products.

It enables the user to convert all forms of 3D Mechanical Design Geometry and Assembly data, together with system defined attribute information and colour information, between these two systems. This product is designed for companies using 3DExperience who have selected JT to be their main method of collaboration and communication between OEMs and their customers or suppliers.

It is also a major method of visualization and is used by companies using JT based solutions to translate their 3DExperience data into the JT format.

The translator can be invoked in either an interactive or batch mode.

### **Primary Product Features**

- Converts all types of geometry, wireframe, surfaces, trimmed surfaces (faces) and solid models.
- Converts assembly structure between both systems.
- Converts attribute data such as meta-data, colour and layer information and 3DExperience properties.
- Data can be filtered by layer and entity type during processing. Geometry can be filtered and selectively processed.
- Integrated with the 3DExperience installation.
- The conversion process can be run Interactively or in Batch Mode.
- Uses the 3DExperience API and Siemens JTOpen API to read and write data.
- In creating JT files a number of data types can be generated. A facetted representation, a JTBrep definition or an XTBrep definition. As standard a facetted representation is created with an option to select whether JTBrep or XTBrep definition is created.

## **Primary Product benefits?**

- Being a direct database converter, all pre and post processing is eliminated, saving time.
- Reduce costs due to processing time and increase overall conversion success levels by filtering input data and focusing the conversion to only those elements required.
- Reduce costs and risks associated to accessing the wrong version of data by integrating the conversion process into all related business processes.
- With over 30 years industrial use Theorem's product robustness and quality is well proven, reducing your business risk.

This document will focus on the 3DExperience to JT bi-directional product. For further information on other Theorem products please contact <a href="mailto:sales@theorem.com">sales@theorem.com</a>



## **Getting Started**

### **Documentation & Installation Media**

The latest copy of the User Guide documentation can be found on our web site at:

http://www.theorem.com/Documentation

Each product has a specific link that provides user documentation in the form of PDF's and Tutorials.

The latest copy of Theorem software can be found via the link above and by searching for the specific product. See image below:

Documentation selector	Filter by product       CATIA 3DEXPERIENCE <> JT
CATIA 3DEXPERIENCE <> JT	
Latest Release: Version V26.2	
Product Release Notes     User Guide     Installation and Configuration Guide	
JT File Analysis Documentation	
<ul><li>Analysis Utilities</li><li>Validation Utility</li></ul>	
Product Tutorials	
Configuration     Interactive Import     Interactive Export	
Legacy Product Release Notes:	
<ul> <li>Version 25.3</li> <li>Version 24.0</li> <li>Version 23.2</li> <li>Version 21.3</li> <li>Version 20.2</li> <li>Version 19.3</li> </ul>	

Each product has a specific link to the Product Release Notes, which contains a link to the download location of the installation CD.



### Installation

The installation is run from the .msi file download provided. For full details of the installation process, visit <a href="http://www.theorem.com/documentation">www.theorem.com/documentation</a>

## License Configuration

To run any product a valid license file and a Flex License Manager installation will be required. The Flex License Manager is run from the .msi file download provided. This can be accessed from the Product Release Notes. For full details of the installation process, visit <u>www.theorem.com/documentation</u>

### Using the Product

To use the product, follow the documented steps found in this document or follow the online video tutorials which can be found from <u>www.theorem.com/documentation</u>

### **Running the Product**

Once configured and licensed, the product is ready to be run. There are 3 distinct ways of running the translator:

- Interactively from within 3DExperience
  - The Interactive Interface provides a direct method of importing to and exporting from 3DExperience.
- In Batch via CATUtil DataExchangePLMBatch
  - The 3DExperience DataExchangePLMBatch Interface provides a direct method of invoking the translator. It can be used to translate single or multiple files at once.
- On the Command Line
  - A command line method of Invoking the translator is possible.



## Translating Interactively from within 3DExperience

### Launching 3DExperience with Theorem Plug-ins

The 3DExperience to JT translator allows an opened 3DExperience part or assembly to be exported directly to JT, and for a JT part or assembly to be imported directly into the 3DExperience application.

In order to translate from within 3DExperience, the application must be started using a Theorem environment, so that the appropriate Theorem partner plug-ins are available. *(See 3DExperience Environment files)* 

3DExperience can be started from a desktop shortcut created during installation.

Alternatively, it can be started via the script provided in the Translator installation located in:

#### <installation\_directory>\bin

The script name is:

#### start\_3DEXPERIENCE\_Theorem\_Multi-CAD\_JT\_CATIAV6R<version>.cmd

(where <version> should be substituted for the version of 3DExperience that you have installed – e.g. 2021x, 2022x, 2023x):



## Interactive Export to JT

Once the 3DExperience application has been launched, open the product or representation that is going to be exported to JT.



Select the arrow in the top right corner, then from the list displayed select Export.

	—	đ	×
Theorem U	к~ 🧐 +	Ŕ	?
	Save	>	×
	Share	>	
	3DMessaging		
	Export	>	
	Print		



In the Export dialog box displayed, ensure the 'Format' is set to JT\_THEOREM (\*.jt/\*.plmxml/\*.stpx). Select the required location for the file and ensure the Filename displayed is correct. Click OK to initiate the export to JT.

Export		×
▼ Required		
Format	JT_THEO	PREM (*.jt)
Target	File on d	lisk
Location	C:\temp	
Filename	BRAKE D	isd
▼ Options		
Save	report	
Location		C:\Users\stephen.clews\AppData\L
Report nam	e	ExportReport_(2045)
		Simulate OK Cancel

Export status of Succeeded displayed in Operation report window. JT files created in the location specified.

Operation report
▶ Options
▼ Objects
▶ To be exported ( 3 )
▼ Result
Status : Succeeded
For further details, please open the execution report.
OK Open report





## Interactive Import to 3DExperience

Once the 3DExperience application has been launched, it is possible for a model to be imported from JT. To do this select the '+' icon in the top right corner, then from the list displayed select import.

		-	đ	×
Theo	rem UK 🗸 聾	+	À	?
	New Content			×
	Import	>		
	Physical Produc	t		
	3D Part			
	Drawing			

In the Import dialog box displayed, ensure the 'Format' is set to JT\_THEOREM (\*.jt/\*.plmxml/\*.stpx). Click on the folder icon next to the Filename field and choose the required JT file, then click OK to initiate the import to 3DExperience.

Import			×
▼ Required			
Format	JT_THEOREM	√ (*.jt) ▼	
Source	File on disk	•	
Location	C:\Program	Files\Theorem\26.2_3DExperience_JT\sa	
Filename	nist_ctc_02_a	asme1_ct5210_rc.jt	
▼ Options Report			
Save regime	port		
Location		C:\Users\stephen.clews\AppDat	
Report name		ImportReport_(358)	
		3D Viewer OK Cancel	



Import status of Succeeded displayed in Operation report window. Imported data saved into the 3DExperience database and opened into a new tab in the user's session.

Operation report
▶ Options
▼ Objects
Imported objects (1)
▼ Result
Status : Succeeded
For further details, please open the execution report.
OK Open report





## **Theorem Interactive Conversion Settings**

The 3DExperience interface does not currently require the user to apply any specific settings for the translation. There are some general settings that should be checked if required (e.g. for PMI conversion.) These are accessed through *Preferences>Legacy Preferences>General>Compatibility>External Native 3D Formats.* 



This page is a standard Dassault Page that sets the preferred mode of conversion (in this case Exact), and also the general options **'Convert coordinates system'** and **'3D annotations'**. Both of which are toggled on.



There are also some Theorem settings that can be applied. These are accessed through *Preferences>Legacy Preferences> Infrastructure>Theorem* 

Two dedicated tabs under **'Theorem'** allow the user access to Theorem Configurations for importing from JT and exporting to JT. From this Panel, the user can select a predefined configuration or create a new configuration.

