



# How to Create a template “Technical Data Package”

Design and Create rich interactive 3D PDF Documents

Tetra4D Enrich - Add in for Adobe® Acrobat® Pro



# Description of the « Technical Data Package » template

## Goal:

- This template is meant to create 3D PDF documents that contain all the required information to manufacture the part.

## Template structure:

- 3D annotation
- Title block
- Carousel of views
- Actions assigned to buttons

## How to populate a Tetra4D Enrich template:

- The templates created with Tetra4D Enrich can be populated by Tetra4D Enrich (Replace 3D feature)
- A STEP file can also be created using Tetra4D Enrich (Converter plugin) and attached into the PDF document (This STEP creation process is not described in this document)

### Important note:

The documents provided in this package have been created using Tetra4D Enrich V2017

You must be equipped with the same version in order to reuse these documents

**3D Annotation:**  
Area where the 3D model is displayed

**Buttons with "actions":**  
Provide direct access to the most used 3D related controls (rendering modes...)

The screenshot displays the Tetra4D Enrich template layout. The main area features a 3D model of a bracket. To the right is a 'PART NOTES' section with a yellow background. Below the 3D model is a carousel of views showing 'Front View.1', 'SECTION\_TOP', and 'BASE'. At the bottom is a title block containing technical details.

CREATED BY		T4D	CREATION DATE		17/02/02
CHECKED BY		JEM	CHECKED DATE		17/02/03
APPROVED BY		LIV	APPROVAL DATE		17/02/05
DESCRIPTION		BRACKET			
MATERIAL	HSS	PART NUMBER	05XX02XX2017XXFR69	TDP TYPE	
MASS	9.135	FINISH	N/A	MATURITY	

### Notes area

The information that are shown in these text fields are manually defined

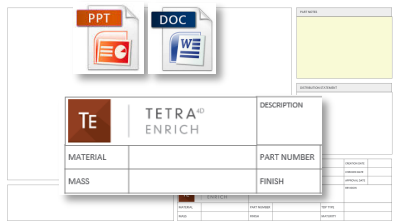
**Carousel of views:**  
Provides a quick access to the CAD views and to the manually defined view

**Title block:**  
Text fields are automatically populated when the CAD file is read.

# Creation process of the « Technical Data Package » template

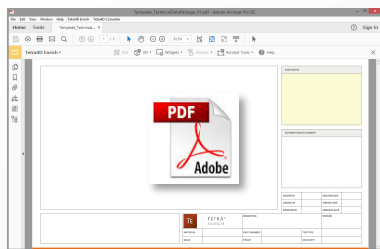
## 1: Create template background

Define place holders to identify the different information that will be put in the document  
Add company logo  
Define notes and labels if any



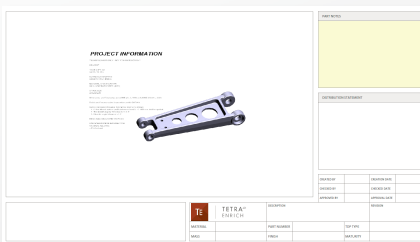
## 2: Convert the document into PDF

Export to PDF from the application or use Adobe Acrobat to convert file to PDF



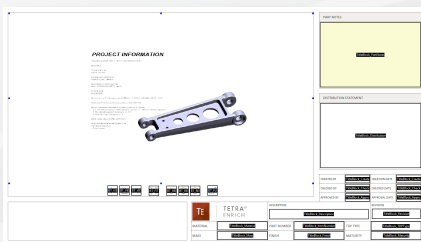
## 3: Create a 3D annotation

The chosen generic CAD model must be representative of company CAD methodology (views, attributes...)



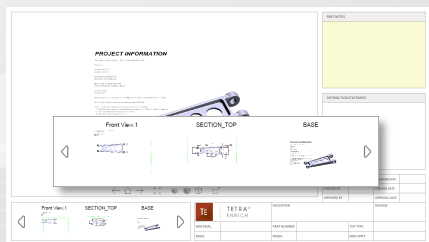
## 4: Create text fields and buttons

Text fields are used to display title block information and part attributes.  
Buttons are used to trigger actions



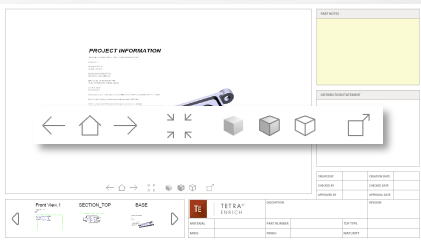
## 5: Create the Enrich widgets

Carousel of views shows thumbnails of existing views and make it possible to activate the selected view



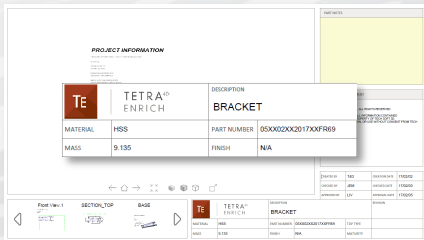
## 6: Define actions

Some actions are linked to buttons, to give access to the most used 3D controls (rendering mode, part visibility...)



