PDF Publishing and PMI Modules
Create Custom 3D PDF Templates Inside Acrobat 3D

Welcome to the world of 3D with Right Hemisphere!

The aim of this tutorial is to create your own PDF Template in Adobe Acrobat 3D, and publish some interactive content from the Acrobat 3D Toolkit, to this new custom template, without writing or copy and pasting a single line of JavaScript. The PDF Template we are going to author here will be an interactive 3D product information sheet.

Before you get started, it is important for you to understand that these interactive 3D PDFs are essentially little applications. Any PDF Template used by the Right Hemisphere PDF Publishing Module is preprogrammed to control certain types of 3D functions such as simple key frame animations, stepped procedures, and layer control to show/hide data and control camera model views. What is important to understand in the creation of a PDF template is that you are building a 3D application which has a purpose. Today 3D viewers that pan, zoom and rotate have very limited business use. As a result, both businesses and the general public do not care about them. However, once you create a 3D application which enables graphical information and other types of data to be easily understood and communicated in a widely distributed, ubiquitous platform such as PDF, you will see an explosion of 3D applications in PDF. So let us get started on creating an interactive 3D application.

Assumptions

Certain assumptions have been made regarding this tutorial:

- You should be familiar with 3D concepts.
- You should be familiar in the use of Microsoft Windows.
- Note that the model displayed on your screen during this tutorial may be different depending on the graphics card you have installed in your computer, the screen geometry, and the colors and placement of objects that you choose.

Features Covered

To create this interactive 3D PDF we are going to focus primarily on the Adobe 3D Toolkit, Adobe Acrobat 3D and the Right Hemisphere PDF Publishing Module, which is a plug-in to 3D Toolkit.

Before we start, let us review some basic 3D navigation instructions:

a) Rotate - Left Mouse Button Down & Drag.

b) Zoom - Right Mouse Button Down & Drag.

c) Pan – Left & Right Mouse Button Down & Drag.

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Requirements

The software tools needed to create this tutorial are:

- Adobe Acrobat 3D.
- Right Hemisphere's PDF Publishing Module.
- Adobe Reader 7.07+ for viewing.

There are three main software components which are shipped with Acrobat 3D:

- Adobe Acrobat 3D.
- Adobe 3D Toolkit.
- Adobe LiveCycle Designer.

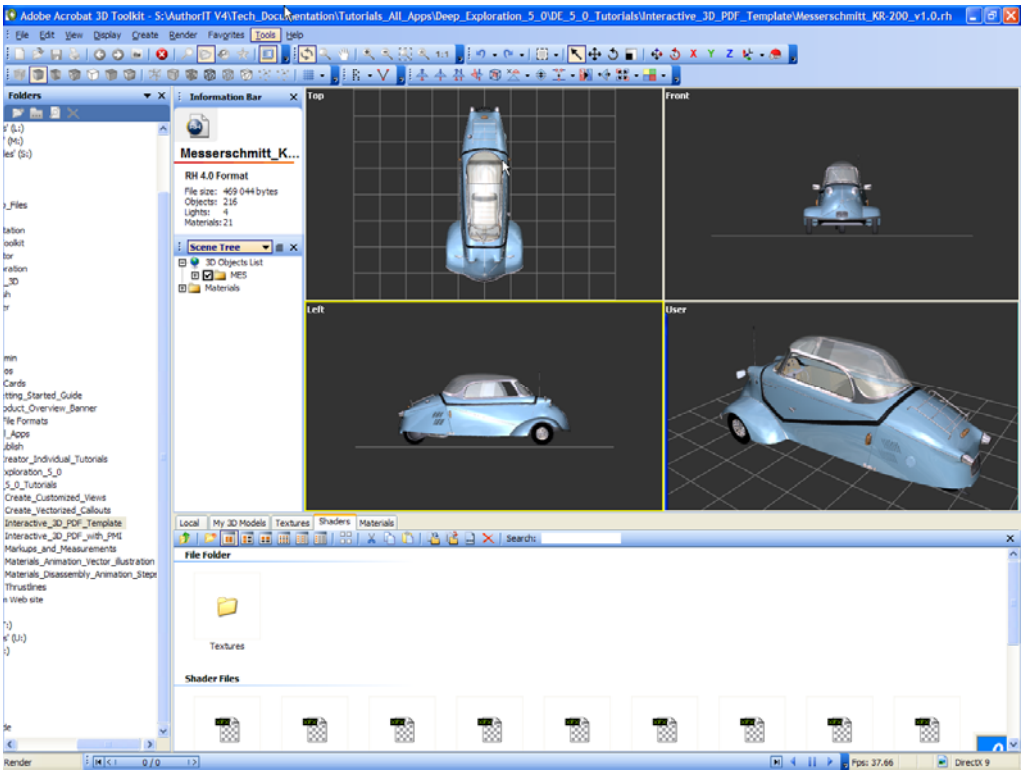
Completion Time

This tutorial should take approximately 35-45 minutes to complete.

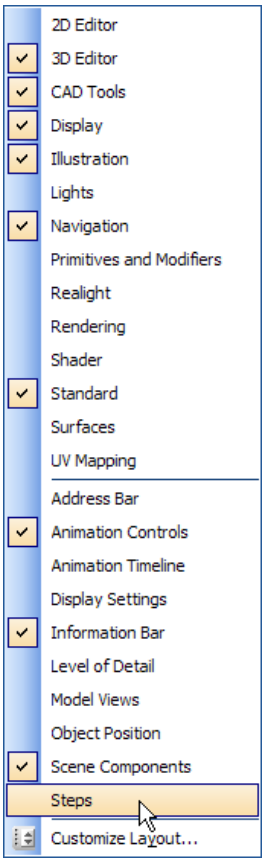
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Procedure: To Create Custom 3D PDF Templates

1 Launch 3D Toolkit, and using the standard Windows Explorer interface, browse and locate the supplied demo .RH file, choose **Messerschmitt_KR-200_v1.0.rh**.