To create a new configuration, select the 'Launch Configuration Manager' command.

Preferences	? ×
Preferences  Preferences  Export JT Import JT Configuration  Parameters and Measure Immersive Virtuality Connections Content Access Natural Shape Infrastructure Product Structure Design Product Structure Design Product Finder Sugtem Finder Manufacturing Finder Supplay Simulation Finder  Material Definition Finder Infrastructure DELMIA Infrastructure DELMIA Infrastructure Shape  Kation	? ×
	OK Cancel

In the configuration manager window, select New, apply the relevant options, *(see Configuration Manager)*, then rename the configuration as required.

🔺 Theorem Solutions Co	nfiguration Manager	- 0	×
Exit Home CADverter Translator: 3DEXPERIENCE R2022x -> JT Selected Translator Selected Translator Copy			
Configuration Description: Run the translator with default options			
<default></default>	3DExperience Read JT Write General		
	Option Name	Value	
	Preferred Read Data Type	Exact	~ ^
	Read PMI		
	Read Captures	$\checkmark$	
	Read Views	$\checkmark$	
	Read FTA Reference Geometry		
	Read NOSHOW Entities		
Disable Points			
	Disable Axis Systems		
	Disable Wireframe		
	Disable Surfaces		
	Disable Solids		$\sim$



A Theorem Solutions Config	uration Manager	- 🗆 X
Exit Home CADverter Translato 3DEXPERIENCE R20 Selecto	r: D22x -> JT ed Translator Translator Configura	Clear Copy tions
Configuration <default></default>	Description: 3DExperience Read JT Write General	
New Option 2	Option Name	Value
	Preferred Read Data Type	Exact ~ ^
	Read PMI	
	Read Captures	$\checkmark$
	Read Views	
	Read FTA Reference Geometry	
	Read NOSHOW Entities	
	Disable Points	
	Disable Axis Systems	
	Disable Wireframe	
	Disable Surfaces	
	Disable Solids	□

Any new configurations created will be displayed in the Active Configurations list once it has been refreshed. To do this select '*Refresh Configuration list*'

Preferences		?	×
Preferences  Preferences  General  Display File-based Design Import Compatibility Parameters and Measure Immersive Virtuality Connections Content Access Natural Shape	Export JT Import JT Configuration Description Active Configuration Default New Option 2	?	×
Natural Shape Infrastructure Product Structure Design Product Finder System Finder System Finder Simulation Finder Simulation Finder Material Definition Finder Infrastructure DELMIA Infrastructure	Refresh Configuration list		
3D Annotations Infrastru Fastener Infrastructure Shape	OK	( C	ancel



Select the required configuration to make it the active configuration. This will be highlighted in blue when selected.

Preferences		?	×
Preferences         General         Display         File-based Design Import         Compatibility         Parameters and Measure         Immersive Virtuality         Connections         Connections         Connections         Content Rccess         Natural Shape         Infrastructure         Product Structure Design         Product Structure Design         Product Finder         System Finder         System Finder         System Finder         Sonal Content Infrastructure         Sonal Content Rccess         Natural Shape         Infrastructure         Product Structure Design         Product Finder         System Finder         Sonal Content Infrastructure         Son Shape Infrastructure         Sonal Content Infrastructure         Son Shape Infrastructure         Sonal Content Infrastructure         Sonal Content I	Export JT       Import JT         Configuration		
	OK	C	ancel



## Configuration Manager

### 3DExperience to JT

#### **3DExperience Read**

🛦 Theorem Solutions Configuration Manager - 🗆 X			<
CADverter Translato 3DEXPERIENCE R20	r: D22x -> JT Y Help New Delete CI New Delete CI	lear Copy	
Home Select	ed Iranslator Configurati	lons	
Configuration	Description:		
New Option 2	3DExperience Read JT Write General		
	Option Name	Value	
	Preferred Read Data Type	Exact	~
	Read PMI		
	Read Captures	$\checkmark$	
	Read Views	$\checkmark$	
	Read FTA Reference Geometry		
	Read NOSHOW Entities		
	Disable Points		
	Disable Axis Systems		
	Disable Wireframe		
	Disable Surfaces		
	Disable Solids		
	Read As Torus		
	Read As Cylinder		
	Read As Cone		
	Read As Conics		
	Read Axis Filter		
	Export Body Names		



Option	Description
Preferred Read Data Type	The setting options are EXACT (default) or TESSELATED. Command Line Syntax: • read_tess
Read PMI	Enables PMI data read (Default is OFF.) Command Line Syntax: • read_pmi_off – default • read_pmi – to turn on Note – When 'read_pmi' is enabled it also enables the 'fill_pmi_arrows', 'fill_pmi_text' and 'pmi_filled_text' options. These can be overridden by setting the Advanced arguments 'dont_fill_pmi_arrows' and/or 'dont_fill_pmi_text'
Read Captures	A secondary argument to <b>'Read PMI'</b> and allows control over whether captures are read as part of the process. Default is ON when <b>'Read PMI'</b> is marked as ON. Captures can ONLY be read when <b>'Read PMI'</b> is ON. Command Line Syntax: • read_captures - default • dont_read_captures - to turn off
Read Views	A secondary argument to <b>'Read PMI'</b> and allows control over whether views are read as part of the process. Default is ON when <b>'Read PMI'</b> is marked as ON. Views can ONLY be read when <b>'Read</b> <b>PMI'</b> is ON. Command Line Syntax: • read_views – default • dont_read_views – to turn off
Read FTA Reference Geometry	A secondary argument to <b>'Read PMI'</b> and enables the reading of FTA Reference Geometry. Default is OFF. FTA Reference Geometry can ONLY be read when <b>'Read PMI'</b> is ON. Command Line Syntax: • read_geometry – to turn on
Read NOSHOW Entities	<ul> <li>Read any entities that are in NOSHOW. Default is not to read NOSHOW entities.</li> <li>Command Line Syntax:</li> <li>noshow</li> </ul>
Disable Points	Switches off Point processing. Command Line Syntax: • disable_points
Disable Axis Systems	Switches off Axis System processing. Command Line Syntax: • disable_axes



Disable Wireframe	Switches off Wireframe processing. Command Line Syntax: • disable_wireframe
Disable Surfaces	Switches off Surface processing. Command Line Syntax: • disable_surfaces
Disable Solids	Switches off Solids processing. Command Line Syntax: • disable_solids
Read As Torus	<ul> <li>Read Toroidal surfaces in analytical form (default is NURBS.)</li> <li>Command Line Syntax: <ul> <li>read_torus</li> </ul> </li> </ul>
Read As Cylinder	<ul> <li>Read Cylindrical surfaces in analytical form (default is NURBS.)</li> <li>Command Line Syntax: <ul> <li>read_cylinder</li> </ul> </li> </ul>
Read As Cone	<ul> <li>Read Cone surfaces in analytical form (default is NURBS.)</li> <li>Command Line Syntax: <ul> <li>read_cone</li> </ul> </li> </ul>
Read As Conics	Read surfaces generated from a Conic in analytical form (default is NURBS.) Command Line Syntax: • read_conics
Read Axis Filter	<ul> <li>Enables a specified list of axis systems to be processed.</li> <li>Command Line Syntax: <ul> <li>read_axis <value></value></li> </ul> </li> <li>Where <value> is the name of the axis system. This can be formatted as per the examples below: <ul> <li>Axis System.1; - Only 'Axis System.1' will be processed</li> <li>*System.2; - Any axis system that includes 'System.2' at the end of the name will be processed, i.e. Axis System.2</li> <li>Axis System*; - Any axis system that includes 'Axis System' at the start of the name will be processed, i.e. Axis System.1, Axis System.2, Axis System.3, etc</li> <li>*System*; - Any axis system that includes 'System' anywhere in the name will be processed.</li> </ul> </value></li> <li>Multiple axis systems can also be processed. This is formatted as per the example below: <ul> <li>Axis System.1;Axis System.2;Axis System.3;</li> </ul> </li> </ul>