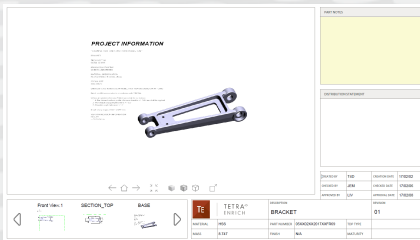
## 7: Define how to populate title block

The text fields can be filled with CAD file information (name, extension) and with CAD model attributes



## 8: Test the template

Open the template and execute a Replace 3D with a different CAD model and validate the result



# 1 - 2

## Define the template layout

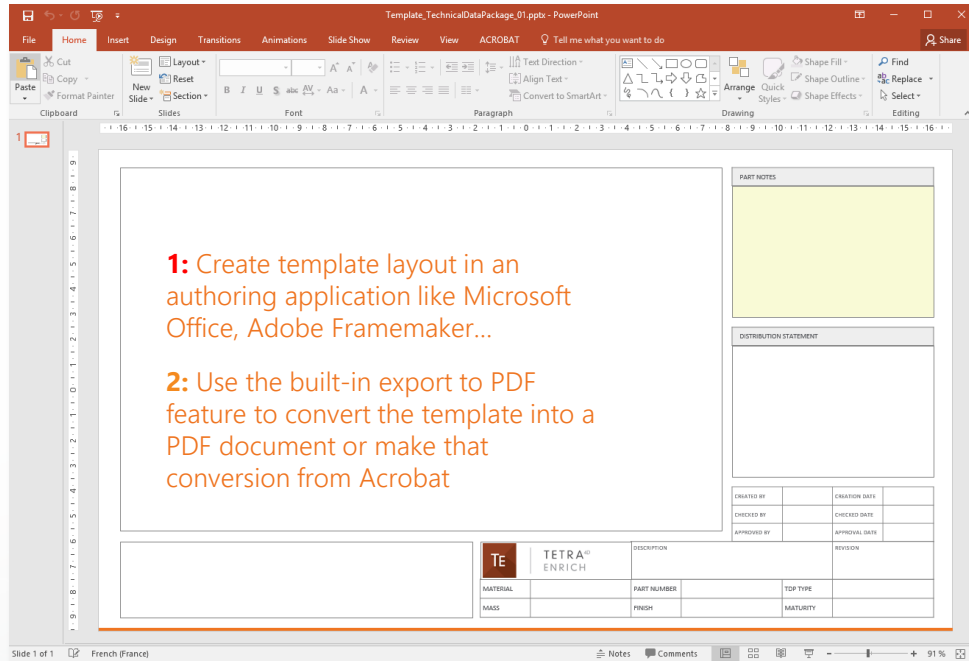
The layout and background of the template can be defined using any Authoring application that can generate PDF files.



Template\_TechnicalDataPackage\_01.pptx



Template\_TechnicalDataPackage\_01.pdf

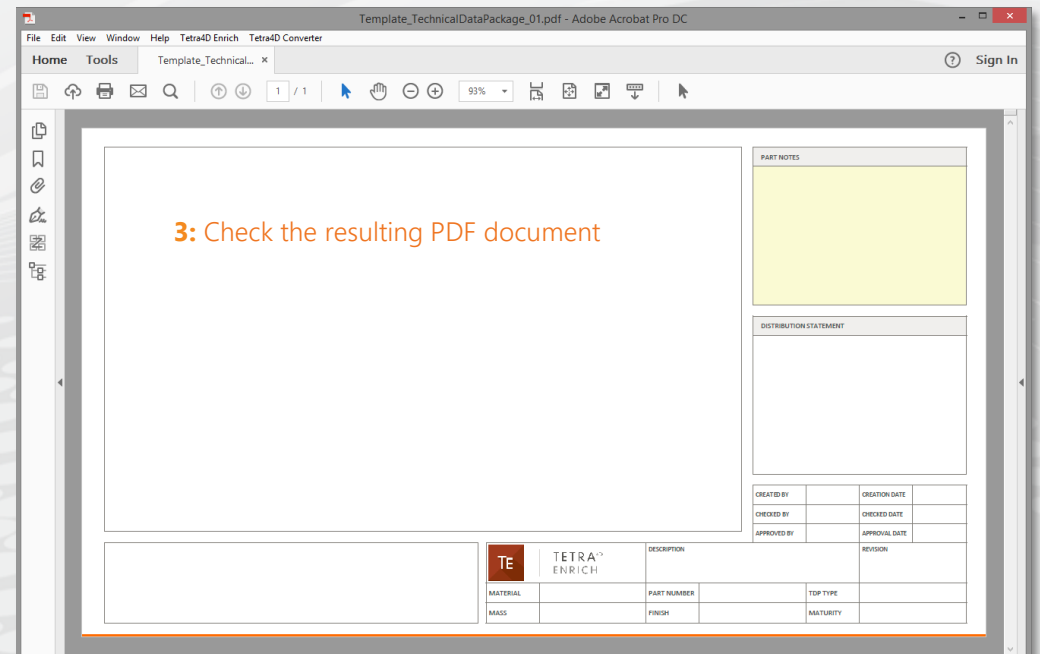


### Note:

This document is meant to introduce the different steps required to build similar templates. It doesn't substitute to the Tetra4D Enrich User Manual, and doesn't detail all the available possibilities of the product.

This documents is focusing on the Tetra4D Enrich features and on interactivity that can be defined between the 3D annotation and other objects (text fields, buttons) present in the 3D PDF document.