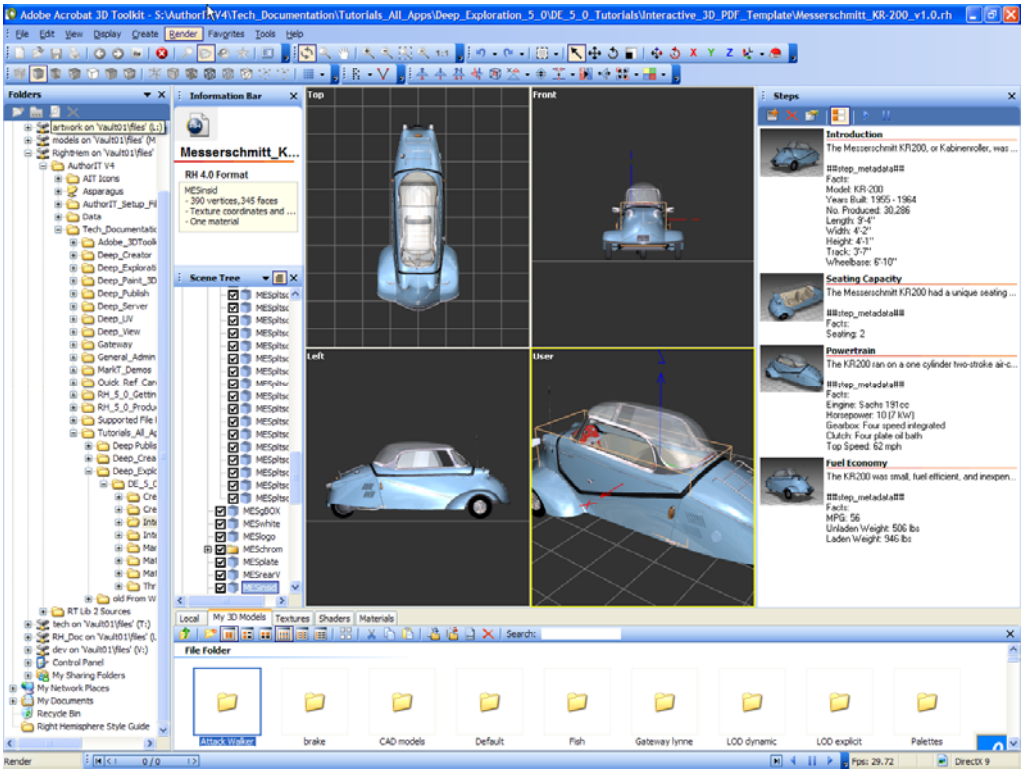


2 Right click in the menu area and choose **Steps**.

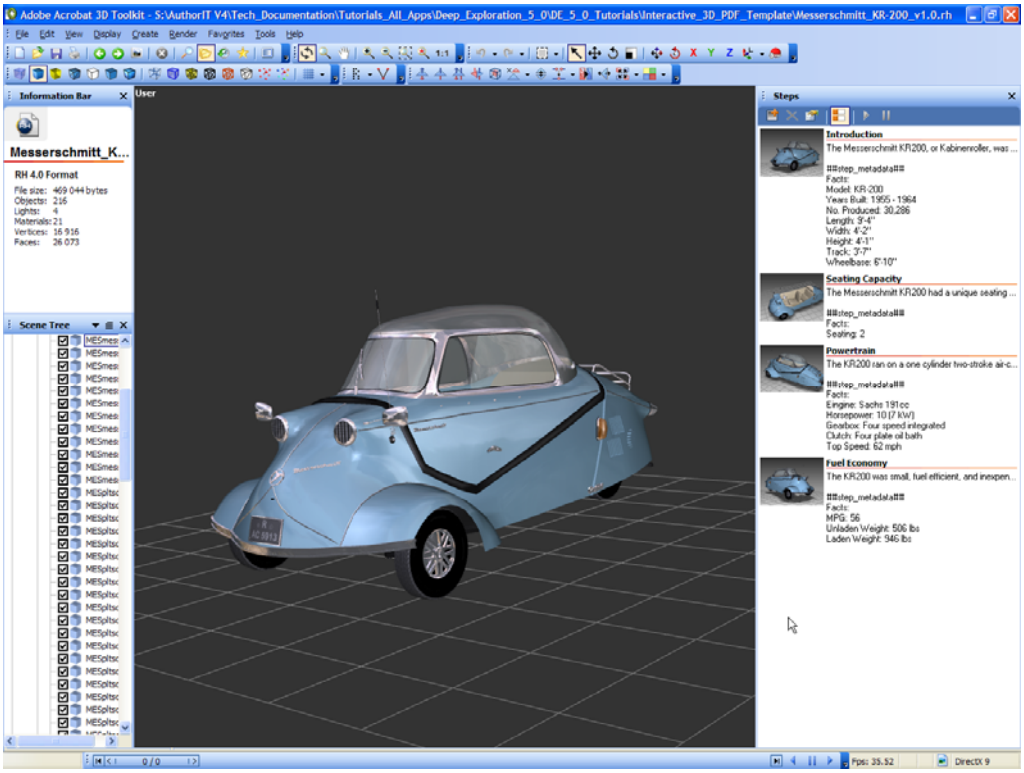


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3 Change the Viewport configuration from 4 views to single view by highlighting the User Viewport and press the **F12** key on your keyboard. You can toggle back to 4 views by pressing the F12 key again.