<ul> <li>body_names</li> </ul>	Export Body Names	<ul> <li>Maintains body names for parts that consist of multiple bodies.</li> <li>Command Line Syntax:</li> <li>body_names</li> </ul>
--------------------------------	-------------------	---



#### JT Write

🛕 Theo	orem Solutions Config	uration Manager		—	×
Exit	CADverter Translator 3DEXPERIENCE R20	: 22x -> JT Help New Delete Configura	Clear Copy		
Configur	ation	Description	0015		
<default></default>	•	3DEvnerience Read IT Write General			
New Opti	on 2	Option Name	Value		
		Config File			<b>-</b> 2
		comg ne			

Option	Description
Config File	<ul> <li>Allows a JT configuration file to be specified. "<ts_inst>/etc/tess.config" is the default. (See Appendix A for config file options.)</ts_inst></li> <li>Command Line Syntax: <ul> <li>-z <path configuration="" file="" jt="" to=""></path></li> </ul> </li> </ul>



#### General

🛓 Theorem Solutions Configuration Manager 🛛 🚽 🗙							
CADverter Translator:       Image: CADverter Translator:         Backbox       Backbox         Backbox       Backbox         Home       Selected Translator							
Configuration Description:							
<default></default>	3DExperience Read JT Write General						
New Option 2	Option Name Valu	Je					
	Mass Properties						
	Retain Assembly Structure						
	Advanced	Advanced					
	_						

Option	Description
Mass Properties	<ul> <li>Allows mass property information to be read.</li> <li>Command Line Syntax:</li> <li><i>mprops</i></li> </ul>
Retain Assembly Structure	<ul> <li>Enables Assembly Structure to be retained. (Default is ON.)</li> <li>Disabling this option will remove all assembly structure and collapse ALL geometry into a single selectable object.</li> <li>Command Line Syntax: <ul> <li>off_ditto – to turn off</li> </ul> </li> </ul>
Advanced	Allows any advanced arguments to be added to the configuration manager and applied during the translation.



### JT to 3DExperience

#### JT Read

🛕 Theo	🛦 Theorem Solutions Configuration Manager - 🗆 X						
Exit Home	CADverter Translator JT -> 3DEXP R2022 Selecte	Help New Delete Clea	r Copy				
Configura	ation	Description: JT Read 3DEXPERIENCE Write General					
New Optio	on 3	Option Name	/alue				
		Convert Surfaces to NURBS	<b>√</b>				
		Convert Edge Curves to NURBS	<b>√</b>				
		Read PMI					
		Read Wireframe					
		Read Points					
		Read Structure	✓				
		Import PMI Filter File				<b>5</b>	



Option	Description
Convert Surfaces to NURBS	Read XT Brep surfaces as NURBS surfaces (else read in native form). Default is ON.
Convert Edge Curves to NURBS	Read XT Brep edge curves as NURBS curves (else read in native Form). Default is ON.
Read PMI	Reads 3D PMI. Default is OFF.
Read Wireframe	Reads JT wireframe data. Default is OFF.
Read Points	Reads JT point data. Default is OFF.
Read Structure	Read assembly tree structure. Default is ON.
Import PMI filter file	Supply PMI filter file. " <ts_inst>/data/jt/jt_pmi_filter.txt" is the default. (See Appendix D for more information on PMI Filter Files.)</ts_inst>



#### **3DExperience Write**

🛦 Theorem Solutions Configuration Manager - 🗆 🗙						
Exit Home CADverter Translato JT -> 3DEXP R202	ed Translator					
Configuration	Description:					
<default></default>	JT Read 3DEXPERIENCE Write General					
New Option 3	Option Name Value					
	PLM Connection File			1		
	Axis Systems - Show					
	Property Mapping File			<b></b>		

Option	Description
PLM Connection File	The PLM Connection file is one of the xml files defining the connection parameters to the PLM database. It is required to create a connection and logging into a PLM session programmatically.
Axis Systems - Show	Show all the axis systems on the imported object in 3DExperience.
Property Mapping File	Map CAD properties using a mapping file. (See Appendix C for more information on Property Mapping Files.)



#### General

🛦 Theorem Solutions Configuration Manager - 🗆 🗙						
Exit Home CADverter Translator JT -> 3DEXP R2022:	translator					
Configuration	Description:					
<default></default>	JT Read 3DEXPERIENCE Write General					
New Option 3	Option Name Value					
	Retain Assembly Structure					
	Advanced					

Option	Description
Retain Assembly Structure	Enables Assembly Structure to be retained. (Default is ON.) Disabling this option will remove all assembly structure and collapse ALL geometry into a single selectable object.
Advanced	Allows any advanced arguments to be added to the configuration manager and applied during the translation.



## Translating in Batch using CATUtil – DataExchangePLMBatch

### Launching DataExchangePLMBatch

The Dassault Systemes CATUtil Batch Monitor tool can be launched with the correct Theorem enabled environment using the scripts provided in the Translator installation at:

#### <installation\_directory>\bin\start\_CATUTIL\_Theorem\_Multi-CAD\_JT\_CATIAV6R<revision>.cmd

(where *<revision>* should be substituted for the version of 3DExperience that you have installed – e.g. 2021x, 2022x, 2023x.)

It can also be started from the Tools>Utility workbench within an Interactive 3DExperience session.



In some cases, it may be desirable to ignore the interactive settings while translating using DataExchangePLMBatch.

This can be achieved by setting the following variable in the Theorem CATEnv file:

#### TS\_IGNORE\_JT\_CATSETTINGS=1



## Batch Export to JT

Here is an example showing what is required in preparation for a 3DExperience database selection and batch export.

#### Double click on DataExchangePLMBatch.

Batch Monitor	- 0	×		
e <u>E</u> dit <u>H</u> elp				
Utilities Start Processes				
Туре	Description	^		
FastenerRulesCheck	Unitary Fastener Rules Check			
Generic Batch	Allows to start any non-interactive executable			
ImportIfcCustMap	Batch IFC Import Create Custom Mapping File			
Import 3D XML file	Import a 3D XML file			
KnowledgeExpertReport	Solves rule set for features, occurrences and PLM objects and generates report for k			
Heavy Industry Manufacturing Operation	Generate Manufacturing features or Extract Manufacturing workshop documents			
MigrateThreadStandardToXML	Utility to convert Thread Standard files to XML format			
3DEXPERIENCE CAD Transition	Transition legacy CAD data to 3DEXPERIENCE CAD origin			
DataExchangePLMBatch	Batch app for data exchanges between DXF, IGES, STEP, Multi-CAD, ICEM formats a			
FBDI	Import files from previous version			
PLMCobotIntegrationBatch	Launch Integration Batch			
PLMThumbnailBuilder	Generate 2D and 3D thumbnails for PLM objects in database			
PLMltfCheck	Launch Interference Simulation computation.			
PLMPrintBatch	Print Batch			
QccBatchReport	Run Profiles and generates report for knowledge check			
Knowledge Report	Generates the report on the attributes of objects			
V6 CATIA Analysis Migration	Migrates CATIA Analysis Model to Physics App Model and the Elfini domain of mat			
Import Simulation Results	Imports Simulation Results in a Simulation Object			
Croate Sim Nav Data Dack	Croater cim nav data nackago for car filor	1		

Ensure that '*Export*' is selected as the data exchange operation, '*JT\_THEOREM*' is selected as the usage and '*jt'*, '*pImxml' or 'stpx*' is selected as the extension.

To add the required products for the batch export, select the 3DExperience Platform Object Search icon.