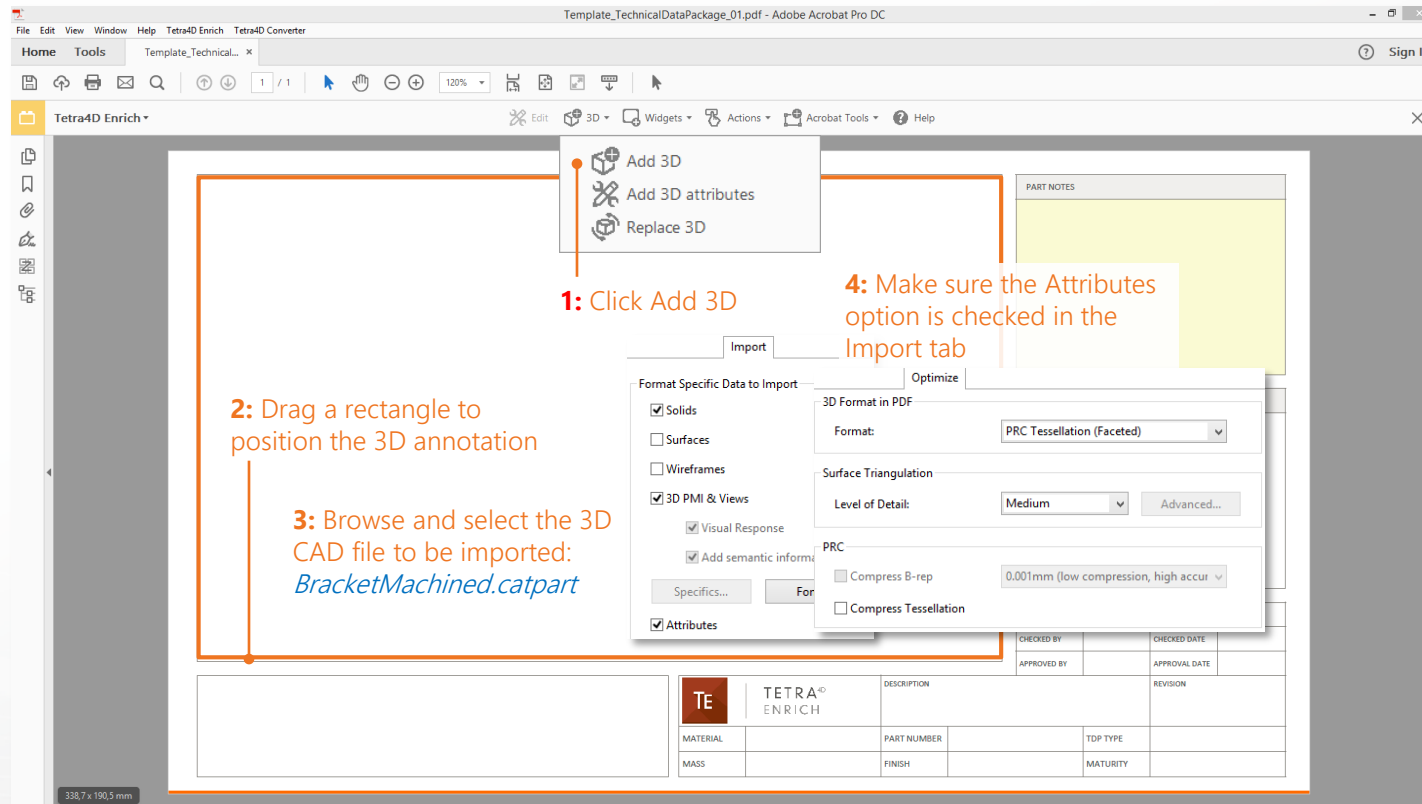
All the documents corresponding to the different steps are provided in the package, as well as the CAD files that have been used to create the template.



The CAD data selected to build the template must be representative of the CAD design methodology, to ease the definition of Tetra4D Enrich objects and features afterwards

 Template\_TechnicalDataPackage\_01.pdf

 Template\_TechnicalDataPackage\_02.pdf

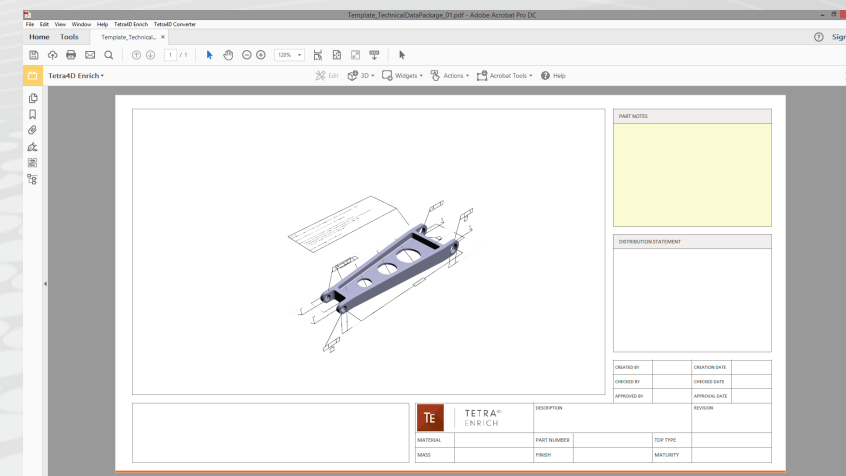


**Note:** It is recommended to avoid:

- Having the 3D annotation overlapping with Acrobat objects like text fields and buttons,
- Defining the 3D annotation background as transparent.

