



# SimLab Plugin for SolidEdge

## Benefits

SimLab plugin for SolidEdge, adds powerful capabilities to SolidEdge.

Added capabilities include:

### 1. Creating interactive 3D PDF files from inside SolidEdge

3D PDF files can be opened using a free version of Adobe Acrobat reader, which is virtually available on every machine.

Sharing 3D models as 3D PDF files, enables designers to communicate 3D models with technical and none technical users, without risking the original model, and without requiring the file recipient to download an external application.

### 2. Direct export of different file formats

The plugin enables SolidEdge users to export difference file formats including **obj** and **sketchup**.

### 3. Exporting SolidEdge models to IPad

Using the plugin, the user can export 3D models from SolidEdge to be opened using the free application **SimLab CAD Viewer** for IPad.

### 4. Rendering

Using the plugin enables users to create photo realistic images for **SolidEdge** models.

### 5. Animation

The user can transfer models from SolidEdge to SimLab Composer to create animations that can be exported as rendered movies or animated 3D PDF files.

## Requirements

The plug-in is supported on SolidEdge ST2, ST3, and ST4 (32 and 64 bit). The file recipient will need a free version of Acrobat reader 9.0 or later on Windows or Mac to open the 3D PDF files.

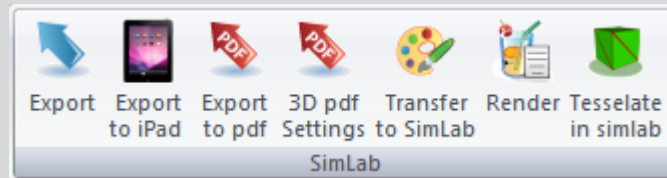
Users who have SimLab Composer 2.31 (or newer) will need to download the integration component only.

Users who do not have SimLab Composer 2.31 will need to download and install the full version of the plugin. The full version of the plugin includes SimLab Composer animation edition.



## Using the plugin

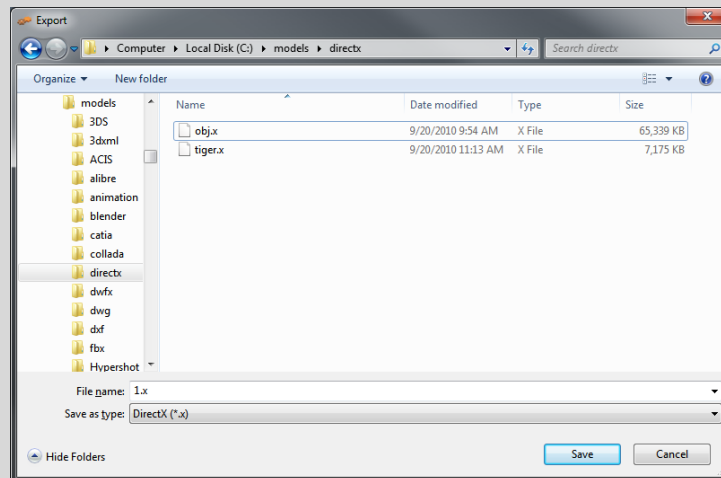
Installing the plugin will add **SimLab** toolbar to SolidEdge Add Ins tab. Added functionality will be accessible using this toolbar.



## Exporting Models

File export using the plugin can be achieved by doing the following:

- 1- Click Export button in the **SimLab** add-in toolbar, this will show the file export dialog.
- 2- Select the file type to be exported, in this case either \*.obj, or \*.skp.
- 3- Click Save
- 4- The model will be exported



## Exporting to iPad

Models can be exported as SimLab Archive files (\*.zim) by clicking the **Export to iPad** button. Zim files can be viewed and manipulated using the free iPad application **SimLab CAD Viewer** available in iTunes.

Information exported to IPad includes: geometries, normals, materials, textures, and cameras.