DataExchangePLMBatch	?	Х
Selected Operation         1. Select the data exchange operation         Export          2. Choose one usage         JT_THEOREM         3. Select the extension of your external files (or * for all available extensions of the list)         jt		
Object Selection         Nb       Name         Image: Ima	(	
Report       C:\Users\STEPHE-1.CLE\AppData\Local\Temp\         Report name:       GlobalResults.htm         Suffix for object report:       .htm         Image: Run Local       Image: Run Remote - host name :         Settings directory :       Image: Run Local		
Save	Ca	ancel



In the subsequent window displayed, add the required products using the correct attribute, operator and value ensuring that the correct object type has been selected. (E.g. Physical Product). Where required use an Asterix in the value field to identify multiple parts or assemblies.

3DEXPERIENCE Platfor	rm -> 3DVIA - Live F	ile Connector Objec	t Management	×
Object: Physical	Product		× +	
Extension: (No Exter	nsion)		~	
Easy Extended	Expert			
Attribute:	1	Operator:	Value:	
Title	~	Like V	BRAKE DISC & BOLTS	
	Add	Modify Remove	Clear	
Attribute	Operator	Value	End value	
Combine conditions	with: O AND 🖲	OR		
Using Case Sensitive	will make the query f	aster		
🗹 Case sensitive				
Add Results O R	eplace Results			
Apply				

3DEXPERIENCE Platfo	rm -> 3DVIA - Live Fi	e Connector Object Manage	ement	×	
Object: Physical Product v +					
Extension: (No Exte	nsion)		~		
Easy Extended	Expert			7	
Attribute:		Operator: Value:			
Title	~	.ike ~			
	Add	lodify Remove Clear			
Attribute	Operator	Value	End value		
Title	Like	BRAKE DISC & BOLTS			
				-	
Combine conditions	with: OAND 🖲	OR			
Using Case Sensitive	will make the query f	ister			
Case sensitive	the full of the query is				
	Ioniaco Posulta				
Add Results O R	replace Results				
Арріу					



For multiple products ensure that the **OR** condition has been selected.

Select Add results and click Apply to add the list of products to the Object Selection field.

3DEXPERIENCE Plat	form -> 3DVIA - Live Fi	le Connector Object Managem	nent	×
Object: Physic	al Product		~	+
Extension: (No Ex	tension)		~	
				]
Easy Extende	d Expert			
Attribute:	(	Operator: Value:		
Title	~	Like 🗸		~
	Add	Modify Remove Clear		
Attribute	Operator	Value	End value	
Title	Like	BRAKE DISC & BOLTS		
Title	Like	ENGINE BRACKET & BOLT		
Title	Like	HOLLOW BLOCK		
Combine conditio	ons with: O AND 💿	OR		
Using Case Sensitiv	e will make the query f	aster		
Case sensitive				
	Poplace Populte			
Annh	Replace Results			
Арріу				

DataExchangePLMBatch						?	×
Selected Operation — 1. Select the data exchr Export 2. Choose one usage JT_THEOREM 3. Select the extension jt	ange op of your	eration	silable extensions of th	e list)			
Object Selection Nb Title 1 BRAKE DISC & 2 ENGINE BRAC 3 HOLLOW BLO	BOLTS KET & CK	Name prd-TSL-00017166 prd-TSL-00004533 prd-TSL-00004529	Revision A A.1 A.1	Usage 3DPart	Revision Co	Descri   For pa   Parts 1   With F	<b>M</b> 3
Report Report directory: Report name: Suffix for object report: Run Local O Run Remote - host Settings directory :	C:\Use Global htm name :	rs\STEPHE~1.CLE\AppData	\Local\Temp\	HTML 1	format		
					Save	in (	Cancel



To change the location where both the report and the JT files will be saved, select the Report directory field, then select the required directory.

icon next to the

#### Click Run to initiate the Batch Export.

ataExo	changePLMBatch					?	
Select	ted Operation						
1. Sele	ect the data exchange op	eration					
Expor	rt v						
2. Cho	oose one usage						
ЈТ_ТН	IEOREM	~					
3. Sele	ect the extension of your	 external files (or * for all ava	ilable extensions of th	e list)			
it	~			,			
J.							
Objec	t Selection						
Nb	Title	Name	Revision	Usage	Revision Co	Descri	ng
1	BRAKE DISC & BOLTS	prd-TSL-00017166	A			For pa	
2	ENGINE BRACKET &	prd-TSL-00004533	A.1	200		Parts v	
3	HOLLOW BLOCK	prd-TSL-00004529	A.1	3DPart		With F	
<						>	
Repor	t						
Report	t directon	np\Batch\		<u>s</u>			
Report	conectory.	- 					
-	tname: IGIODAI	Kesults.ntm			6		
Report	for all at an a little						
Report Suffix	for object report: .htm			HIWE	ionnat		-
Report Suffix	for object report: .htm			HIWL	iormat		
Report Suffix Ru	for object report: .htm			HIML			
Report Suffix Ru Ru	for object report: .htm un Local un Remote - host name :						
Report Suffix Ru Ru Setting	for object report: .htm in Local in Remote - host name : gs directory :						1@
Report Suffix Ru Ru Setting	for object report: .htm in Local in Remote - host name : gs directory :						]@

Name	Date modified	Туре	Size
Data	22/02/2024 17:15	File folder	
prd-TSL-00004529	22/02/2024 17:15	File folder	
prd-TSL-00004533	22/02/2024 17:15	File folder	
prd-TSL-00017166	22/02/2024 17:15	File folder	
💿 BRAKE DISC & BOLTSA.htm	22/02/2024 17:15	Chrome HTML Do	1 KB
💿 ENGINE BRACKET & BOLTA.1.htm	22/02/2024 17:15	Chrome HTML Do	1 KB
📀 GlobalResults.htm	22/02/2024 17:15	Chrome HTML Do	2 KB
HOLLOW BLOCKA.1.htm	22/02/2024 17:15	Chrome HTML Do	1 KB
夑 prd-TSL-00004529.jt	22/02/2024 17:15	DirectModel Docu	4 KB
夑 prd-TSL-00004533.jt	22/02/2024 17:15	DirectModel Docu	3 KB
夑 prd-TSL-00017166.jt	22/02/2024 17:15	DirectModel Docu	9 KB



## Batch Import from JT

Here is an example showing what is required in preparation for a JT file selection and batch import.

#### Double click on DataExchangePLMBatch.

😵 Batch Monitor	- 0	$\times$		
ile <u>E</u> dit <u>H</u> elp				
Utilities Start Processes				
Туре	Description	^		
FastenerRulesCheck	Unitary Fastener Rules Check			
Generic Batch	Allows to start any non-interactive executable			
ImportIfcCustMap	Batch IFC Import Create Custom Mapping File			
Import 3D XML file	Import a 3D XML file			
KnowledgeExpertReport	Solves rule set for features, occurrences and PLM objects and generates report for k			
Heavy Industry Manufacturing Operations	Generate Manufacturing features or Extract Manufacturing workshop documents			
MigrateThreadStandardToXML	Utility to convert Thread Standard files to XML format			
3DEXPERIENCE CAD Transition	Transition legacy CAD data to 3DEXPERIENCE CAD origin			
DataExchangePLMBatch	Batch app for data exchanges between DXF, IGES, STEP, Multi-CAD, ICEM formats a			
FBDI	Import files from previous version			
PLMCobotIntegrationBatch	Launch Integration Batch			
PLMThumbnailBuilder	Generate 2D and 3D thumbnails for PLM objects in database	- 10		
PLMItfCheck	Launch Interference Simulation computation.			
PLMPrintBatch	Print Batch			
QccBatchReport	Run Profiles and generates report for knowledge check			
Knowledge Report	Generates the report on the attributes of objects			
V6 CATIA Analysis Migration	Migrates CATIA Analysis Model to Physics App Model and the Elfini domain of mat			
Import Simulation Results	Imports Simulation Results in a Simulation Object			
Croate Sim Nav Data Dack	Croster cim nov data nackage for car filer	~		

Ensure that '*Import*' is selected as the data exchange operation, '*JT\_THEOREM*' is selected as the usage and '*jt'*, '*pImxml'* or '*stpx*' is selected as the extension.