**Note:** The recommended reading options make it possible to build this templates (reading the CAD views and PMIs, the native CAD attributes, and saving only tessellation in the 3D PDF)

Other reading modes and options may also be considered, according to the company CAD methodology, the templates, and the usages of the PDF documents.

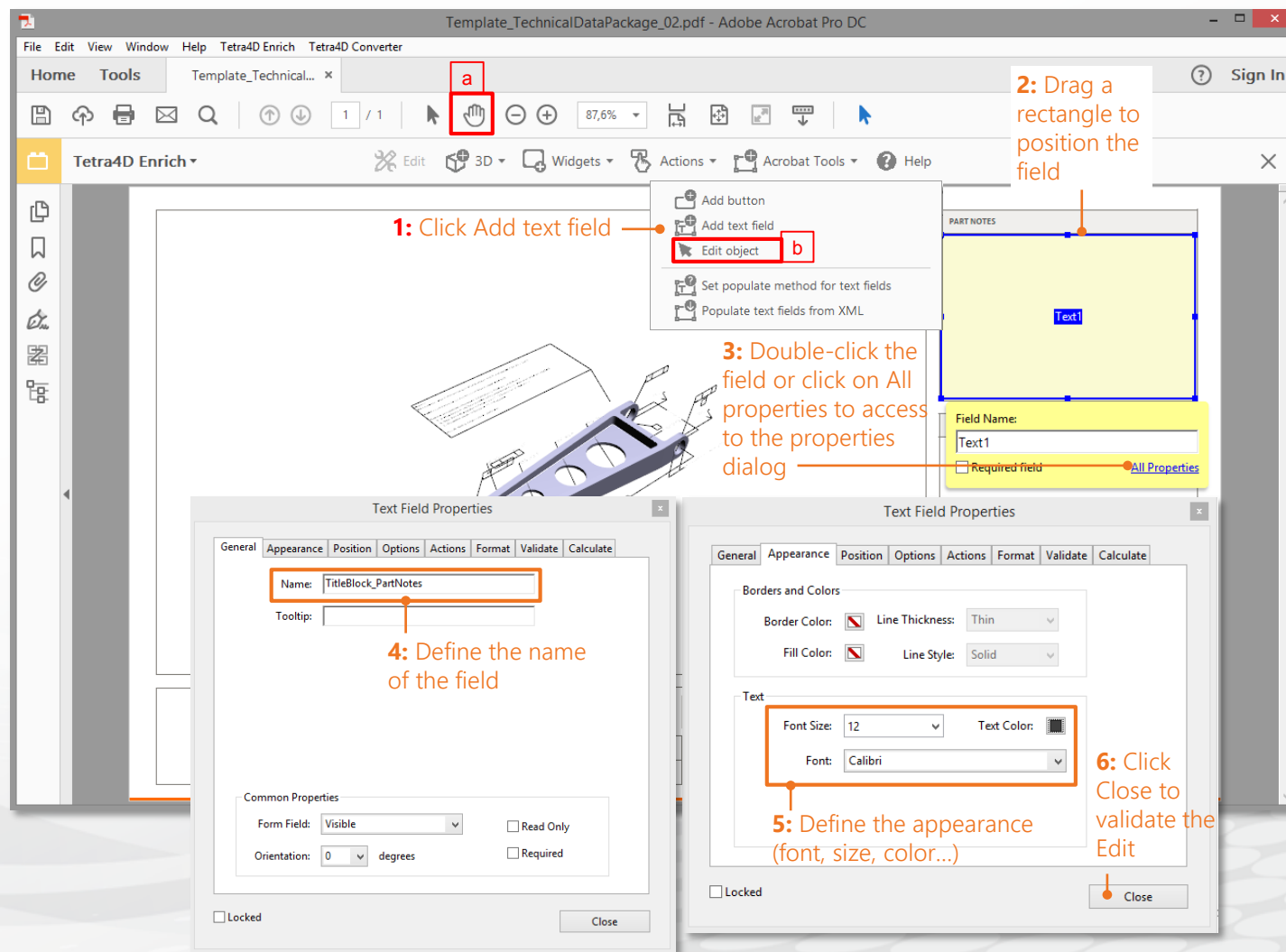




Text fields are defined in the title block area to show information about the CAD data  
Buttons are added to provide user with direct access to some common 3D related features

Template\_TechnicalDataPackage\_02.pdf


Template\_TechnicalDataPackage\_03.pdf



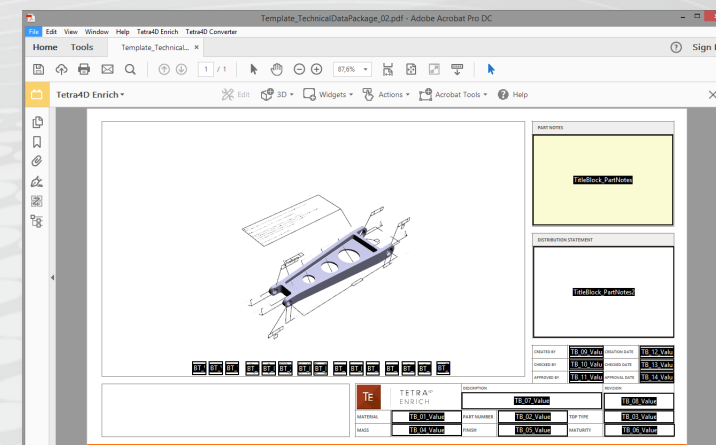
**Note:** The appearance of Acrobat objects is fully customizable. This document only introduces the feature to create text fields.