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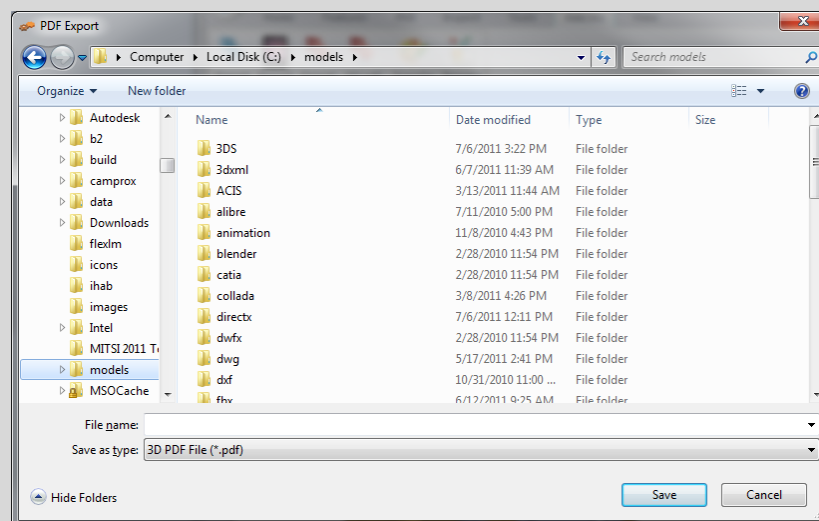
For including advanced scenes states to the generated zim file the user can transfer the model to SimLab Composer.



## Exporting to 3D PDF

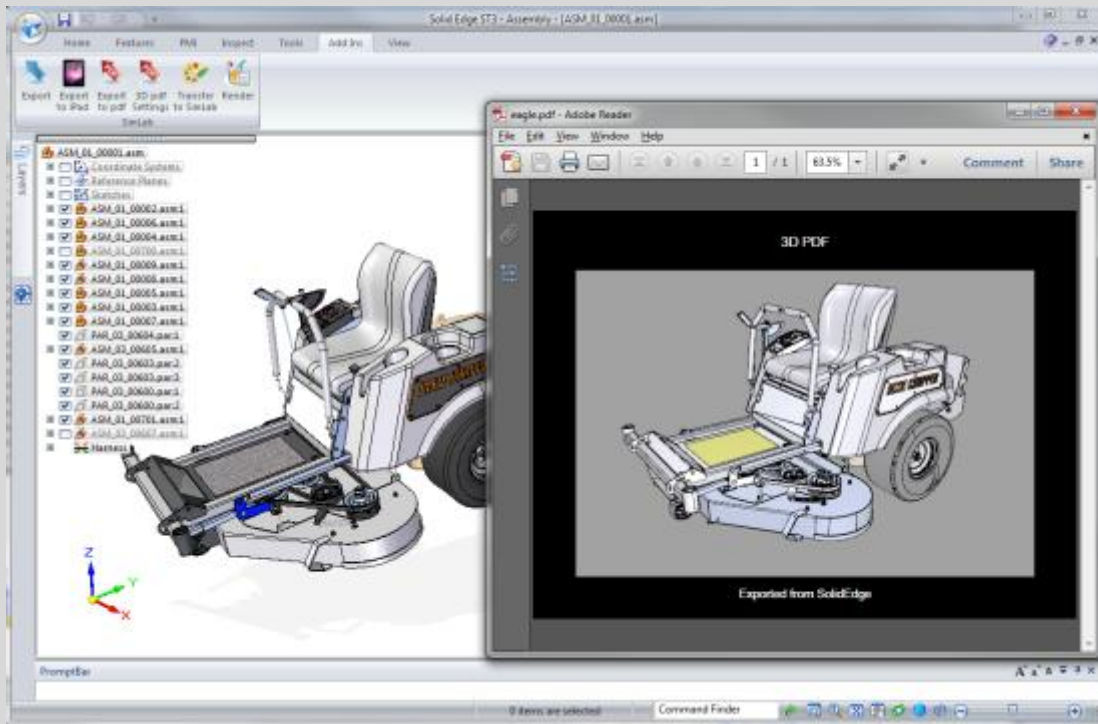
Using this added functionality SolidEdge users will be able to share their models as interactive 3D PDF files.

1. Press the **Export to PDF** button, this will open file export dialog.

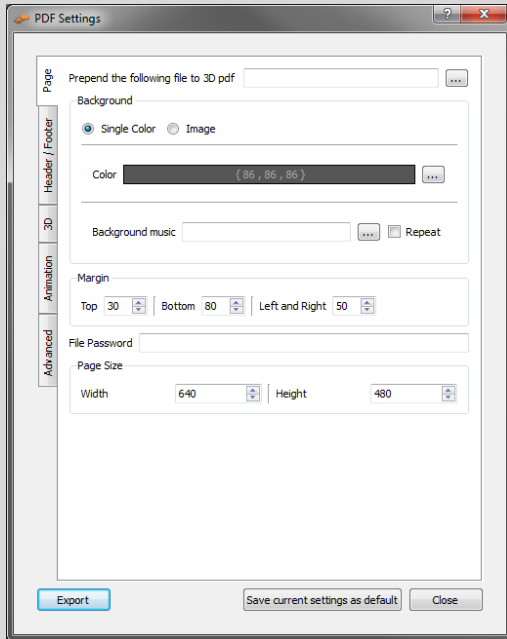


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2. Input the name of the PDF file, and select the location.
3. Click Save