To add the required products for the batch import, select the 3DVIA – Live File Connector Object Search icon, next to the Object Selection field.

DataExchangePLMBatch			?	×
Selected Operation				
1. Select the data excha	nge operation			
Import ~				
2. Choose one usage				
JT_THEOREM	~			
3. Select the extension of	of your external files (or * for all available extensions of the list)			
it v				
Object Selection				
Nb Name				
			0	ť.
<u> </u>				
- Keport	C:\  sers\STEPHE=1.CLE\AppData\ .ocal\Temp\	.  🛋		
Report directory:				
Report name:	GlobalResults.htm			
Suffix for object report:	.htm	HTML format		
Dura Lanal				
O Kun Remote - host r	name :			
Settings directory :				3
		Save	Run Cance	el



In the subsequent window displayed, add the products by clicking on Member and selecting the required JT files.

3DVIA - Live File Connector -> 3D	EXPERIENCE Platform Object Management		-	×
Select Member All	String			 IJ
Add documents O Replace     Output Options     Identification string:	e documents	ОК	Cance	Help

These will then be added to the Object Selection field.

Click Run to initiate the Batch Import.

DataExchangePLMBatch		?	×
Selected Operation 1. Select the data exchange Import 2. Choose one usage JT_THEOREM 3. Select the extension of jt	nge operation v of your external files (or * for all available extensions of the list)		
- Object Selection Nb Name 1 C:\Program File 2 C:\Program File 3 C:\Program File	es\Theorem\25.3_3DExperience_JT\samples\JT\NIST\nist_ctc_02_asme1_ct5210_rc.jt es\Theorem\25.3_3DExperience_JT\samples\JT\NIST\nist_ctc_04_asme1_ct5210_rd es\Theorem\25.3_3DExperience_JT\samples\JT\NIST\nist_ftc_09_asme1_ct5240_rd.jt		2
Report — Report directory: Report name: Suffix for object report: Run Local O Run Remote - host n Settings directory :	C:\Users\STEPHE~1.CLE\AppData\Local\Temp\ GlobalResults.htm .htm HTML format		
	Save	Can	cel



#### Imported data saved into the 3DExperience database.

3DSear	3DSearch - All my recent content results since 2:31:51 PM					
3	3 Results   Q					
	Title	Туре	Description	Name		
1	<ul> <li>♥nist_ftc_09_asme1_ct5240_rd</li> </ul>	Physical Product		prd-TSL-00023465		
2	✓ Inist_ctc_04_asme1_ct5210_rd	Physical Product		prd-TSL-00023464		
3	<ul> <li>♥nist_ctc_02_asme1_ct5210_rc</li> </ul>	Physical Product		prd-TSL-00023463		





## Changing the Options Selected for a Batch Export / Import

The default options selected for a batch export and import can be modified within the **xcad\_jt\_opts.txt** file and **jt\_xcad\_opts.txt** file respectively. Both files are available in the following location.

#### <installation\_directory>\data\jt

Within the **xcad\_jt\_opts.txt** file a number of arguments are displayed, these include common arguments such as read\_pmi, disable\_points, disable\_wireframe and disable\_axes which are all turned off by default. If an argument has the character (!) at the start of the line then this means that the argument is turned off.

14	1111111111111111111111
15	! V6 Read options
16	<u></u>
17	!disable_points
18	!disable_wireframe
19	!disable_surfaces
20	disable solids
21	!disable_axes
22	!read_pmi
23	! To read PMI rendered as polylines only, uncomment the following line.
24	!dont_fill_pmi_text
25	!noshow
26	!body_names

To turn on a particular argument remove the (!) character from that particular line. Consequently to turn off an argument add the (!) character to the start of the line. Please note that the user will need to be in administrator mode in order to make the change.

14	11111111111111111111111
15	! V6 Read options
16	
17	disable_points
18	disable_wireframe
19	!disable_surfaces
20	!disable_solids
21	disable_axes
22	read_pmi
23	! To read PMI rendered as polylines only, uncomment the following line.
24	!dont_fill_pmi_text
25	!noshow
26	!body_names



Within the **jt\_xcad\_opts.txt** file a number of arguments are also displayed, these include read\_points, read\_wire\_frame and show\_axis\_system which are all turned off by default. If an argument has the character (\*) at the start of the line then this means that the argument is turned off.

49	* Entity type filtering
50	* By default, points and wireframe curve entities are not read.
51	* If point entities are required, uncomment the following line
52	*read_points
53	*
54	* If wireframe entities are required, uncomment the following line
55	*read_wire_frame
56	*
57	* Ignore the jt subnode property and read underlying (leaf) structure
58	*no_subnode
59	*
60	* Disable read of 3D VIEWs
61	*NO_READ_VIEWS
62	*
63	* Axis systems will by default be created in hidden visibility space,
64	* to create Axis systems in shown visibility space, uncomment the following line
65	*show_axis_system
66	*

Once again, to turn on a particular argument remove the (\*) character from that particular line. Consequently to turn off an argument add the (\*) character to the start of the line. Please note that the user will need to be in administrator mode in order to make the change.

49	* Entity type filtering
50	* By default, points and wireframe curve entities are not read.
51	* If point entities are required, uncomment the following line
52	read_points
53	*
54	* If wireframe entities are required, uncomment the following line
55	read_wire_frame
56	*
57	* Ignore the jt subnode property and read underlying (leaf) structure
58	*no_subnode
59	*
60	* Disable read of 3D VIEWs
61	*NO_READ_VIEWS
62	*
63	* Axis systems will by default be created in hidden visibility space,
64	$\star$ to create Axis systems in shown visibility space, uncomment the following line
65	show_axis_system
66	*



Please note that when exporting data using DataExchangePLMBatch, ensure that the design\_name option has been turned on in the **xcad\_it\_opts.txt** file. If this option is turned off then the root node displayed in the JT output will be named the object name displayed in 3DExperience, (this is a 3DExperience generated name/number). The design\_name option is turned **OFF** by default.





If the design\_name option is turned on then the root node displayed in the JT output will be named the object title displayed in 3DExperience, (this is a user generated name/number). Turning on the design\_name option will also generate a monolithic JT output.





62

## Changing the JT Configuration Selected for a Batch Export

The JT configuration file selected for a batch export can also be modified within the **xcad\_jt\_opts.txt** file.

To change the JT configuration, simply remove the existing file path displayed and replace it with the new file path. The JT configuration argument will be displayed under the JT Write options section in the xcad\_jt\_opts.txt file. Note – ensure that the -z character is not removed.

58	
59	! JT Write options
60	
61	-z "%TS_INST%\etc\tess.config"
62	!
58	111111111111111111111111111111111111111
59	! JT Write options
60	111111111111111111111
61	-z "C:\Program Files\Theorem\26.2_3DExperience_JT\etc\mono.config"

These changes will consequently mean that the user specified JT configuration will be used instead of the default JT configuration when translating via DataExchangePLMBatch. Please note that the user will need to be in administrator mode in order to make the change.



## Translating on the Command Line

It is possible to run a 3DExperience to JT translation on the command line, however as all CAD data is saved in the 3DExperience database an XML file will need to be used as the input file instead of a CAD file. This XML file contains all the necessary information to locate, open and translate the CAD data. This is explained in more detail below. In order to run a translation on the command line the following is required: -

#### <TS\_INST>\bin\catia6r<revision>\_ jt.cmd <input\_file> -o <output\_file> -z <config\_file> <options>

Where: - <TS\_INST> is the Theorem Solutions software installation directory. Where: - <revision> is the version of 3DExperience that you have installed – e.g. 2021x, 2022x, 2023x.