It is possible to copy buttons and text fields between PDF documents. During Copy, the objects are not automatically renamed, so make it sure afterwards that all the objects have unique names. Also, copying buttons and text fields from an existing Tetra4D Enrich document won't copy the Tetra4D Enrich actions linked to these objects if any

**a)** To exit the Acrobat objects creation mode:

- Click of the icon 
- Or select any Tetra4D Enrich menu

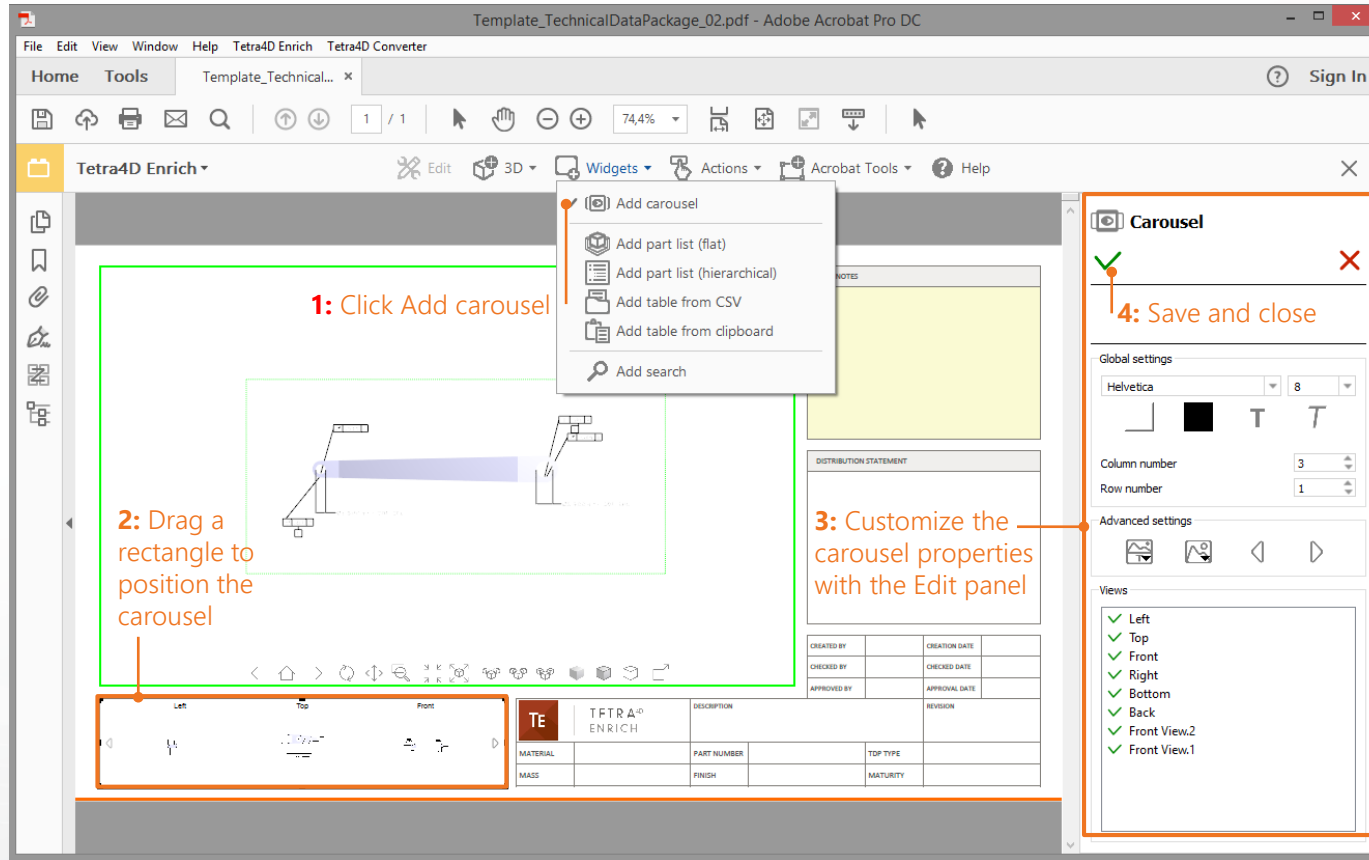
**b)** To edit text fields, buttons, or to move or resize the 3D annotation, select the menu "Edit object"



The carousel of views is an optional widget that provides the consumer with a quick and visual access to the views that exist in the PDF document

