

COM/ReconV5 Release 376 and following

Features, Installation & Administration Manual



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Preface

About this Manual

This manual describes the features of COM/ReconV5, and it provides installation and configuration information for COM/ReconV5. Before using this guide, be sure you understand:

- the Microsoft Windows operating system
- the administration of the CATIA V5 system

Related Documents

T-Systems Licman 2.0 Installation Manual.

Trademarks

CATIA is a registered trademark of Dassault Systèmes.

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

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CHAPTER 1

Overview

This chapter provides basic information about the features and installation of the COM/ReconV5 batch processing tool.

Features

COM/ReconV5 is a batch processing tool, which has two major 'use cases':

- Scan a CATIA V5 assembly structure and create a PLMXML file representing this structure, including transformations and meta data.
- Reconcile a CATIA V5 structure according to the 'master structure' being defined in a PLMXML or XPDM file.

For details, refer to the major chapter 'Features of COM/ReconV5'

System and Software Requirements

Depending on the CATIA Release COM/ReconV5 is built for, you will need to have installed the appropriate CATIA V5 Client version, e.g. V5-6R2012.

COM/ReconV5 is currently supported on the following operation systems:

- Windows 7 (64 Bit)
- Windows 10 (64 Bit)

CHAPTER 2

Features of COM/ReconV5

COM/ReconV5 is a batch processing tool, which has two major 'use cases':

Scan a CATIA V5 assembly structure and create a PLMXML file representing this structure, including transformations and meta data.

Reconcile a CATIA V5 structure according to the 'master structure' being defined in a PLMXML or XPDM file.

For both use cases, COM/ReconV5 can handle structures with following CATIA file types:

CATProduct

CATPart

model

cgr

CATDrawing

COM/ReconV5 can benefit from the existence of a **CATIA V5 PX1 license**. If such a license is present and set up, performance and reliability will increase. For example, COM/ReconV5 can detect corrupt files and wrong 'save-releases' of CATIA files, when a PX1 license is present.

If no PX1 license is available, please set the option

-DisallowPX1=Yes

See option descriptions below.

Use case 1: Scan

In 'scan' mode, COM/ReconV5 will only **read** CATIA data, it will not alter any CATIA file.

COM/ReconV5 opens a root CATProduct, and recursively traverses the assembly structure. All info will be written to a **result PLMXML file**. A sample for such a PLMXML file can be found in the Appendix, [Sample PLMXML result](#)

Optionally, the input 'file' can be a **directory**. In this case COM/ReconV5 will search all root CATProducts in this directory, and will create a 'multi-root' assembly structure.

Optionally, **CATDrawings** in the input directory can be analyzed for dependencies to the assembly structure.

Note, that a 'flat scan' of referenced files is possible via the option `-ScanFlat`, see following 'Use case 1b: flat scan'

For the scan of meta data, COM/ReconV5 distinguishes between 'standard' CATIA meta data and user defined properties:

The image shows two overlapping dialog boxes from the CATIA software. The top dialog box is titled 'Product' and contains the following fields: 'Part Number' with the value '000.060100M1', 'Revision' with the value '3', 'Definition' with the value 'PROFIL FUEHRUNGSSCHLITTEN', and 'Nomenclature' with the value 'BOW PROFILE'. The bottom dialog box is titled 'Product: Added Properties' and contains the following fields: 'CATIA_Project_Environment' with the value 'V5_R19_SP3_DC_R19', 'Additional_Information' which is empty, and 'Finish' with the value '-'. Both dialog boxes have a standard Windows-style border with a title bar and a close button in the top right corner.

By default, only the **standard properties** are read, and subsequently written to PLMXML like follows:

```
<Part id="id2" name="000.060100M1">
  <UserData id="ud2">
    <UserValue title="Product Identifier::" value="000.060100M1"></UserValue>
    <UserValue title="Product File Name::" value="000.060100M1.CATPart"></UserValue>
    <UserValue title="Product Revision::" value="3"></UserValue>
    <UserValue title="Product Label::" value="BOW PROFILE"></UserValue>
    <UserValue title="Product Definition::" value="PROFIL FUEHRUNGSSCHLITTEN"></UserValue>
  </UserData>
</Part>
```

CATIA '**added**' properties are read via the options `MetaDataAddtlPropsPart` and `MetaDataAddtlPropsProduct`, see below

Options for use case 1: Scan

Note, that

```
<install dir>\go\scanV5ToPLMXML.opt
```

contains a **sample option file** for this use case.

The following options are relevant for this use case.