#### <input\_file>

Is an xml file defining access to a specific object in the 3DExperience database.

This file provides user login details (V6R2013x) or a Login Ticket (2015x onwards) *(see appendix F)*, to a specified Enovia repository plus a set of 3 attribute names and values which will uniquely identify the input object required for the conversion. These are highlighted in green in the example below and will need changing to the object and revision being translated. The lines highlighted in yellow should be modified with 'your' login details which are required to access Enovia. Example XML files can be found in the *<TS\_INST>\samples\3dexperience* folder. These can be modified and saved on your local drive.

Here is an example of the xml input file for 3DExperience

<?xml version="1.0" encoding="utf-8"?>

<mc6_read></mc6_read>		
parameters must be in this ORDER		
parameters only the value passed to V6		
<pre><parameters></parameters></pre>		
<attribute name="repository" value="PLM1"></attribute>		
<attribute name="ServerName" value="3dspace.theorem.com"></attribute>		
<attribute name="ServerPort" value="447"></attribute>		
<attribute name="ServerRootURI" value="3dspace"></attribute>		
<attribute <="" name="LoginTicket" td=""></attribute>		
value="REEyNzM3M0Q1REM2NDgxQzlFNzk1QzIwNjZGRDYzODN8Um9iaW58Um9ia		
W58fHwwfA=="/>		
<attribute name="PLMType" value="VPMReference"></attribute>		
<attribute name="ReportDirectory" value="C:\TEMP\V6Export"></attribute>		
<attribute name="LicenseData" value="LIC"></attribute>		
<attribute name="BatchXMLFileName" value="Default"></attribute>		
< arguments both key and value are passed to V6>		
<arguments></arguments>		
<attribute key="PLM_ExternalID" value="prd-TSL-00004525"></attribute>		
<attribute key="V_version" value="A"></attribute>		
<attribute key="minorrevision" value="1"></attribute>		



Reference	Part Grap	hic Revisions Change	
8			^
Туре	F	Physical Product	
Title		ENGINE BRACKET	
Name		prd-TSL-00004525	×
Revision		A.1	

The PLM\_ExternalID value will be the Name displayed in the properties of the object selected in 3DExperience.

Note – In some cases, the "minorrevision" value is not required in the XML file, only the V\_version value is required, which is the Revision displayed in the properties of the object selected in 3DExperience. This value could be A.1 for example.

#### -o <output\_file>

Is the required JT output file name.

#### -z <config\_file>

Is the name of the JT configuration file used for controlling the output characteristics described in Appendix A. -z <config\_file> not required in the command line if using the default configuration.

#### <options>

Options displayed in the configuration manager can be added at the end of the command using the correct syntax, e.g. disable\_points, disable\_wireframe. (See Configuration Manager, 3DExperience to JT Export for list of command line syntaxes.)

C:\Users\stephen.clews>"C:\Program Files\Theorem\26.2\_3DExperience\_JT\bin\catia6r2022x\_jt.cmd" C:\temp\3dex\_2022x\_input\_Engine\_Bracket.xml -o "C:\temp\ENGINE BRACKET.jt" disable\_wireframe



## Log File Generation

### **Export process Log Files**

In the process of exporting the selected 3DExperience part or assembly, the following log files are generated by the JT Export plug-in.

- .err file gives the full processing list of errors, warnings and information
- .rpt file gives a short list of the entities created and failed
- .log.summary file gives the times for start and finish and the status message code (these can be customised)
- .log file gives a single file with the data from all three logs

The process log and error messages are, by default, located in the 3DExperience CATReport directory, e.g.

#### C:\Users\<user>\AppData\Local\DassaultSystemes\CATReport

#### Where <user> is your user name

The files are named the same as the part or assembly being exported e.g. ENGINE\_BRACKET would produce the following log file names:

- ENGINE\_BRACKET.err
- ENGINE\_BRACKET.rpt
- ENGINE\_BRACKET.log.summary
- ENGINE\_BRACKET.log



Additional log files are created in the TSC\_TEMP\_DIR directory. This directory is defined in the %TS\_INST%\ts\_env.bat file.

#### %TSC\_TEMP\_DIR%\Read\_to\_viewer\_<input\_part\_name>.log

Where <input\_part\_name> is the name of the input part (or the active part name in interactive usage)

This contains information describing the 3DExperience 'data read' processing into Theorem Intermediate data format. Normally a list of entities.

List of gco entities :-			
Туре	Total	Standalone	Subordinate
Lines	237		237
Curves	468		468
Surfaces	189		189
Planes	81		81

#### %TSC\_TEMP\_DIR%\viewer\_<part-name>\_screen\_output.log

Where *<part-name>* is the selected output file name.

This contains the screen output of the process of writing the data to JT. The status of the translation can be found here

#### %TSC\_TEMP\_DIR%\viewer\_<part-name>.log

Where *<part-name>* is the selected output file name.

This contains detailed process information of the write of the data to JT and contains additional information such as modifiers and options used.



## Import process Log Files

In the process of importing a JT file, the following log files are generated by the JT Import plug-in. These are the same types of files produced when exporting from 3DExperience.

- .err file
- .rpt file
- .log.summary file
- .log file

The process log and error messages are, by default, located in the 3DExperience CATReport directory, e.g.

#### C:\Users\<user>\AppData\Local\DassaultSystemes\CATReport

Where <user> is your user name

The files are named after the selected input file name. e.g. nist\_ftc\_08\_asme1\_ct5240\_rc.jt would produce the following log file names:

- nist\_ftc\_08\_asme1\_ct5240\_rc.err
- nist\_ftc\_08\_asme1\_ct5240\_rc.rpt
- nist\_ftc\_08\_asme1\_ct5240\_rc.log.summary
- nist\_ftc\_08\_asme1\_ct5240\_rc.log



## **3DExperience Environment Files**

As part of the Theorem installation process, a set of 3DExperience environment files are created which are subsequently used in the launch of 3DExperience and CATUtil sessions to support the Theorem partner plugins for JT import and export.

A 'CATEnv' file is created for each installed version of 3DExperience.

These environment files are located in the 3DExperience revision specific folder e.g.

<installation\_directory>\B423\win\_b64\CATEnv\Theorem\_Multi-CAD\_JT\_CATIAV6R2021x.txt

<installation\_directory>\B424\win\_b64\CATEnv\Theorem\_Multi-CAD\_JT\_CATIAV6R2022x.txt

<installation\_directory>\B425\win\_b64\CATEnv\Theorem\_Multi-CAD\_JT\_CATIAV6R2023x.txt

These files consist of the current 3DExperience settings with the required Theorem settings appended at the bottom.

1..... ! Theorem Additional Multi-CAD Settings 1 -TS\_INST=C:\Program Files\Theorem\26.2\_3DExperience JT\ THEOREM LICENSE FILE=7601@ts-tam-lic-svr TSC TEMP DIR=%TEMP% ! Suppresses FTA/Geometry Links !XCAD\_FTA\_NO\_LINKS=1 OPTIONS\_MULTICAD\_PARTNER=1 XCAD\_JT\_EXACT\_ALLOWED=1 ! Apply custom assembly product naming via external reference file !TS\_JT\_MCAD\_OPTIONS\_PRODUCT\_NAMING=C:\Program Files\Theorem\26.2\_3DExperience\_JT\\data\jt\jt\_export\_name\_format.txt TS\_JT\_TEMPLATE\_FILE=C:\Program Files\Theorem\26.2\_3DExperience\_JT\\data\jt\template.jt TS\_JT\_TEMPLATE\_FILE\_EMPTY=C:\Program Files\Theorem\26.2\_3DExperience\_JT\\data\jt\template\_empty.jt TS\_JT\_TEMPLATE\_FILE\_HIDDEN=C:\Program Files\Theorem\26.2\_3DExperience\_JT\\data\jt\template\_hidden.jt !Output process log file to output-file location, not CATReport location !TS\_SAVE\_LOG\_WITH\_OUTPUT=1 !Specify a log processing file for evaluating customer status TS\_XCAD\_LOG\_PROCESS\_FILE=C:\Program Files\Theorem\26.2\_3DExperience\_JT\\data\jt\log\_processing.txt !For Interactive or DataExchangePLMBatch Large Assembly Processing, set the following ITS\_V6\_LAP\_INPUT\_TEMPLATE=Name\_of\_a\_Theorem format\_batch\_xml\_input\_data\_file IFS\_V6\_LAP\_INPUT\_TEMPLATE=Name\_of\_a\_Theorem format\_batch\_xml\_input\_data\_file !TS\_XPG\_USE\_EXISTING\_ERR\_LOG=1 MEPREF\_LEGACYPANEL=1



# Appendix A – JT Configuration File

## Introduction

A configuration file contains the settings for your translations. The configuration file can be specified using the command line option -z.

