

**Guideline (not under Configuration Control)**

# **CAD Manual 04-4 Design Work Performed by Suppliers using CATIA V5**

This document describes the design processes for design work performed by suppliers using CATIA V5

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# CAD Manual

## Section 4-4 Design Work Performed by Suppliers using CATIA V5

### Abstract

This document describes the design processes for design work by the suppliers using CATIA V5.

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## 4.4 Design work performed by Suppliers using CATIA V5

### 4.4.1 Introduction

All design activity performed with CATIA V5 file based of with link to ENOVIA must follow a set of rules. To follow rules is mandatory to:

- A. Be able to identify components and drawings
- B. To allow integration and reintegration of data in the ITER design database ENOVIA V5
- C. To enable downstream applications and processes like drawing generation and analysis
- D. To enable easy understanding of the design intent
- E. To enable effective change management

### 4.4.2 Summary

- A. All rules defined in other chapters have to be applied if they are applicable.
- B. The ITER naming and writing conventions shall be used.
- C. Before starting any work the following actions shall be performed:
  - a. The appropriate release and service pack of CATIA shall be installed.
  - b. The language environment used for CATIA shall be set to English.
  - c. The most recent ITER CAD Supplier Package ([ITER D 24KWJF - 02 ITER CAD Supplier Package](#)) and if necessary the Equipment & System related extensions shall be down loaded and installed including:
    - i. ITER CATSettings for mechanical and/or Equipment & Systems for plant design
    - ii. ITER drafting standard ITER and/or ITER\_Plant
    - iii. The ITER properties panel
    - iv. FTB manager for drawing frame and title block
- D. The filename and the CV5 part number of a document CATPart, CATProduct, CATDrawing **received from the IO must not be modified except for the cases described in E.**
- E. If an alternative design in parallel to the reference design, a variant (slightly different part) or a part based on a parametric part from the ITER catalogue have to be made a specific methodology described in [How To Create New Part Filebase Using Existing Ones Extracted From ENOVIA \(33CPWB\)](#) shall be used.
- F. The CATIA Partnumber and the filename of new CV5 files must be identical.
- G. If the CATIA Partnumber and the filename of **new** CV5 files are changed all kind of CV5 links must be maintained.
- H. Forbidden functions shall not be used.
- I. For the same component (for example a standard part) on different location and usage (instances) only one reference including CATIA UUID shall be used.
- J. If standard parts are received from the IO and an additional instance is needed the same part must be used. If a new standard part is needed, this part must be designed to the ITER standard part rules (see [ITER D 34VSEC - CAD Manual 04-2 CAD Data Structuring](#) chapter 4.2.5).

- K. Concerning plant design using Equipment and systems workbenches, data delivered shall only use catalogue items and settings from the Equipment and systems supplier package.
- L. In case of missing Equipment and systems standard items, supplier will have to make a catalogue request ticket to get in contact with ITER catalogue team. [3D Catalog Request tickets](#) Depending on context, new items wished will be produced by supplier or IO but will in any case be published by IO through revision of the Equipment and systems supplier package.
- M. For the modification of CATIA properties the ITER properties panel have to be used.
- N. Modification of CATIA properties with CATIA standard function is not allowed.
- O. The following tasks must be carried out before saving the CATIA data:
  - a. Unnecessary elements should be deleted especially environment data which is copied for temporary usage.
  - b. Auxiliary geometry like wireframe, sketches, surfaces planes etc. must be hidden
  - c. The last feature in a part design body or the whole body must be the “Defined In Work Object”
  - d. The CATDUA utility must be applied with clean option
  - e. All the data file-based should be located in the same folder, check this data management before sending
  - f. The following links between CATIA documents or CATIA documents and other documents are allowed:
    - i. Links between CATProduct and other CATProduct (subassemblies) or CATPart.
    - ii. CCP links and links to parameters between CATPart - skeleton parts and driven parts, symmetrical parts.
    - iii. Links between CATDrawing views and CATPart or CATProduct.
    - iv. Links between CATIA documents and Catalogues synchronized with ITER IO.
    - v. Links between CATIA documents and material libraries synchronized with IO.
  - g. The following links between CATIA documents or CATIA documents and other documents are not allowed and must be isolated:
    - i. Links between CATDrawing documents.
    - ii. Links between CATPart without skeleton approach or non symmetrical parts.
    - iii. Links between CATIA documents and design table, local material libraries, local catalogues, knowledge ware rules etc.
- P. Use always the relevant (normally the most recent) set of data received from ITER.
- Q. If you have send new data to ITER, do not continue to work on this set of data in parallel. You have to wait for a new dataset from ITER containing ITER ID etc. Further changes have to be made with this new set of data received from ITER..