Options marked with (+) must be set, but have only 'internal semantics'

Option values in [] are default, string-value options with (*) are optional

-InFile

Full path of the input CATProduct (or directory) being subject to scan

-OutFormat

Should be set to PLMXML

-Reverse

Set to 'Yes' to activate use case 1 (scan)

-AsmMap (+)

Always set to 'CC6' (see sample scanV5ToPLMXML.opt)

-OutFile

Full path of the output PLMXML file

-Verbosity

Trace/Info/[Warning]/Error : verbosity of reporting

-ScanHiddenInstances

Yes/[No]: respect assembly instances in 'NoShow'

-DrawAssocAnalysis

[Yes]/No: analyze CATDrawings in the input directory (-InFile),
and try to assign them to the scanned assembly structure

-MetaDataAddtlPropsPart (*)

-MetaDataAddtlPropsProduct (*)

Additional properties to be scanned from CATParts/CATProducts.

Value is either:

* ('star') - scan all user properties and write them as such to PLMXML

Or : a separated list of user property name pairs like

```
(CATIA_Project_Environment:V5ProjEnv) (...,...) (...,...)
```

In this case, a property `CATIA_Project_Environment` would be read (if present), and written to PLMXML with the property name `V5ProjEnv`

`-DisallowPX1`

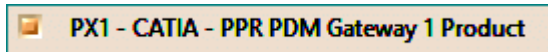
Yes/[No]: Set this to Yes, if no CATIA PX1 license is present in your environment.

It is highly recommended to use COM/ReconV5 WITH a PX1 license, as this improves stability and performance: without PX1, some limitations are in place:

- No detection of inadequate file extensions (,CATPart is a CATProduct')
- No detection of file names of broken links
- No detection of ,last-save-version' (see option `-ScanLastSaveVersion` below)
- No handling (file rename) of CATDrawings

Also, usage of PX1 APIs will increase performance in scan mode.

If COM/ReconV5 expects a PX1 license (`DisallowPX1=No` or unset), it is crucial that the PX1 license **is effectively present and active in Catia**, otherwise COM/ReconV5 errors will show up



`-ScanLastSaveVersion`

No (default) : Omit scan of the last save version

Short : add the version to PLMXML in a short format:

```
<UserValue title="Last Save Version" value="22"></UserValue>
```

Full: add the version to PLMXML in a full format:

```
<UserValue title="Last Save Version"
value="V05R22SP05HF012"></UserValue>
```

Scan of the 'last save version' is only possible with a Catia PX1 license (refer to option `DisallowPX1`) !

Use case 1b: Flat Scan

A very quick possibility to scan a set of Catia documents for all its dependencies is given via the option **-ScanFlat**. If this option is set, all CATProducts and CATDrawings of the **-InFile** directory are scanned for their dependencies (CATParts, models, cgrs). The complete list of the dependent files (without path) is written to a simple text file, no assembly structure or meta data will be scanned.

This use case only works when a PX1 license is present, and only in combination of the following options:

```
-ScanFlat=Yes
-Reverse=Yes
-InFile=<directory subject to flat scan>
-OutFile=<complete path to result txt file>
-OutFormat=TXT
-DisallowPX1=No
```

Contents of a sample output file:

```
A2126300940_2.model
A2126300940_3.cgr
DC233_A2464011500_140702.CATPart
DC233_A2464011500_140702.CATProduct
```