## 3D PDF Settings



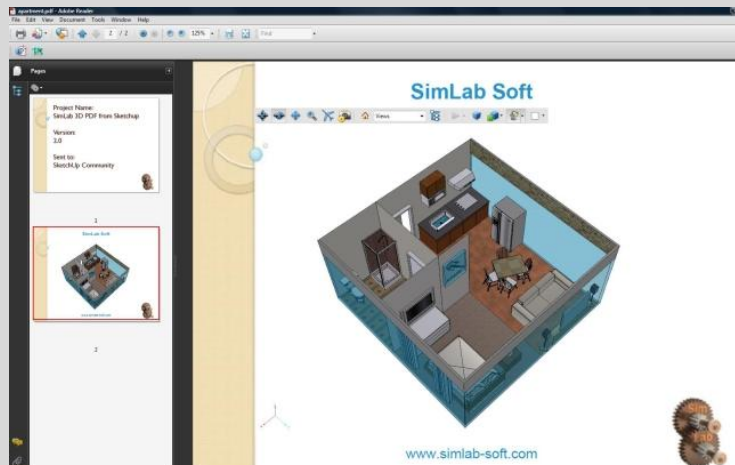
3D PDF Settings dialog enables the user to control the generated 3D PDF file. The dialog can be opened by clicking the **3D PDF Settings** button in the **SimLab** plugin.

## Page Settings

**Prepend the following file to 3D PDF:** this option is used for appending two PDF files together. This can be used to append a 3D model to a company's header, or a project description available in PDF format. PDF files can be generated using different programs, such as; Acrobat, WinWord, PowerPoint, or Open Office.

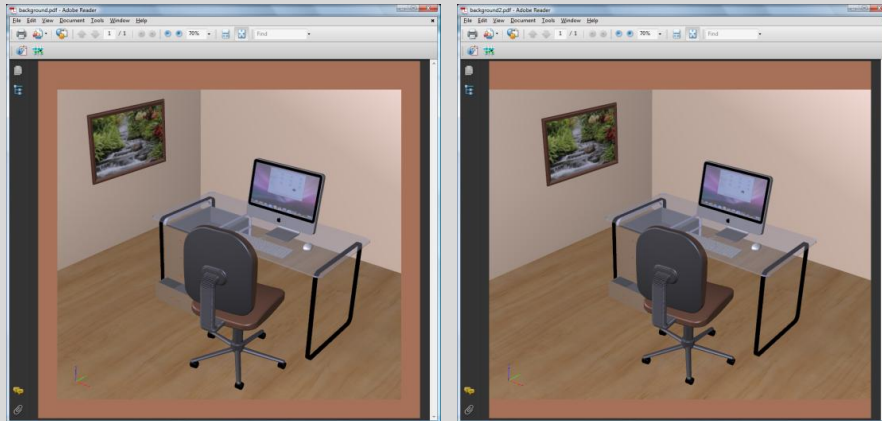
**Background:** This option controls the appearance of the section of the PDF document out of the 3D area. The user can set the background to be either of a single color, or to be an image. The **Scale To Fit** option is available if the image needs to be scaled to fit the background area.

**Background music** option is available for users to add music, in '\*.mp3' format, to the created 3D PDF files. Selected music will be automatically played while the 3D PDF file is open, the file recipient can optionally turn off the music. Checking the **Repeat** option will cause the mp3 file to automatically repeat itself. The selected mp3 file will be automatically embedded inside the 3D PDF file. The following example shows a 3D PDF file added to an existing PDF template file.



**Margins** of the 3D PDF page determine the 3D model area.

In the left image, left and right margins were set to 40, while in the image on the right both left and right margins were set to 0.

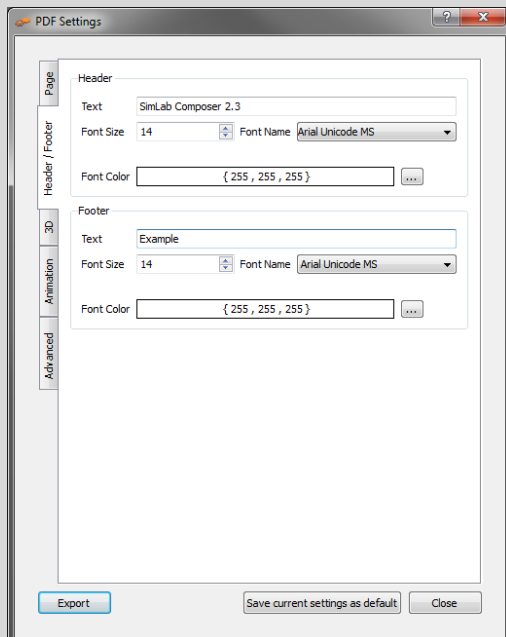


**File Password:** using the optional password will protect the contents of the generated 3D PDF file; the recipient will need to use the password to view the 3D PDF file.