 Template\_TechnicalDataPackage\_03.pdf

 Template\_TechnicalDataPackage\_04.pdf

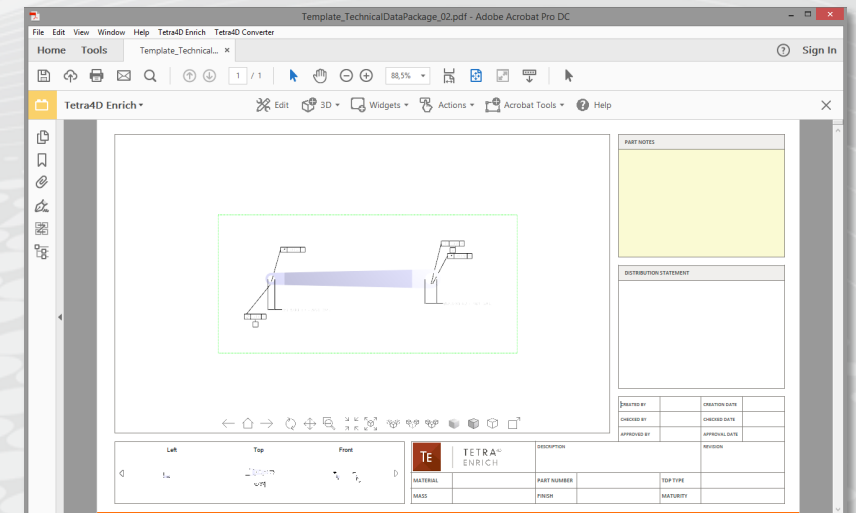


**Note:** The carousel can be defined as an horizontal or vertical frame. The number of rows and columns can be modified and the layout will automatically adapt based on the initial drawn rectangle.

The views that are shown in the carousel are those that are existing in the PDF when the Carousel is created. It is possible to exclude views or to re-order them by using the Views list in the panel.

An existing carousel will not automatically update if new views are manually created.

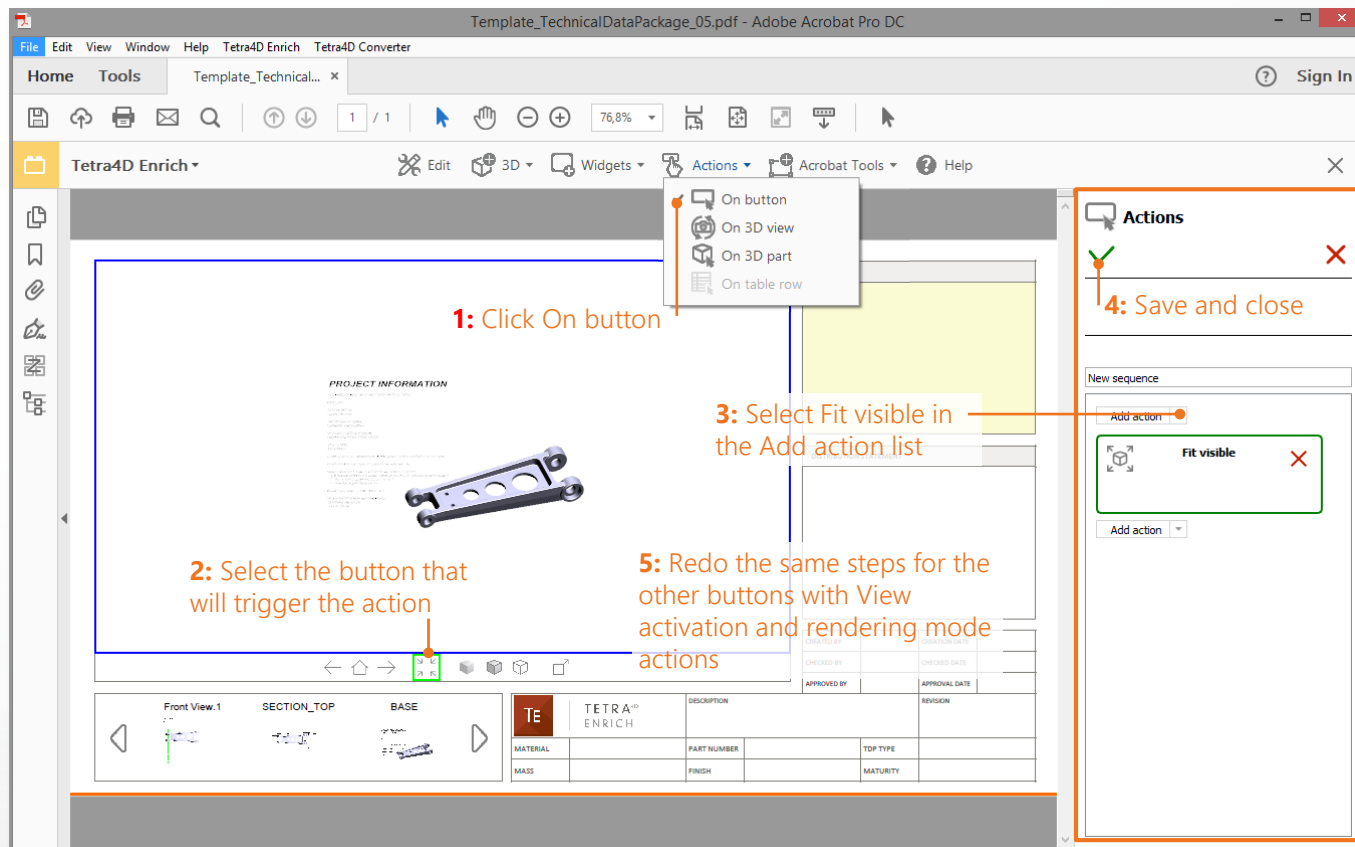
In such a case, it is required to Edit the existing carousel and to add the new views by checking them in the Views list



Actions are optional Tetra4D Enrich features that can be triggered by several means. In this template, the actions are assigned to buttons, and provide the consumer with a direct access to some common 3D control functions

 Template\_TechnicalDataPackage\_04.pdf

 Template\_TechnicalDataPackage\_05.pdf



**Note:** The actions defined in this template are meant to provide user with direct accesses to some 3D related features. Once defined, some of these actions will be executed without requiring any selection of parts:

- Rendering modes: Shading, Shading outline, Illustration.
- View changes: Previous / Next Previous
- Full screen display...