Note, that

```
<install dir>\go\scanV5ToTXT.opt
```

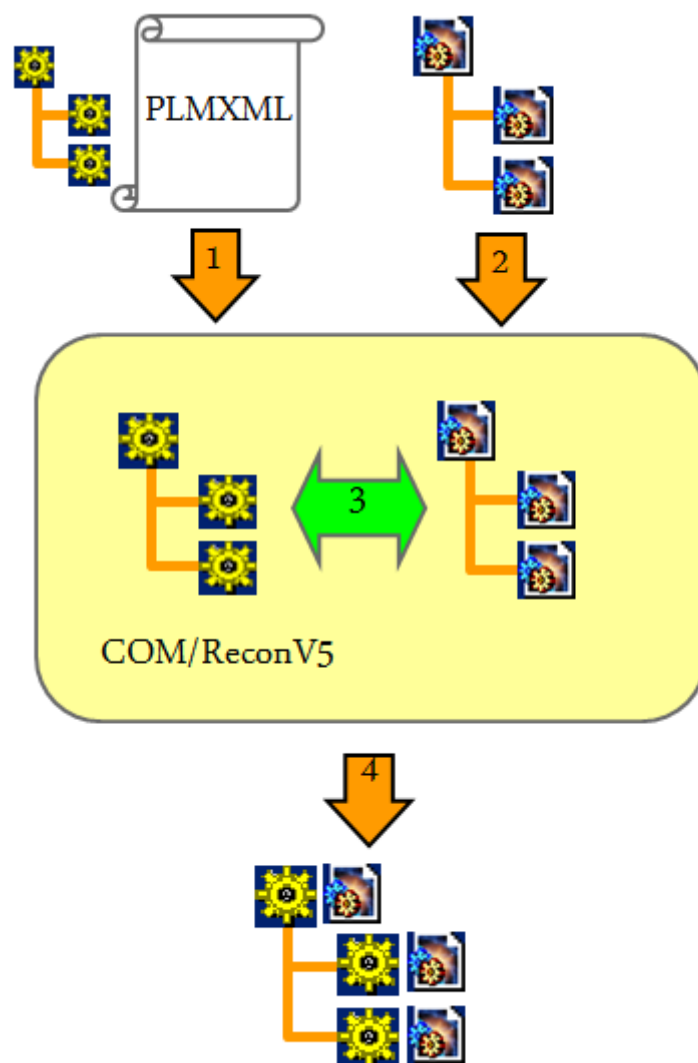
contains a **sample option file** for this use case.

Use case 2: Reconcile

In 'reconciliation' mode, COM/ReconV5 modifies CATIA V5 assemblies according to the 'master structure definition' within a PLMXML or XPDM file..

The following picture illustrates the way COM/ReconV5 works:

- 1) COM/ReconV5 will **read** a 'master structure' being defined in a PLMXML or XPDM file (1).
- 2) It will then try to open all CATIA V5 files being referenced in the 'master structure' (being located in the same input directory)
- 3) It will propagate the 'master structure' onto the CATIA V5 structure.
- 4) The modified CATIA V5 files will be saved



This propagation applies to the following functionalities:

- Adjust part numbers, instance names, and other meta data
- Adjust V5 file names (PX1: via SendTo service;no PX1: via SaveAs)
- Add and remove instances
- Create CATProducts where appropriate
- Adjust transformations
- Externalize components
- Remove broken links

Options for use case 2: Reconcile

Note, that

```
<install dir>\go\synchronizeV5FromPLMXML.opt
```

contains a **sample option file** for this use case.

The following options are relevant for this use case.

Option values in [] are default, string-value options with (*) are optional

-InFile

Full path of the input PLMXML/XPDM file ('master structure')

-OutFormat

Should be set to CATIA

-Verbosity

Trace/Info/[Warning]/Error : verbosity of reporting

-CPTemplate (*)

Where new CATProduct needs to be created,
use a given CATProduct file as template; specify the full path.

-ActivateSendTo

Yes/[No]: Allow rename of files

-CleanBrokenLinks

Yes/No/[PerMaster]: Cleanup broken links in the CATIA assembly.
For PerMaster, all broken links which have no equivalent
in the master structure get deleted

-Externalize

[Never]/model/cgr/model+cgr/Always: 'Externalize' V5 components,
i.e. create physical CATProducts for component nodes:

-DisallowPX1

Yes/[No]: Set this to Yes, if no CATIA PX1 license is present in your environment.
Usage of PX1 APIs will enable checking facilities and CATDrawing rename.

Important: See the notes about DisallowPX1 in the section

['Options for use case 1: Scan'](#)

PLMXML specification for use case 2: Reconcile

While PLMXML is standardized for a long a time, a lot of different flavours are around.

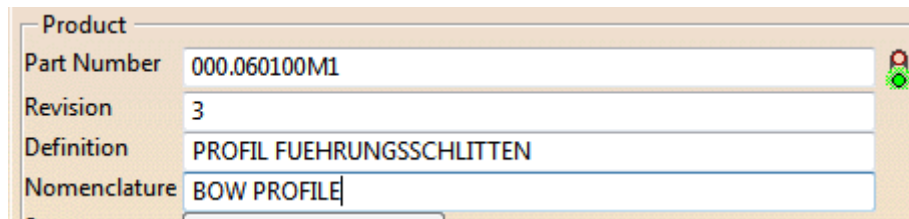
COM/ReconV5 will correctly interpret the assembly structure being defined in PLMXML in many cases. However, there are several rules which have to be taken into account, if **meta data reconciliation** should work as designed.

Basically these rules can be seen in the PLMXML result files from *Use Case 1: Scan*.

