

## How-To Guide

SAP 3D Visual Enterprise Author

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# How To Create a Customized Views.xml File

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# Document History

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# Table of Contents

1	Introduction .....	4
	1.1 Purpose.....	4
	1.2 Prerequisites .....	4
2	Working with the Views Menu .....	5
3	Matching Custom Views .....	7
	3.1 Matching Custom Views.....	7
	3.2 Extracting Rotation Values .....	9

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# 1 Introduction

## 1.1 Purpose

This guide explains how to use SAP 3D Visual Enterprise Author to match custom views and extract rotation values.

## 1.2 Prerequisites

- You should be familiar with 3D concepts
- You should be familiar in the use of SAP 3D Visual Enterprise Author
- You should be familiar with your existing CAD application
- Ensure you have a 3D file and the 2D image of that file accessible to your computer

**Note:** The display of the model on your computer may be different depending on the graphics card installed on your computer, the screen geometry, and the colors and placement of objects that you choose.

The following software and files are required:

- SAP 3D Visual Enterprise Author version 7.1 or 8.0
- A 3D file accessible to your computer
- A 2D file displaying the required image of the model accessible to your computer

## 2 Working with the Views Menu

Many of the views that are displayed in the right-click *Views* menu are controlled by the `views.xml` file that is delivered with SAP 3D Visual Enterprise Author. The file's structure defines the views and folders that are visible within the *View* menu. That is, the file is used to display a set of nested folders containing views from which you can select to display the models.

The `views.xml` file is located in system Application Data folder: `%AppData%\SAP\SAP 3D Visual Enterprise Author 8.0` or `%AppData%\SAP\SAP 3D Visual Enterprise Author 7.1`

The following example shows the code of the default `views.xml` file:

```
<?xml version="1.0" encoding="UTF-8" ?>
<!--Deep Exploration 5.0 Views -->
<Views>

<View name="views example">
  <View name="LTF 1" X="46.1" Y="23.9" Z="0" perspective="0" />
  <View name="RTF 2" X="46.1" Y="-157.1" Z="180" perspective="0" />
  <View name="nested">
    <View name="LTF 3" X="46.1" Y="22.9" Z="0"
    perspective="1" />
  </View>
</View>

</Views>
```

The file's structure is as follows:

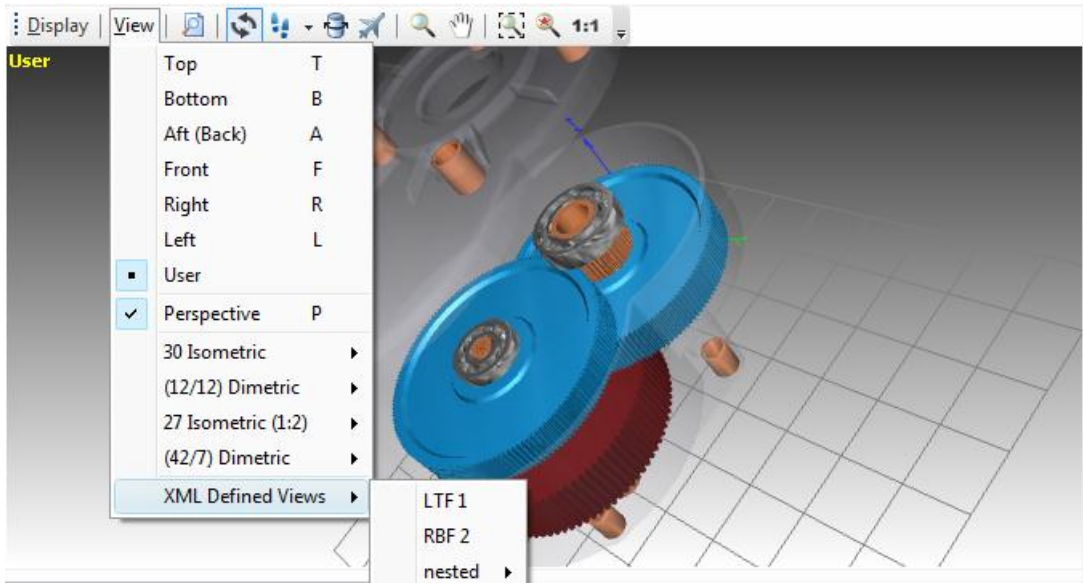
1. View name
2. X, Y, and Z rotation values
3. Perspective view value (boolean)

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**Note:** If the perspective value is set to 1, the scene is displayed in perspective. If perspective is set to 0, the scene is displayed in an orthographic view.

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The following example shows the views that are displayed in SAP 3D Visual Enterprise Author with the default views.xml file:



## 3 Matching Custom Views

If you have a set of existing rotation values for your standard views, they might be not in a form that SAP 3D Visual Enterprise Author can use. This is due to the multitude of rotation orders and axis coordinate systems that are in general use in various industries.

This procedure takes an image made from a specific model in your existing CAD system and lines it up with the same model in SAP 3D Visual Enterprise Author.

### 3.1 Matching Custom Views

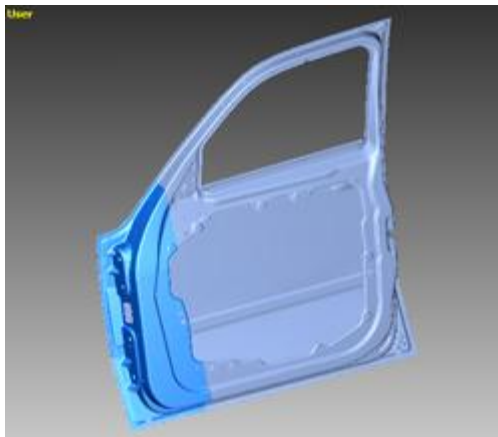
1. Choose a model to use in both your existing CAD system and SAP 3D Visual Enterprise Author, with which to perform the alignment.