#### 4.4.3 New data

New CV5 files can be made by using standard CV5 functionality.

#### 4.4.3.1 New\_WP\_ASSEMBLY

The Work Package should be the default type of assembly created by the supplier. Using the ITER properties panel the value of the Assembly type attribute must be set to WP.

#### 4.4.3.2 New\_SE\_ASSEMBLY

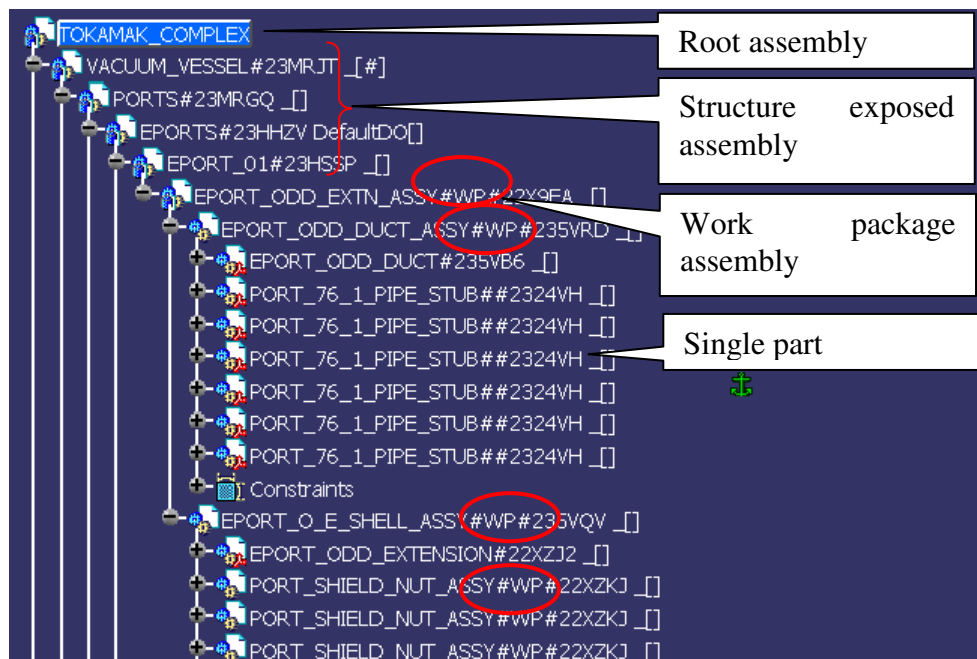
New Structure Exposed assemblies should be used only after contacting the IO designer because it should be an exception to make a new structure exposed assembly on the supplier side.

Reason:

For a structure exposed assembly no CATProduct file is stored in the ENOVIA database. As a consequence only specific parts or subassemblies can be loaded for example as result of a volume filter. The supplier normally works inside a given structure of assemblies which already respect the criteria like volume filtering and add subassemblies in this structure at lower levels. Another reason is that in ENOVIA a structure exposed assembly is only allowed below another structure exposed assembly not inside a Work package.

In an existing structure of assemblies and subassemblies (tree) a CATIA user can identify a Work package by the attribute Assembly Type with the value WP. This value is shown as #WP# in the CATIA part number. Starting from the root assembly the next level(s) below are structure exposed assemblies. The lower level(s) of the tree are built by work package assemblies and single parts.

Using the ITER properties panel the value of the Assembly type attribute must be set to blank.



**Figure 4.4-1 Structure**

#### 4.4.3.3 CV5 Properties

For this new data the CV5 properties shall be modified using the ITER properties panel. For more details please look to Section 5.5 Attributes.



The ITER properties panel tool is part of the PLM package and/or the ITER CAD Supplier Package ([ITER D 24KWJF - 02 ITER CAD Supplier Package](#)).

#### **4.4.4 Forbidden functions**

Suppliers can send a CATProduct containing such entities especially DMU FITTING and KINEMATICS if this is coordinated with the receiving designer on the IO side. The receiving designer can decide either to save these entities inside a Work package or delete it.

#### **4.4.5 Drawings**

The ITER tool FTB manager has to be used to generate for each sheet a drawing frame and an ITER title block with default values. The proper values will be filled in after saving the drawings in Enovia. For new drawings the CV5 properties shall be modified using the ITER properties panel.

For more details please look to Section 5.5 Attributes.

The ITER properties panel tool and the FTB manager tool are part of the PLM package and/or the ITER CAD Supplier Package ([ITER D 24KWJF - 02 ITER CAD Supplier Package](#)).

#### **4.4.6 Specific rules**

Currently no specific rules different from the general rules described in the CAD-manual document have to be applied.