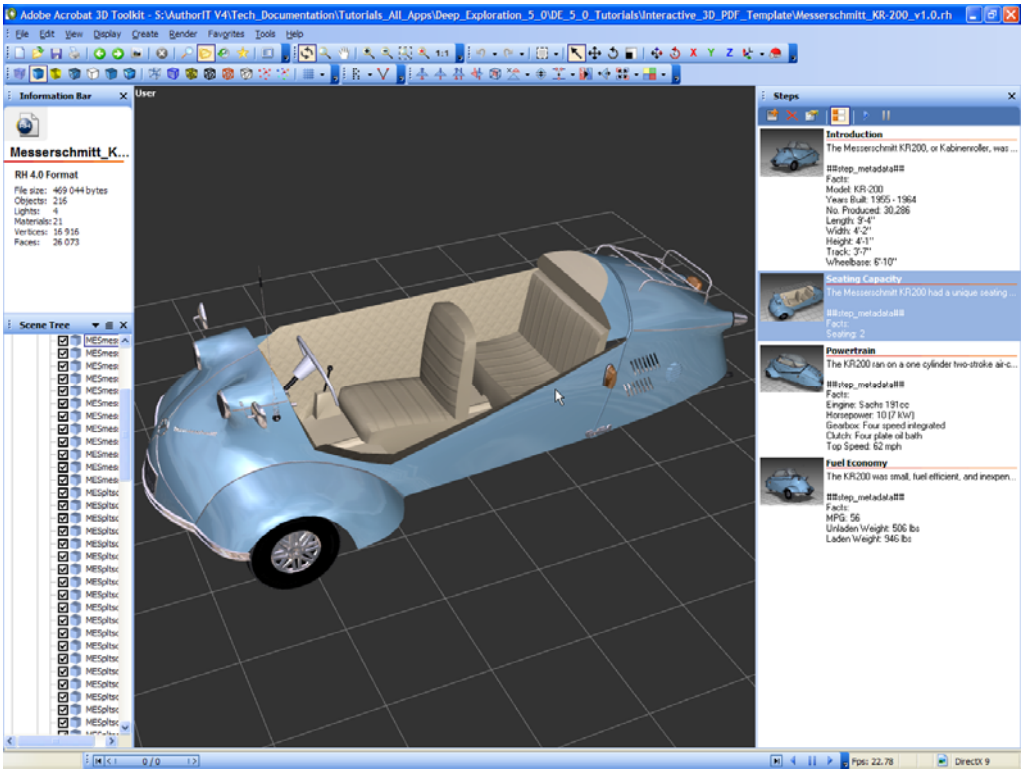


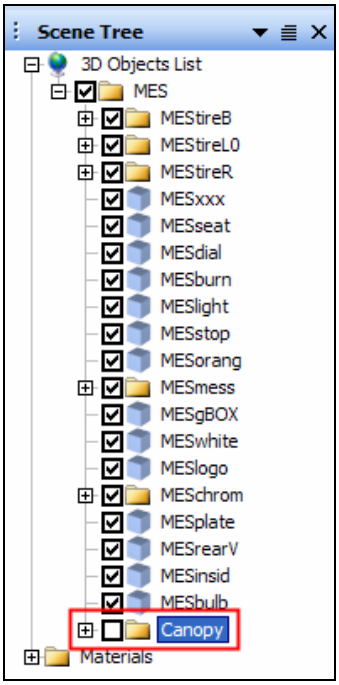
4 Press the **Enter** key to toggle the Folders View on/off so that you can optimize your available screen space.



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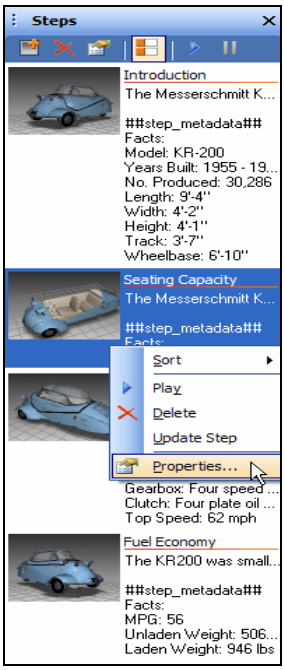
5 Double click on each of the 4 Steps (Introduction, Seating Capacity, Powertrain and Fuel Economy) in the Step Dialog, to see the Step Camera Views change, and notice that in the Seating Capacity Step the Canopy 3D geometry has been turned off so you can easily view the seating configuration.