**Tip:** To make matching easier, use a model that is thin along one axis and has well defined corners. Here, we have chosen the door of a car. It has well defined corners and, although it is not flat, it is sufficient.

2. Open the model on your existing CAD system, and set the camera to the view that you want to duplicate, ensuring that it is an orthographic view.  
Note that perspective views can also be duplicated but are slightly more difficult to match.
3. Save an image of the model that is slightly smaller than the SAP 3D Visual Enterprise Author viewport, and ensure that the model is centered in the image. For example, you can take a screenshot of the view.

**Note:** If using a perspective view, the model must be centered in the screen (aimed at the CAD system camera). The image must also be exactly the same size as the SAP 3D Visual Enterprise Author viewport.

4. Open the model in SAP 3D Visual Enterprise Author.

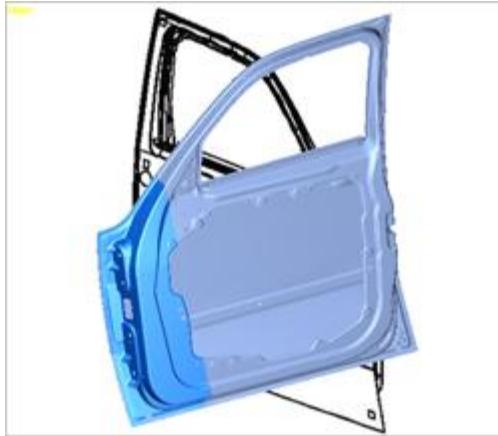


5. Right-click over the viewport and choose *Open Background*.
6. Navigate to and select the image you want, and then choose *Open*.
7. Right-click over the viewport and choose *Background Image > Center* to center the image in the viewport.

**Note:** All scaling is removed from the image when you center the image.

8. Resize the viewport so that it is the same size, or larger than the image. This ensures you can see edges of the image.

**Note:** It is important to use the perspective view if the image to which you are matching is also in perspective.



9. Move your cursor over the viewport label until a text icon is displayed.



10. Right-click the viewport label and click *Transparent* so we can see the image through the model. This aids us in aligning the model with the image.
11. Ensure perspective is turned 'off' (no tick next to the 'Perspective' command) by doing one of the following:
  - Right-click the viewport label and choose *Perspective*.
  - Press **P** on your keyboard.

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**Note:** You may have to resize the model again to match the image.

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The figure below displays how to rotate the model to align with the image:



12. Pan and zoom the model until it is centered on and is the same size as the image.

**Tip:** Use the 3D Navigation shortcut keys to pan, zoom, and rotate the model.

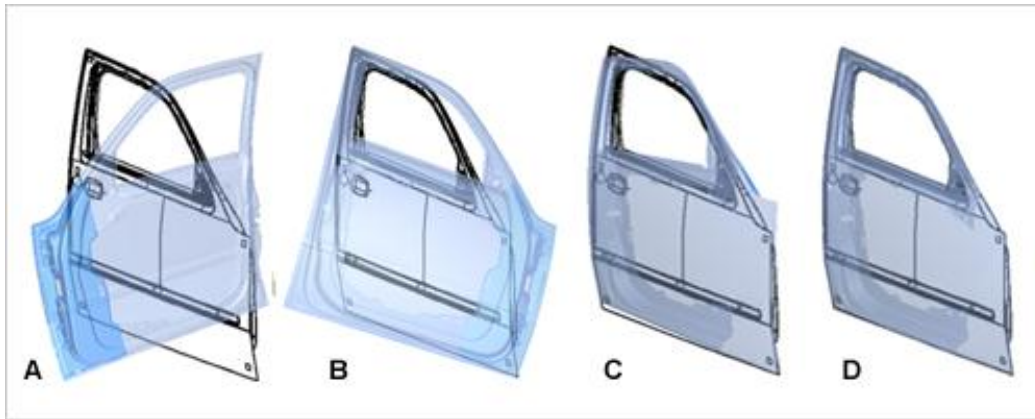
13. Rotate the camera until the furthest diagonal points of the image line up with the corresponding points on the model.
14. When the corners are exactly aligned, rotate, pan, and scale the model until it is aligned exactly with the image.

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**Note:** Aligning the model with the image may take some time.

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- A: Initial view of model and image  
 B: Rotated and aligned diagonals  
 C: Model almost aligned with image  
 D: Model and image aligned


15. Choose *Create > Camera* on the Menu bar. This creates a camera using the current view's camera position.

## 3.2 Extracting Rotation Values

To extract the rotation values and add them to the views.xml file, proceed as follows:

1. Do one of the following to display the camera's *Information* tab page:
  - Right-click the camera in the Scene tree, choose *Object Properties*, and then choose the *Information* tab page.
  - Double-click the camera in the Scene tree and choose the *Information* tab page.
2. The required rotation values are the View X, Y, and Z values.

ViewX="45.544" Y="-157.116" Z="179.941"

3. Copy and paste these values into the views.xml document. Note that choosing the  (*Copy to Clipboard*) button copies all the information in this tab.
4. Add a name for the view and edit the XML as required.

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**Note:** Editing the XML file is described at the beginning of the guide.

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5. Save the file.

The next time SAP 3D Visual Enterprise Author is opened, the custom view is displayed on the *Views* menu.



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