The mapping of PLMXML UserValue titles to CATIA standard properties is as follows

Product Identifier	Part Number
Product Revision	Revision
Product Label	Nomenclature
Product Definition	Definition

```
<Part id="id2" name="000.060100M1">
<UserData id="ud2">
<UserValue title="Product Identifier::" value="000.060100M1"></UserValue>
<UserValue title="Product File Name::" value="000.060100M1.CATPart"></UserValue>
<UserValue title="Product Revision::" value="3"></UserValue>
<UserValue title="Product Label::" value="BOW PROFILE"></UserValue>
<UserValue title="Product Definition::" value="PROFIL FUEHRUNGSSCHLITTEN"></UserValue>
</UserData>
```



If a **rename of files** is desired (see option `ActivateSendTo`), the target file names must be defined in an additional UserValue:

Product File Name New	< target file name, no path>
-----------------------	------------------------------

The UserValues titles can be specified with or without trailing '::'

XPDM specification for use case 2: Reconcile

The specification for XPDM format is available from T-Systems on request.

CHAPTER 3

Installation / Troubleshooting

Installation steps

COM/ReconV5 is a CAA CATIA V5 batch application, it requires to be run in a proper CATIA V5 environment.

For the installation of COM/ReconV5, you just have to unpack the delivered package to an appropriate directory <install dir>, either on a client machine, or on a network drive.

(It is recommended, that <install dir> does not contain blanks!)

After having done this, please have an eye on the script

```
<install dir>\go\COMReconV5.bat
```

This script is the main entry point for starting COM/ReconV5. Typically, the tool is started from the command line like:

```
COMReconV5.bat <Full path of option file>
```

Before using the script and an option file, you have to adjust a few places in COMReconV5.bat and in the option file being used.

Within COMReconV5.bat , you will find places marked with **ADJUST_HERE**. These are :

```
rem Setup the path INSTALL_DIR to the COM/Recon install path
set INSTALL_DIR=C:\tmp\150322_COMRecon

rem Setup the V5 installation path,
rem typically sth like >C:\Programs\DassaultSystemes\%RELEASE%<
set CATIA_BASE_DIR=D:\Programme\DassaultSystemes\%RELEASE%_x64
```

For adaptations in the option files, please refer to the chapter 'Features of COM/ReconV5'

Licman license

COM/ReconV5 also requires a Licman license setup, please refer to the *Licman 2.0 Installation Manual*.

The Licman keys being used by COM/Recon tools are:

612 : allows to use COM/ReconV5 and COM/ReconNX

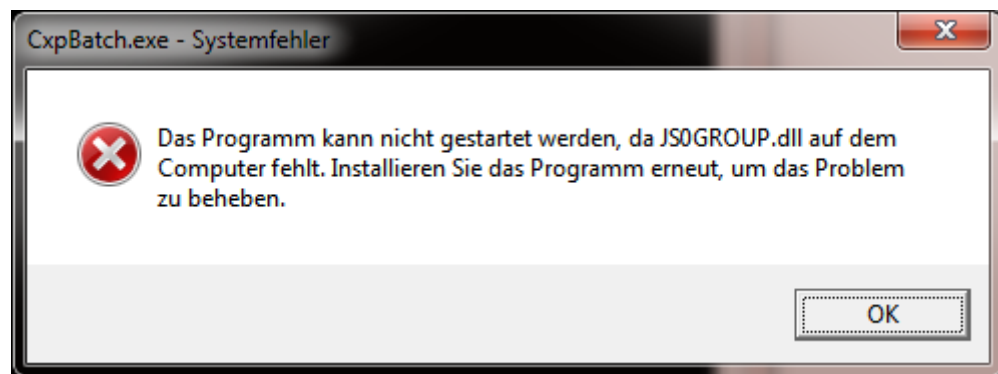
613 : allows to use COM/ReconV5

614 : allows to use COM/ReconNX (this is the 'equivalent' T-Systems module for Siemens NX)

This is important when requesting a license from T-Systems.

Troubleshooting

If CxpBatch.exe fails to start with the message of a missing JS0GROUP.dll,



this may be due to the following setup errors:

- 1) No CATIA V5 is installed on the computer, where COM/ReconV5 is installed
- 2) CATIA V5 is installed with a wrong release level
- 3) The start script <install dir>\go\COMReconV5.bat is not set up correctly:
Most likely the CATIA environment setup is not correct; Hint: change the first line

```
@echo on
```

and check the output of the script.

You should also check the **[TROUBLESHOOTING]** hints in the start script

```
<install dir>\go\COMReconV5.bat
```

If CxpBatch.exe gives an error like

```
Cannot open library CXPcatUpdate.dll
Failed to retrieve CxpMain function pointer!
```

The error is most likely due to the lack of appropriate Windows redistributable packages.