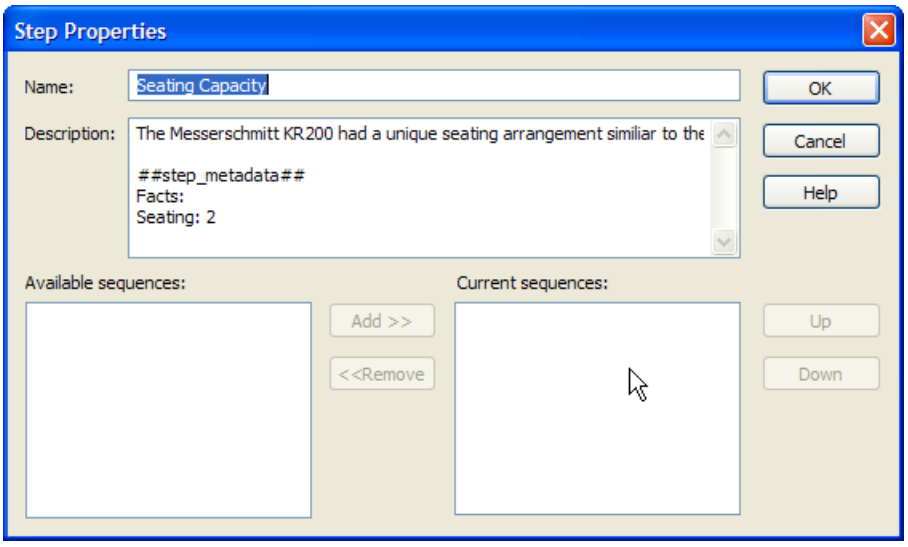


6 If you completed the first tutorial in this series, you will recall that a Step is created by the following scene attributes (Camera View, Step Name, Step Description, Sequence and visibility of objects in the Scene Tree). This sample file will use some of these attributes to enable the display of data within a PDF Template. Right click on the **Seating Capacity Step** and choose **Properties**.

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7 What is unique about this particular sample file is that we are not using the Step functionality to create a Stepped linear assembly or disassembly procedure. We are using Steps to create a storyboard to display product information. Once you understand this concept, any type of product marketing information or product configuration can be created which will enable rich interactive 3D content. Please note that within the Step Description Field we have added another attribute to a Step which is called **Step Metadata**.



8 Each of the 4 Steps (Introduction, Seating Capacity, Powertrain and Fuel Economy) in this sample file has different Step Metadata. We will use this Step Metadata, within the PDF Template, that we are going to create in Adobe Acrobat 3D to display this metadata text, when a particular Step Name button is selected.

Step Metadata can be anything you like. Step Metadata uses key-value pairs when the Step Description field is parsed. If you did not understand what you just read, do not worry, here is an explanation. In the previous screenshot you will see we have some fields (Step Name, Step Description, Available Sequences and Current Sequences). We will use the Step Name to trigger interaction within the PDF Template. When you click on the **Step Name** button, the PDF Template is going to display the Step Description Text in one field and the Step Metadata in another field.

The **##step_metadata##** line of text tells the 3D Toolkit and the PDF Publishing Module that there is information which needs to be remembered and stored in the published PDF. The **Facts:** line of text in the Step Description field is common among all the Steps and is the **key** in the key value pair. It will allow us to create a field within the PDF Template to display the **values** which in this Step is **Seating: 2**.

- `##step_metadata##` = store this data in PDF when published.

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- Facts: = Key in the key value pair.
- Seating: 2 = Value in key value pair.

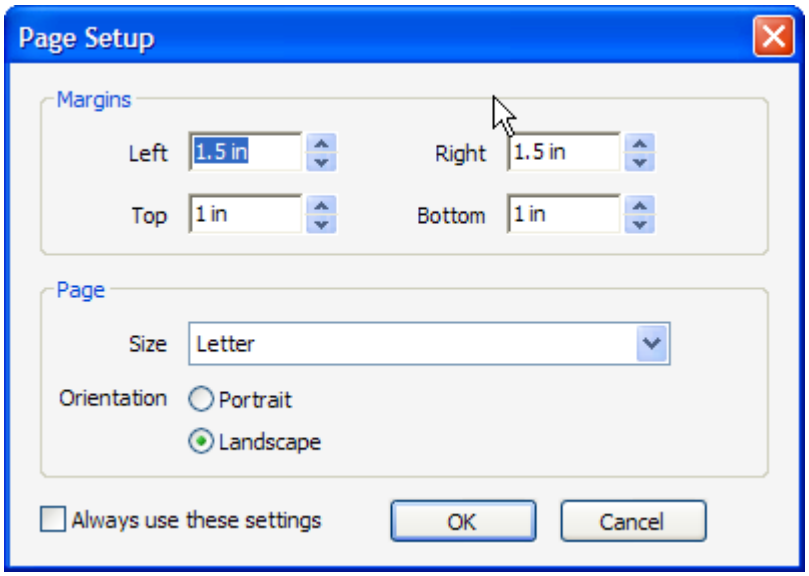
  Please view the other Step properties and review the Step Names, Step Description and Step Metadata so that you can easily follow the PDF Template Creation process.

9 Launch **Adobe Acrobat 3D**.

10 Choose **File > Create PDF**.

11 Choose **From Blank Page**.

12 Click **Page Setup** .
The Page Setup dialog will be displayed.



13 Choose **Landscape**.

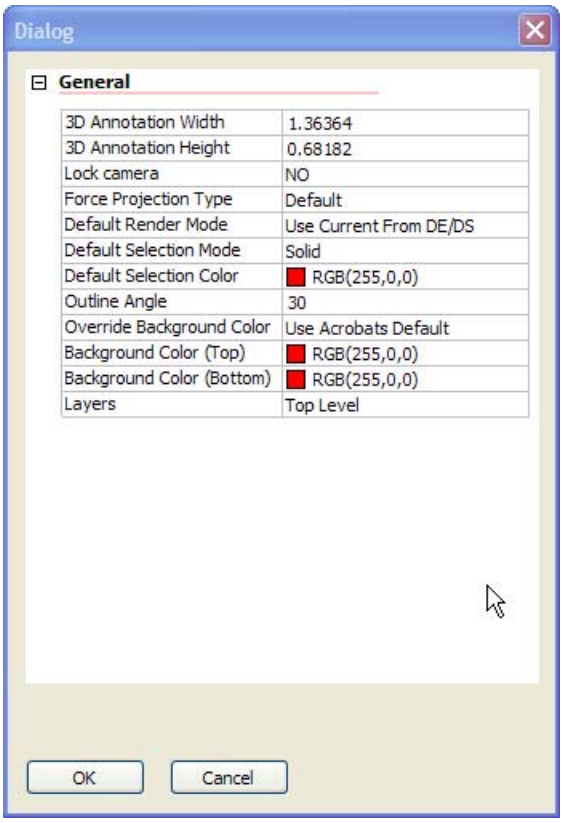
14 Notice that when you installed the PDF Publishing Module, the Installer also created an additional button called **PDF Template Designer** in the Advanced Editing toolbar in Adobe Acrobat 3D.