For interactive users the configuration file name can be defined in the Preferences>Legacy Preferences>Infrastructure>Theorem form, which in turn points to the TS\_INST\data\jt\jt\_mcad\_options\_configuration\_v6.txt file (where TS\_INST = the Theorem Installation folder).

By default, this is set to TS\_INST\etc\tess.config

Alternatively, if translating using DataExchangePLMBatch, with the environment variable TS\_IGNORE\_JT\_CATSETTINGS=1 set, the interactive Preferences>Legacy Preferences>Infrastructure>Theorem form will be ignored, and the content of the TS\_INST\data\jt\xcad\_jt\_opts.txt file will be used.

In this file, the default is also defined as

"%TS\_INST%\etc\**tess.config**"

The JT configuration file contains various sections, each containing different settings based on the section.



## The Setup Section

The setup options in the configuration file define how your files are translated. The setup section is the first part of the configuration file and contains a series of standard translator options.

#### To edit setup options

- 1. Open an existing configuration file with a text editor.
- 2. Edit the configuration file options listed in the table below.
- 3. Save the configuration with a .config extension

Option name	Keywords	Example
EAITranslator	EAITranslator {	EAITranslator {
OutputDirectory	"path to directory"	OutputDirectory = "/home/ <user>/"</user>
CommonPartsPath	"path to directory"	CommonPartsPath= "/myaccount/jtparts/"
chordalOption	"RELATIVE" "ABSOLUTE"	chordalOption = "RELATIVE"
structureOption	"PER_PART" "MONOLITHIC" "FULL_SHATTER"	structureOption = "MONOLITHIC"
WriteWhichFiles	"ALL" "ASSEMBLY_ONLY" "PARTS_ONLY"	WriteWhichFiles = "ALL"
compression	true TRUE false FALSE	compression = true
triStripOpt	true TRUE false FALSE	triStripOpt = false



seamSewing		
Note: Not available for Unigraphics.	true TRUE false FALSE	<pre>seamSewing = true</pre>
seamSewingTol	any integer	<pre>seamSewingTol = 0.001</pre>
includeBrep	true TRUE false FALSE	includeBrep = false
brepPrecision	"SINGLE" "DOUBLE"	<pre>brepPrecision = "SINGLE"</pre>
autoNameSanitize	true TRUE false FALSE	autoNameSanitize = true
updateChangedPartsOnly	true TRUE false FALSE	updateChangedPartsOnly = false
verboseReporting	true TRUE false FALSE	<pre>verboseReporting = false</pre>
write Ascii Assembly	true TRUE false FALSE	writeAsciiAssembly = false
singlePartsNoAssem	true TRUE false FALSE	singlePartsNoAssem = false
smartLODgeneration	true TRUE false FALSE	<pre>smartLODgeneration = true</pre>
autoLowLODgeneration	true TRUE false FALSE	autoLowLODgeneration = true



numLODs	any integer	numLODs = 3
close brace		



## The Level of Detail (LOD) Section

The level of detail section of the configuration file contains the tessellation and simplification information for each level of detail in the file.

This section consists of several sets of level of detail (LOD) information, and the number of these sets depends on the number you specified on the numLODs line in the configuration file.

#### To edit level of detail options

- 1. Open an existing configuration file in a text editor.
- 2. Edit the configuration file options listed below.
- 3. Save the configuration with a .config extension

Option name	Keywords	Example
LOD	LOD "lod number" {	LOD "1" {
Level	any integer	Level = 1
Chordal	any number	Chordal = 0.001
Angular	any number	Angular = 25
Length	any number	Length = 1
FeatureSuppression	any integer	FeatureSuppression = 0
Simplify	any number	Simplify = 0.60
close brace		



## The Filter Section

The filter section of the configuration file contains the filename and metadata filtering information. Edit this section if you want to change how the translator sanitizes filenames and filters metadata keys.

#### To edit filter options

- 1. Open an existing configuration file with a text editor.
- 2. Edit the configuration file options from the table below.
- 3. Save the configuration with a .config extension

Option name	Keywords	Example
Filter	Filter {	Filter {
FilenameSanitizeSet	"string of characters"	FilenameSanitizeSet =
FilenameSanitizeSetAdd	"string of characters"	FilenameSanitizeSetAdd = "41"
FilenameSanitizeSetDelete	"string of characters"	FilenameSanitizeSetDelete = "c"
MetadataKey	"string of characters"	MetadataKey = "metadata key to exclude"
close brace		



## The Metadata section

The metadata section sets which metadata to attach to all parts, assemblies and nodes of the model.

**Note:** Be sure to add these options to the configuration file in pairs: one line to define the metadata key and one line to define the metadata value.

#### To edit metadata options

- 1. Open an existing configuration file (.CONFIG) in a text editor.
- 2. Edit the configuration file options shown in the table below.
- 3. Save the configuration with a .config extension

Option name	Keywords	Example
Metadata	Metadata {	Metadata {
AddToParts	"string of characters"	AddToParts = " <metadata key="">" AddToParts = "<metadata value&gt;"</metadata </metadata>
AddToAssemblies	"string of characters"	AddToAssemblies = " <metadata key&gt;" AddToAssemblies = "<metadata value&gt;"</metadata </metadata 
AddToAllNodes	"string of characters"	AddToAllNodes = " <metadata key&gt;" AddToAllNodes = "<metadata value&gt;"</metadata </metadata 
close brace		



## Appendix B – Large Assembly Processing (LAP)

### Overview

The export of large assemblies from 3DExperience to JT may be handled using the default process, or a new Large Assembly Processing method.

This new process is as follows:

The assembly is read from 3DExperience using the MultiCAD interfaces as normal, but only the assembly structure is directly converted to a main output jt file.

The reference to the geometry for each individual component part node in the assembly is written to separate .xml files. This part of the process takes minimal time and processing resource.

As each of the individual .xml files are created, an entry is made into a batch processing file to allow subsequent conversion of the geometry data into the output JT files required for the complete assembly.



## LAP Options

The following option support has been added into the 3DExperience to JT product to support Large Assembly Processing (LAP). This can be modified in the "**xcad\_it\_opts.txt**" file.

Option	Description
struct_read (mandatory)	This option causes only the CATIA assembly structure to be written to the specified output jt file.
large_assy_process (mandatory)	This option invokes the creation of separate intermediate data files representing each assembly 'leaf node' (component/part) containing the part geometry. This option should always be used with the 'struct_read' option.
	A batch command file (.bat) is also created and this contains a sequence of individual commands to convert the intermediate data files into the required jt files representing the part/component geometry. The default name for the generated batch file is <output_file_path>.bat, e.g if the output file name was C:\parts\jt\assembly1.jt, the batch file name would be C:\parts\jt\assembly1.bat.</output_file_path>
write_assembly_script (optional)	This option allows the user to specify a non-default file name path for the batch command file generated by the large_assy_process option.
autorun <b>(optional)</b>	This option will cause the batch command script to be automatically invoked when the main conversion process ends.
zpart <b>(optional)</b>	This option specifies the name of a JT write config file to be used in the batch file conversions for creating the jt files representing the part geometry. This will override the –z option used for the main assembly conversion.