All necessary packages can be found in the directory

<install dir>\vcredist

Return Codes

COM/Recon returns a value depending on the warnings/errors encountered during processing. The return codes are:

```
0      OK
202    Warning
203    Error, but data processing to the end
204    Severe Error = Abort with control;
      COM/Recon does not finish data processing to the end
139    Uncontrollable Catia crash (COM/Recon aborts without control)
```

With RC 203, it is recommended to check the error(s) in the log and the result data

With RC 204 (and RC 139), there is definitely something wrong, the result data should not be used

APPENDIX

Sample PLMXML result

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<PLMXML xmlns="http://www.plmxml.org/Schemas/PLMXMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.plmxml.org/Schemas/PLMXMLSchema
    PLMXMLPDMSchema.xsd"
  xmlns:vis="PLMXML-VisExtensions"
  schemaVersion="1.0"
  author="COMReconV5 Conversion to PLMXML"
  time="16:44:53"
  date="2015-04-29">

  <!-- created by COMReconV5 Version 321.5, Wed Apr 29 16:44:53 2015 -->
  <!-- # (c) T-Systems 2015 -->

  <ProductDef id="pd1" name="Dummy Product Definition">
    <InstanceGraph id="igl" rootInstanceRef="id99999999">
      <Description>Assembly structure for id1</Description>

      <Instance id="id99999999" partRef="id1">
        <Description>000.060100STR1</Description>
        <Transform id="tr99999999">1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1</Transform>
      </Instance>

      <Part id="id1" name="000.060100STR1" type="assembly" instanceRefs="id5">
        <UserData id="ud1">
          <UserValue title="Product Identifier::" value="000.060100STR1"></UserValue>
          <UserValue title="Product File Name::"
            value="000.060100STR1.CATProduct"></UserValue>
          <UserValue title="Creation label::" value="COMReconV5 Version 321.5"></UserValue>
          <UserValue title="Product Revision::" value="3"></UserValue>
          <UserValue title="Product Definition::" value="PROFIL
            FUEHRUNGSSCHLITTEN"></UserValue>
        </UserData>
      </Part>

      <Instance id="id5" partRef="id2">
        <Transform id="tr5">1.0000000000 0.0000000000 0.0000000000 0.0000000000
          0.0000000000 1.0000000000 0.0000000000 0.0000000000 0.0000000000 0.0000000000
          1.0000000000 0.0000000000 0.0000000000 0.0000000000 0.0000000000 0.0000000000
          1.0000000000</Transform>
      </Instance>
    </InstanceGraph>
  </ProductDef>
</PLMXML>
```

```

</Instance>

<Part id="id2" name="000.060100M1">
<UserData id="ud2">
<UserValue title="Product Identifier::" value="000.060100M1"></UserValue>
<UserValue title="Product File Name::" value="000.060100M1.CATPart"></UserValue>
<UserValue title="Product Revision::" value="3"></UserValue>
<UserValue title="Product Label::" value="BOW PROFILE"></UserValue>
<UserValue title="Product Definition::" value="PROFIL
FUEHRUNGSSCHLITTEN"></UserValue>
</UserData>
<Representation id="rep2" format="CATPart" location="000.060100M1.CATPart">
</Representation>
</Part>

<Part id="id3" name="000.060100DWG">
<UserData id="ud3">
<UserValue title="Product Identifier::" value="000.060100DWG"></UserValue>
<UserValue title="Product File Name::"
value="000.060100DWG.CATDrawing"></UserValue>
<UserValue title="Creation label::" value="COMReconV5 Version 321.5"></UserValue>
<UserValue title="Product Label::" value="000.060100DWG"></UserValue>
</UserData>
<Representation id="rep3" format="CATDrawing" location="000.060100DWG.CATDrawing">
</Representation>
</Part>

<Part id="id4" name="ALL NON-ASSIGNABLE DRAWING(s)" type="assembly">
<UserData id="ud4">
<UserValue title="Product Identifier::" value="ALL NON-ASSIGNABLE
DRAWING(s)"></UserValue>
<UserValue title="Product File Name::" value="ALL NON-ASSIGNABLE
DRAWING(s).CATProduct"></UserValue>
<UserValue title="Product Is Component::" value="TRUE"></UserValue>
<UserValue title="Creation label::" value="COMReconV5 Version 321.5"></UserValue>
<UserValue title="Product Label::" value="Dummy node for ALL NON-ASSIGNABLE
DRAWING(s)"></UserValue>
</UserData>
</Part>

</InstanceGraph>
</ProductDef>
</PLMXML>

```