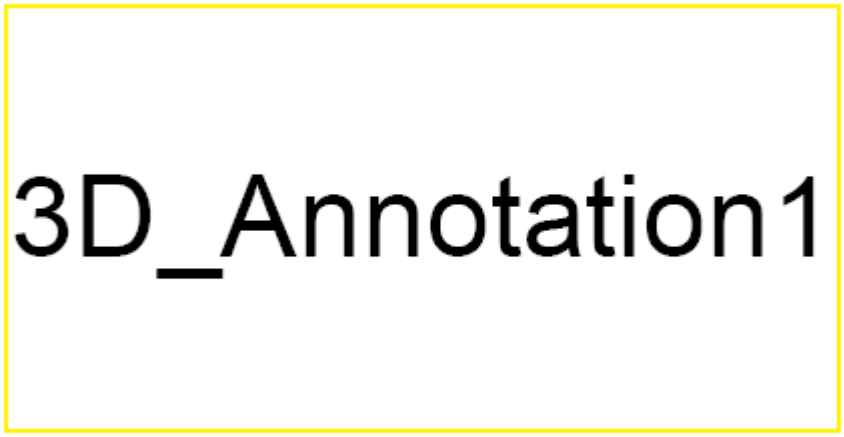
These buttons in the PDF Template Designer are preprogrammed with JavaScript to interact with the 3D content published via the PDF Publishing Module. We will begin to build our PDF Template by placing these objects into the form.

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15 From the Advanced Editing toolbar, click **3D Scene** 
A Settings dialog will be displayed, showing various available settings for the 3D scene.

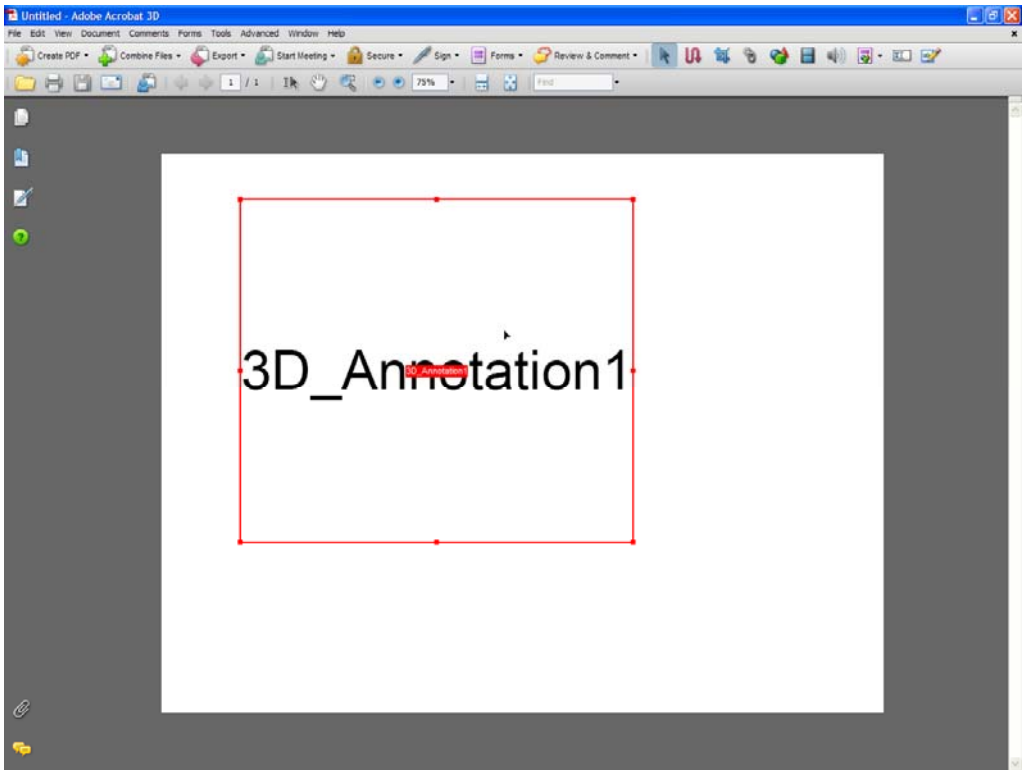


16 Click **OK** and position it at the top left side of the blank form. This is the 3D window where the published 3D content will be displayed.

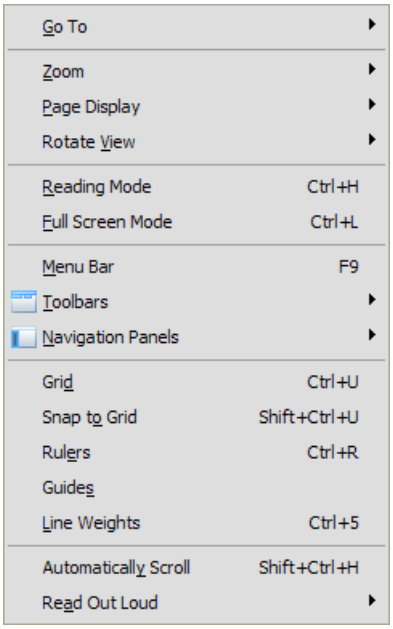


17 Click the Selection Tool  on the Advanced Editing toolbar, and drag the handles at the corner of the object to quickly resize it.