And some will apply to a selection of parts:

- Fit selected

**Note:** An action is defined by:

- A trigger:
  - Click on a button,
  - activation of a particular view,
  - selection of a part in the 3D annotation
  - Selection of a row in a table
- The action performed

It is possible to define a sequence of actions to be executed after on trigger events.

**Note:** The actions defined in this template are "generic" (so are independent of the data present in the 3D annotation). Consequently, all these actions are suitable for templates and they will be maintained when the template will be populated with a new CAD data set.

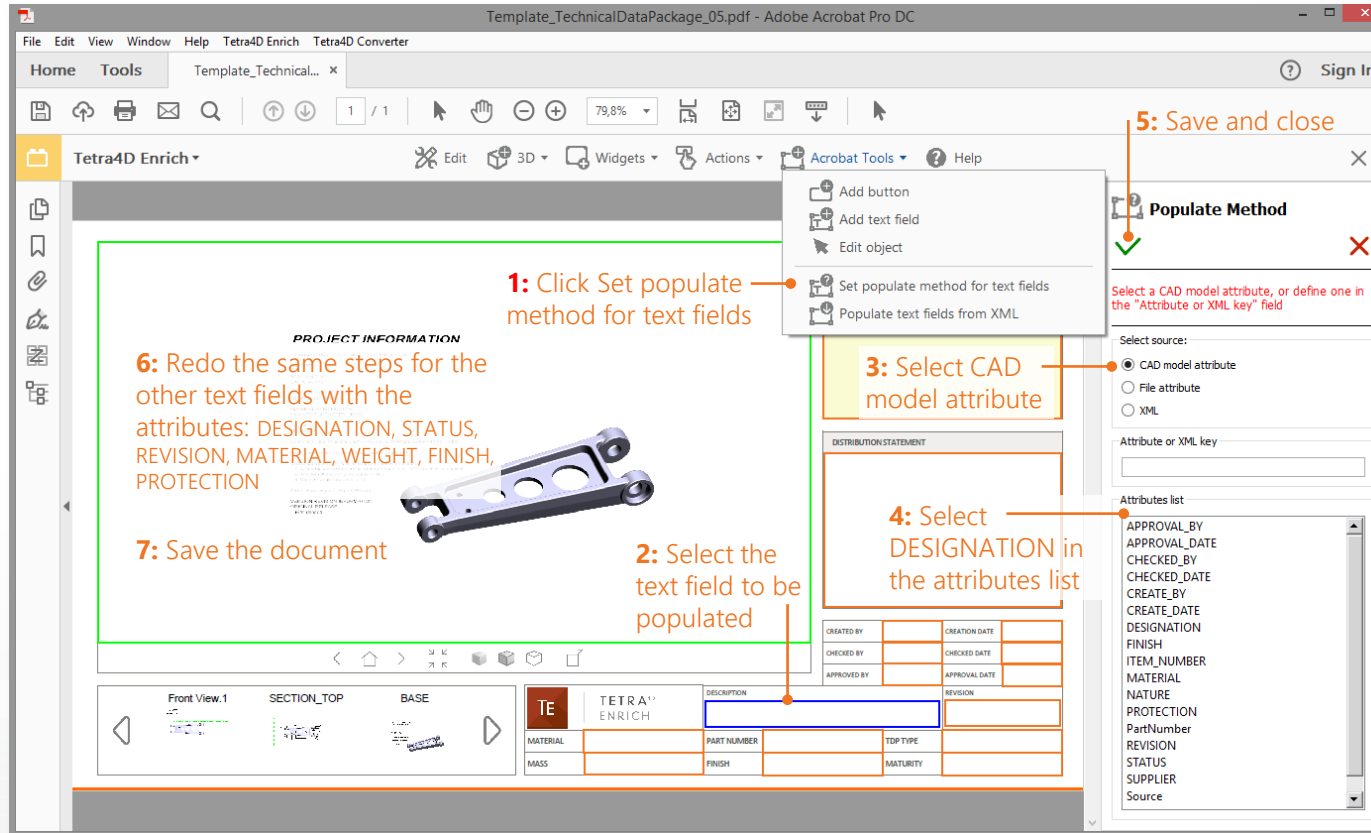


# Define how to populate text fields Save the template

The Set populate method for text fields feature is meant to define what information will be used to automatically fill some text fields when a new CAD data set is imported in the template