## **Command Line Operation**

The options for Large Assembly Processing can be used as command line options on the catia6\_jt.cmd. *(See Translating on the Command Line.)* 

### **Interactive Operation**

The Large Assembly Processing facility can be used in interactive mode by including the required options in the %TS\_INST%\data\jt\xcad\_jt\_opts.txt file

### DataExchangePLMBatch Operation

The Large Assembly Processing facility can be used in DataExchangePLMBatch mode.

For Interactive or DataExchangePLMBatch Large Assembly Processing, set the following in the relevant environment file

e.g. <installation\_directory>\B424\win\_b64\CATEnvTheorem\_Multi-CAD\_JT\_CATIAV6R2022x.txt

TS\_V6\_LAP\_INPUT\_TEMPLATE=<XML File name> TS\_PLM\_PRODUCT\_REF\_TYPE\_NAME= VPMReference TS\_PLM\_REPRESENTATION\_TYPE\_NAME= VPMRepReference

Where <XML File name> is the XML file used, e.g. 3dex\_2022x\_input\_Engine\_Bracket.xml. *See Translating on the Command Line* for more information on XML Files.



## Appendix C – Property Mapping Files

The selections of the displayed JT Config File (.config), Property Mapping files and PMI Type Filter Files are set through the configuration file:

#### %TS\_INST%\data\jt\jt\_mcad\_options\_configuration.txt

The format of the jt\_mcad\_options\_configuration.txt is:

<jt\_config\_files> Default TessCATIA6MultiCAD;%TS\_INST%\etc\tessCATIAV6MultiCAD.config </jt\_config\_files> <jt\_import\_property\_files> Default Import Jt Property Filter;%TS\_INST%\data\jt\jt\_v6\_property\_mapping.txt </jt\_import\_property\_files> <jt\_export\_property\_files> Default Export Jt Property Filter;%TS\_INST%\data\jt\v6\_jt\_property\_mapping.txt </jt\_export\_property\_files> Default Export\_property\_files> <jt\_import\_proj\_files> Default Import PMI Type Filter;%TS\_INST%\data\jt\jt\_pmi\_filter.txt </jt\_import\_pmi\_files>

There is one option menu entry per line containing < Description> ; < Absolute File Path>

Where the *<Description>* is the text to be displayed in the option menu and the file path is the location of the JT write configuration file or the property filter. This path definition can include environment variables.

The user can control the mapping of user defined attributes contained in the PLM part definition and external files during the import and export processes.

The 'JT Import Property Mapping File' and 'JT Export Property Mapping File' are text files of a format described below:

A mapping file is used to control which properties are converted by setting a control value. Setting the control value to 0 will stop a specific property from being exported.

The mapping file can also enable the mapping of property names to new names: this is performed by switching the name between the input name (= field 1) and the output name (= field 2)



#### The File Line Format is as follows:-

SourceName, TargetName, Control, Dummy, Dummy, Dummy Lines beginning with a "#" are taken as comment lines SourceName – is the input attribute name. TargetName - is the output attribute name (NULL means use SourceName) Control – is flag to control conversion: 0 – Do not convert, 1 – Do convert, Dummy – unused fields If SourceName is given as NULL then any item not included in map will match So to include all other attributes use NULL,NULL,1,,, Or to exclude all other attributes use NULL,NULL,0,,, Examples To exclude the MPARTNAME attribute MPARTNAME,NULL,0,,, To include the TAG attribute TAG,NULL,1,,, To include the TAG attribute but under a different name, i.e. PART NUMBER TAG, PART NUMBER, 1,,,



## Appendix D – PMI Type Filter

The user can control the filtering of PMI types on import from JT by specifying an appropriate filter file. A default filter file is provided with the installation located as *%TS\_INST%\data\jt\jt\_pmi\_filter.txt*. This file contains a list of all PMI types by name and can be edited to exclude different named types by removing a '#' (comment character) from the type not required to be imported.

e.g. if the file is edited as follows

# File for filtering on PMI type via the command : pmi filter file "file name" Ħ # Line Format:-# "pmi type" # # Lines that start with a '#' are ignored. # The supplied file contains all possible PMI types in alphabetical order preceded by a '#' # # To prevent a particular PMI type from being processed, remove the '#' from that type # #arc spot weld #attribute note #balloon #bead #bundle dressing note #callout dimension center point #centerline #cert point #chamfer . . .

Any PMI entities of type 'center point' would **NOT** be imported.

This facility was introduced to reduce processing time due to large numbers of 'redundant' PMI entities in a JT file.

Note that default settings that can control the JT Export plugin, are also read from the data file %TS\_INST%\data\jt\xcad\_jt\_opts.txt.

Default settings that can control the JT Import plugin, are also read from the data file %TS\_INST%\data\jt\jt\_xcad\_opts.txt.



# Appendix E – JT Template Files

If, when a representation is read from 3DExperience, no geometry is found in the representation, all the geometry is hidden or a major write error occurs preventing a JT file being produced, then a template JT file (named by default as template\_empty.jt, template\_hidden.jt and template.jt respectively) will be copied to the expected output file name.

This enables the conversion process to complete successfully and maintains the expected file outputs.

This behaviour is implemented via environment variables set in the Theorem CATEnv file e.g. <installation\_directory>\B424\win\_b64\CATEnvTheorem\_Multi-CAD\_JT\_CATIAV6R2022x.txt, typically as follows:

TS\_JT\_TEMPLATE\_FILE=C:\Program Files\Theorem\25.3\data\jt\template.jt TS\_JT\_TEMPLATE\_FILE\_EMPTY=C:\Program Files\Theorem\25.3\data\jt\template\_empty.jt TS\_JT\_TEMPLATE\_FILE\_HIDDEN=C:\Program Files\Theorem\25.3\data\jt\template\_hidden.jt

The user can change the content of these JT files, or their location and names as required.



# Appendix F – Creating a Login Ticket

Use a browser link (similar to the one below) to your 3DExperience Server.

https://3dspace.2017x.theorem.com:447/3dspace/common/emxNavigator.jsp



Login as normal, e.g. User Password

Select Collaboration and Approvals > Experience Configuration > Manage Login Tickets.

Approvals	And A Home CA < >											Restore Default View		
Home	New Docs	>>						ns						
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Member Lists														
View My Company														
Experience Configuration														
Manage P&O and Content														



1.4			
Collaboration and Approvals		akat Craatian	
Home	Login Th	cket Greation	
ssues Summary	User:	User	
ssue Categories	Security Context:	VPLMProjectLeader.Company Name.Acme	~
Shortcuts	Ticket type:	●Infinite 〇Once	
Collections		Create	

Select the values required for your user:

User and Security Context should already be set, make sure that Ticket Type **'Infinite'** is selected. Then click on 'Create'.

This will produce the ticket. See example below: -

#### REEyNzM3STE1MER2NDgxQzIFNzk1QzIwNjZGNATzDAN8Um9iaW58Um9iaW58fHwwfA==

This can then be used as the 'LoginTicket' value explained previously.



### UK, Europe and Asia Pacific Regions

- THEOREM HOUSE MARSTON PARK BONEHILL RD TAMWORTH B78 3HU UNITED KINGDOM
- sales@theorem.com
- <u>\_\_\_\_\_</u> +44 (0) 1827 305 350

#### **USA** and the America

- THEOREM SOLUTIONS INC 100 WEST BIG BEAVER TROY MICHIGAN 48084 USA
- Sales-usa@theorem.com
- S +(513) 576 1100
- THEOREM.COM