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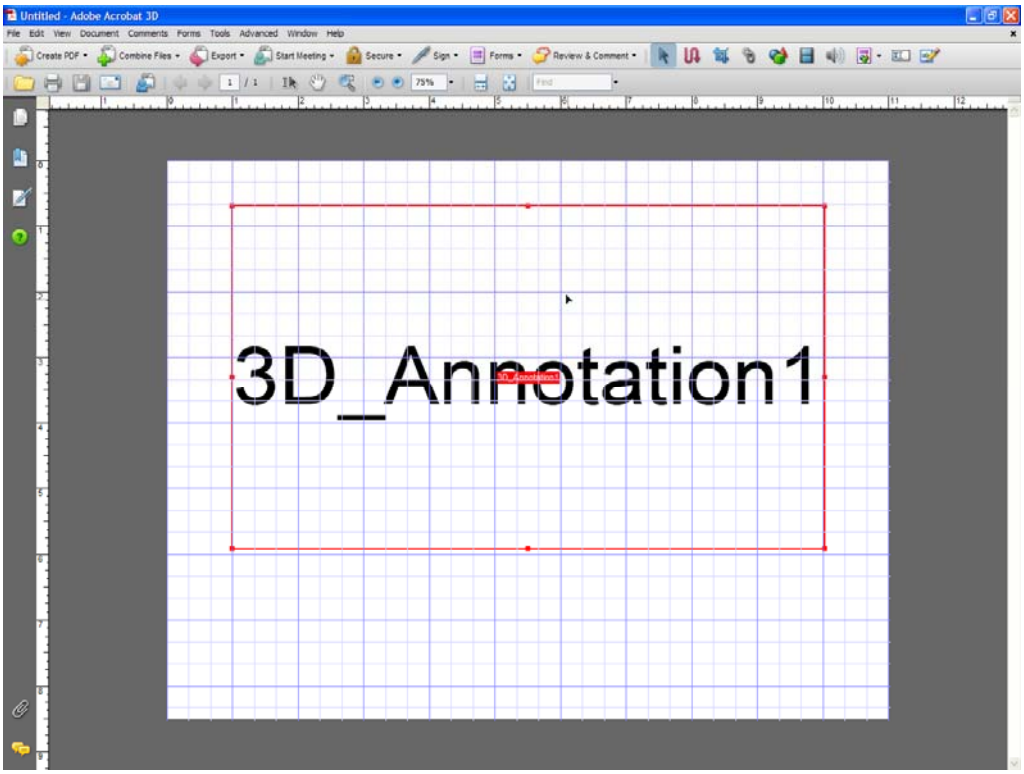


18 Choose **View Menu** and turn on the page layout options you require.



19 Use the handles on any other objects in the form to quickly resize the objects on the page and or click on the objects to move them into the final position using the mouse or keyboard arrow keys. Resize the 3D Scene object so that it fills the top of the form entirely.

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20 From the Advanced Editing toolbar, click **Step Description Block** . A Settings dialog will be displayed, showing available settings for the Step Description block. This is the text field where the Step Description will be displayed within the PDF Template. The text in this field will change per Step.

21 Now we are going to add four Step buttons; one for each step. From the Advanced Editing toolbar, click **Named Step** . A Settings dialog will be displayed, showing available settings for the Step Description block

22 In the **Step Name** field in the settings dialog enter the name that matches the appropriate Step Name in the supplied sample file Messerschmitt_KR-200_v1.0.rh which we reviewed in 3D Toolkit. The names of the Steps are Introduction, Seating Capacity, Powertrain and Fuel Economy. These buttons are case sensitive so make sure they match exactly what is contained in the sample file. The name in each button is the magic which powers the preprogrammed JavaScript to change the Step Camera View and Step Description and Step Metadata.

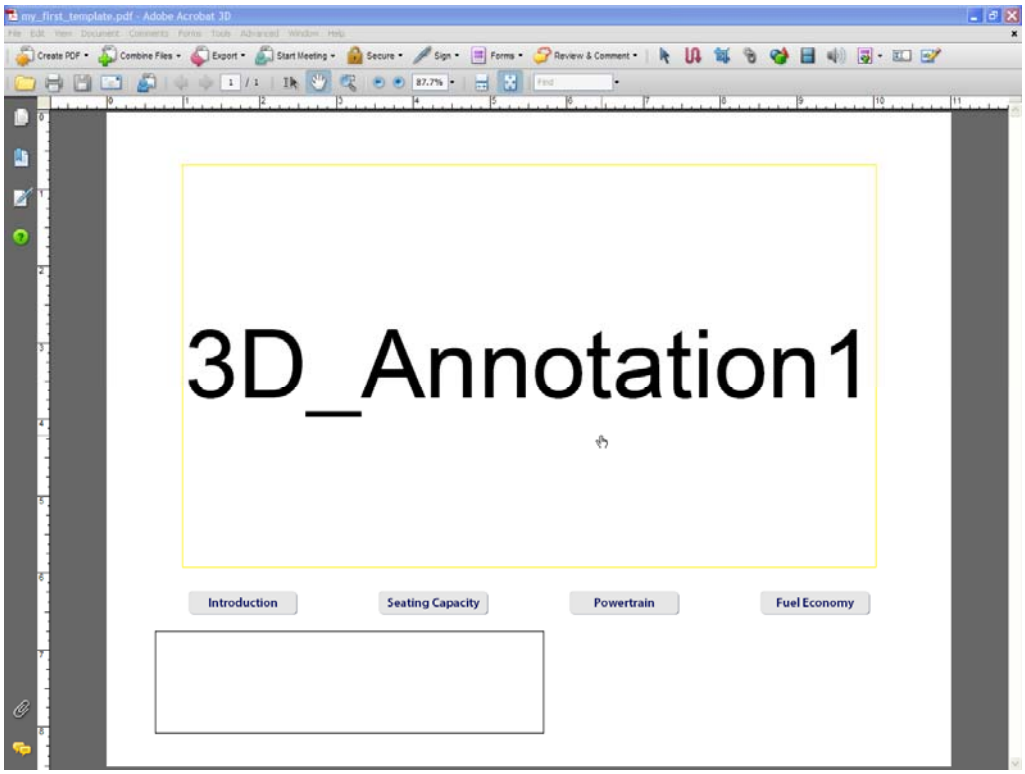
23 Place the four Named Step buttons onto the form, placing them above the Step Description Field, but below the 3D window from Left to Right. These preprogrammed buttons will interact with the 3D scene to change the Step Camera Views and the display of the Step Description text for each Step Name. If we had attached animation sequences to the Steps in 3D Toolkit, these buttons would also trigger the animations.