Template\_TechnicalDataPackage\_05.pdf

Template\_TechnicalDataPackage\_06.pdf

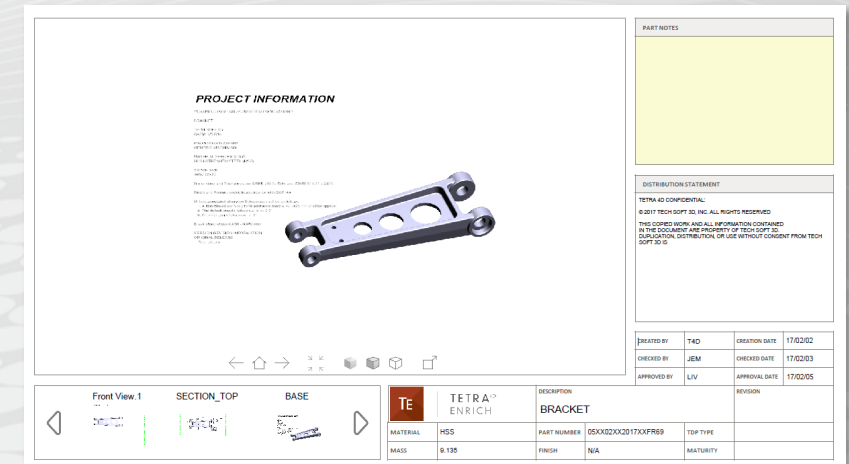


**Note:** The values to be displayed in text fields can be manually defined. However, to avoid errors and to save time, and also because the information to be put in these fields can be defined in the CAD files, the "Set populate method for text fields" makes it possible to define and to actually populate the text fields while maintaining the chosen method in the template.

There are 3 methods to populate a text fields:

- Using a CAD model attribute (ie: material information)
- Using a CAD file attribute (ie: file name, file size...)
- From an XML file

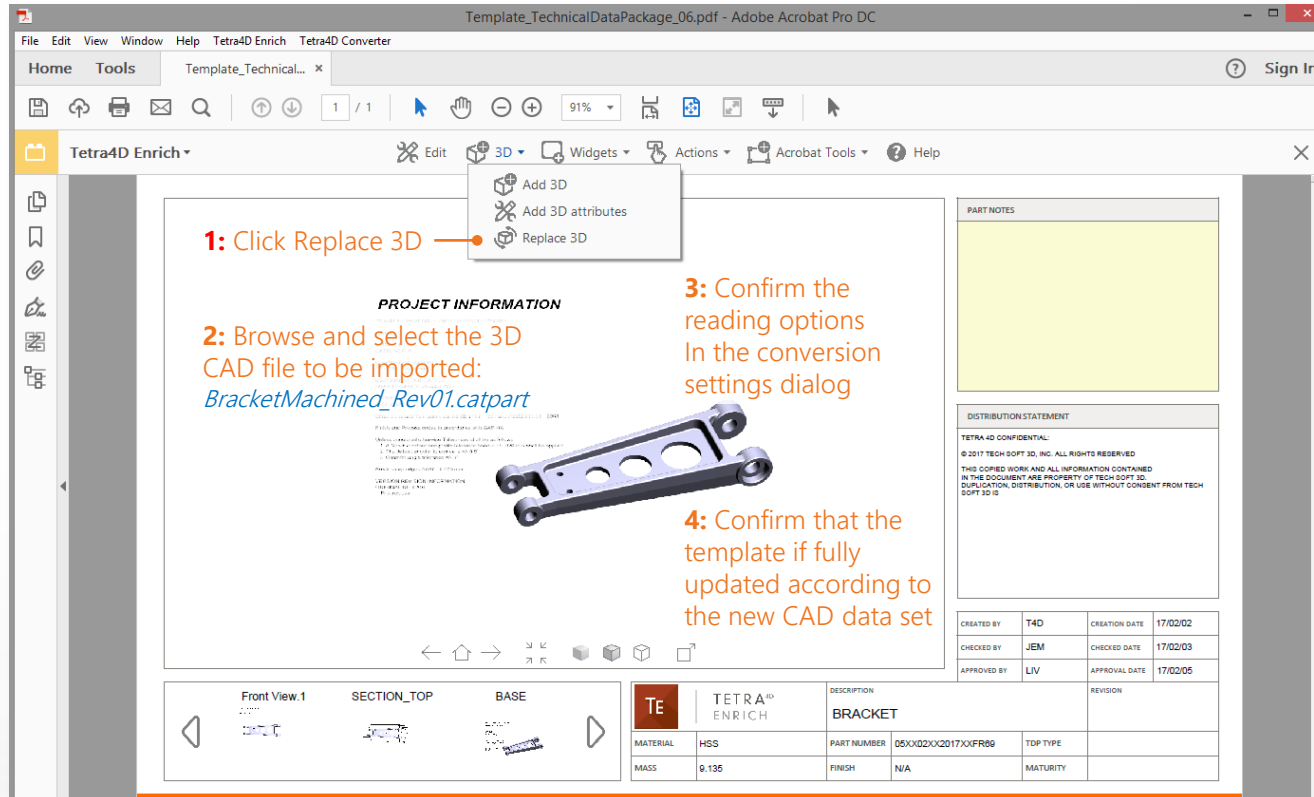
In this template, all the text fields are populated by CAD model attributes.



Once the template has been created, the Replace 3D feature enable to populate it with new CAD data. This step is meant to validate that all the features that have been defined are suitable for a template usage

 Template\_TechnicalDataPackage\_06.pdf

 Template\_TechnicalDataPackage\_07.pdf



**Note:** When an existing template is updated using the Replace 3D feature, Tetra4D Enrich behaves as follows:

- New CAD data are read according to the reading options
- 3D annotation is replaced with the new 3D data
- The Tetra4D Enrich widgets (Carousel of views, Table, Search, Title block) are updated based on the new 3D data
- The Tetra4D Enrich actions are regenerated if generic

**Note:** In case of any problem during the update, or if an existing template has to be modified, it is possible to edit all the Tetra4D Enrich features.

To do so, select the Edit menu in the main toolbar and follow the instructions