24 Shift select all four **Step Name** buttons, right click, and click **Distribute > Horzontally**.

25 Right click again, and click **Align > Horzontally**.

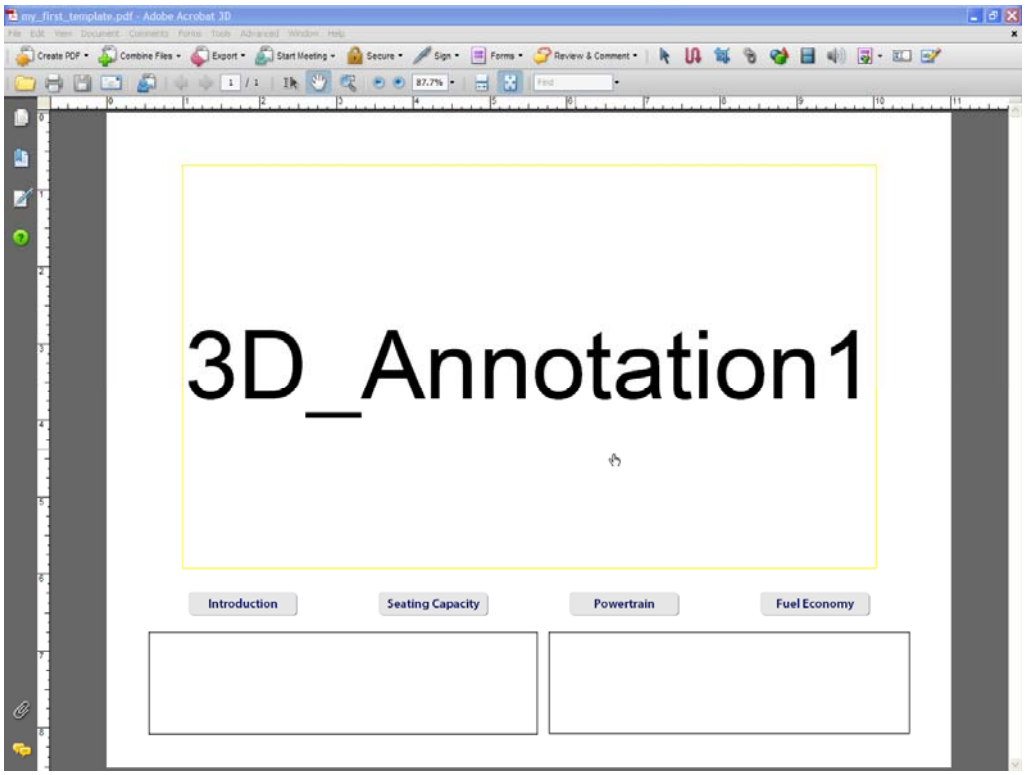
This will ensure that the buttons are equally spaced across the page.

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26 From the Advanced Editing toolbar, click **Steps > Steps Metadata** . A Settings dialog will be displayed, showing available settings for the Step Metadata block. Type **Tools** in the **Metadata Name to Display** field. This is the text field where the step metadata will be displayed within the PDF Template. The text in this field will change per Step.

27 Use the handles on all the objects in the form to quickly resize the objects on the page and or click on the objects to move them into the final position.

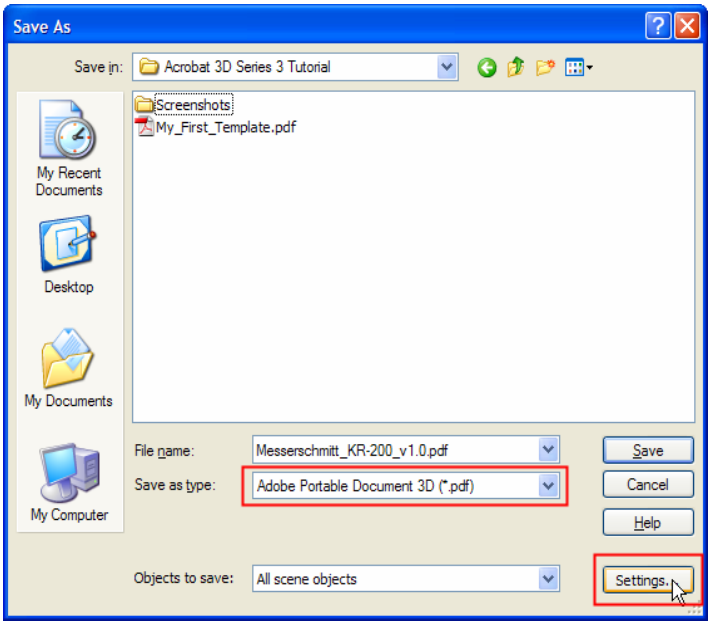


Now we need to save this form as a PDF Template which the PDF Publishing Module will use during runtime to populate the 3D Scene and Step data.

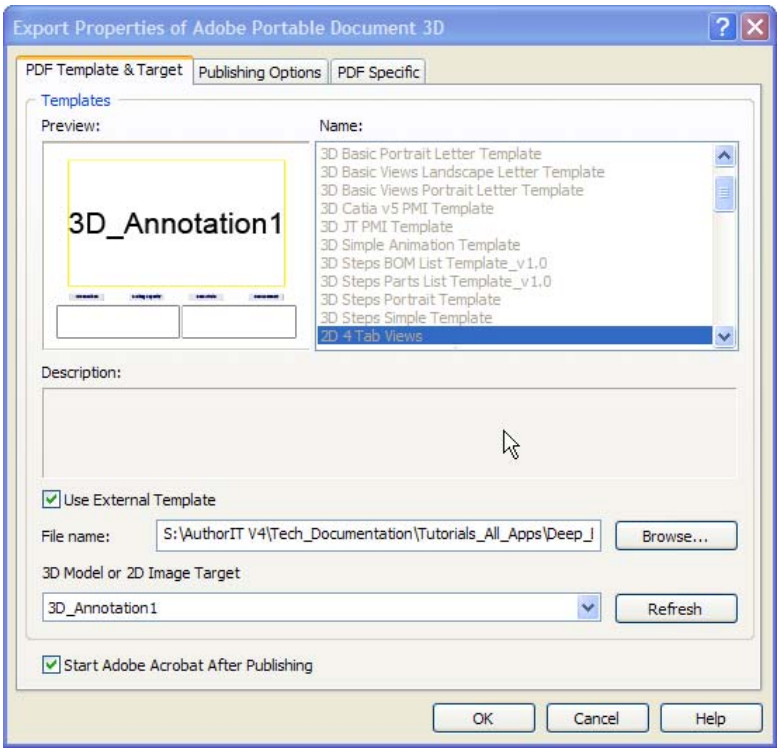
28 Choose **File > Save As** and type the name of the static PDF **My_First_Template** and click **Save**.

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29 Switch back to the 3D Toolkit which should have Messerschmitt_KR-200_v1.0.rh open and choose **File > Save As** and select **Adobe Portable Document 3D (*.PDF)**, click **Settings**.



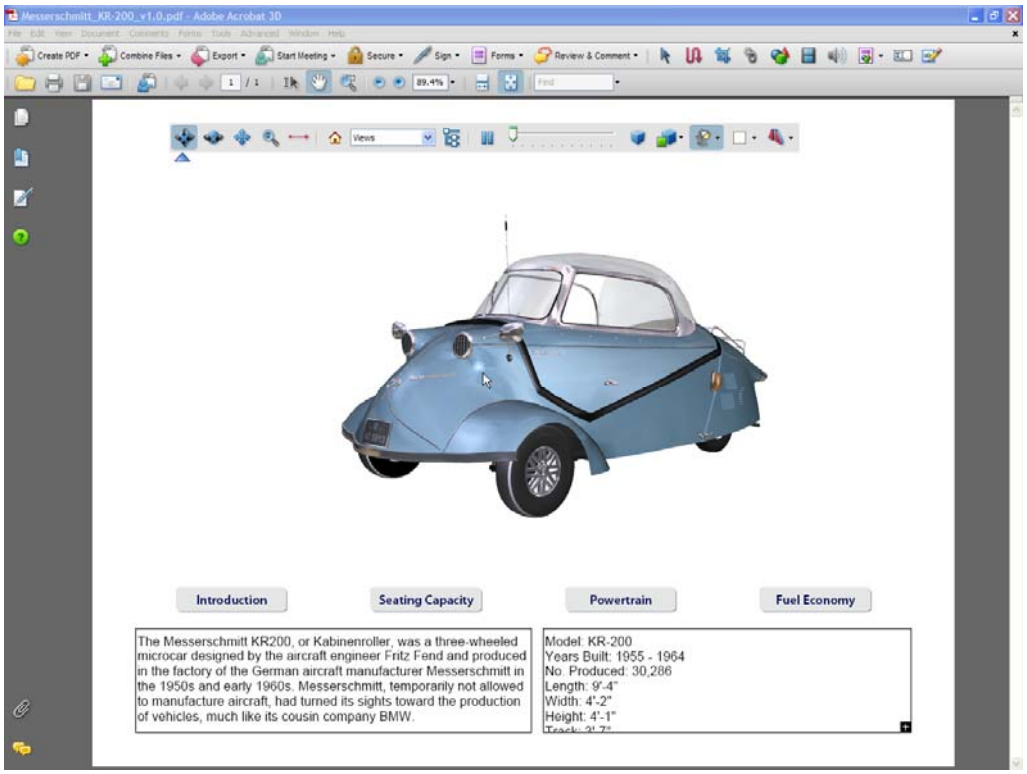
30 Choose **Browse** to select the PDF Template **My_First_Template.pdf**, double click or **Open**.



31 Choose **OK** and save the .PDF file to disk.

Congratulations…. Adobe Acrobat 3D or Acrobat Reader 7.07 should launch and display the fully interactive product information PDF application for the Messerschmitt KR-200. Selecting any of the four buttons on the PDF will change the Step Camera Views and display the Step Information and Step Metadata.

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To view additional examples, please visit the Right Hemisphere demonstration web site at http://www.righthemisphere.com/gallery/3d/DemoDatabase/index.html. If you have any specific questions, please contact the Right Hemisphere team at sales@righthemisphere.com.

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