**Page Size** setting enables the user to input the required page size of the created 3D PDF file.

## Header/Footer Settings

The user can use the header/footer settings to input text, color, font, and font size for both header and and/or footer for the created 3D PDF file.



In the image below a header was added to the generated file. This file was created by selecting the **Image** option in the **Background** setting, under Page tab. For the image to cover the 3D model's area the **Transparent** option was selected in 3D tab.

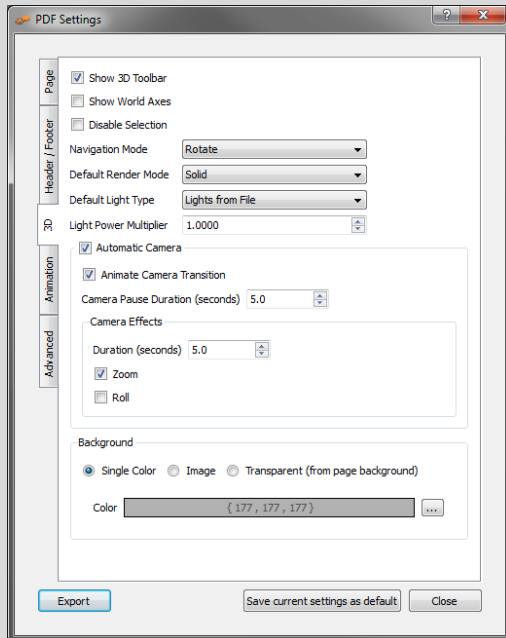


## 3D Settings

**Show 3D Toolbar:** shows or hides the 3D toolbar in Acrobat reader when opening the 3D PDF file.

**Show World Axes:** shows or hides the world axes in the lower left part in the 3D PDF file.

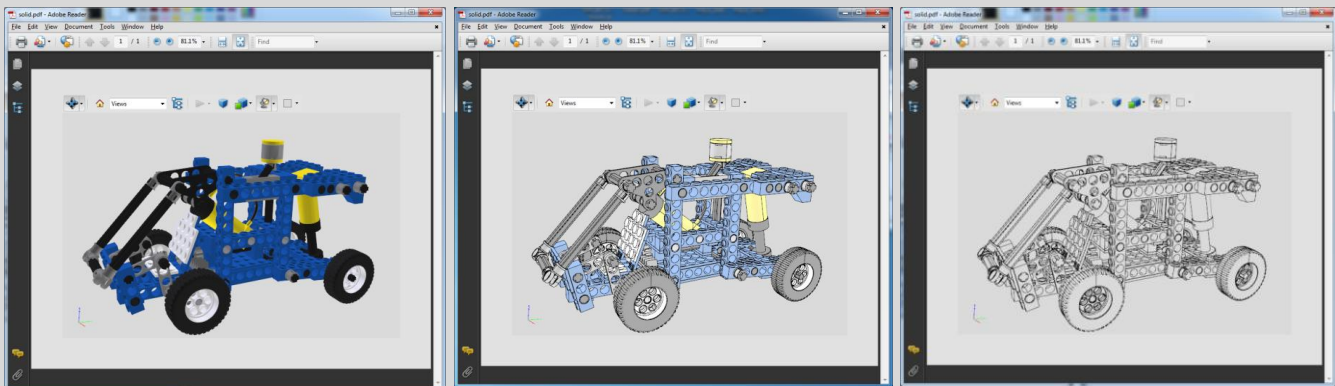
**Disable Selection:** disables or enables selection of geometries in the 3D PDF file.



**Navigation Mode:** the user can set the default navigation mode when opening the 3D PDF file to be one of the following **rotate, spin or walk**. The user of the 3D PDF file can choose to change this default mode inside the 3D PDF file.

**Default Render Mode:** using this option, the user can select the default render mode to be one of the following (Solid, Solid Wireframe, Transparent, Transparent Wireframe, Illustration, Shaded Illustration, Solid Outline, or Bounding Box).

The following images show the same model using different render modes.





**Default Light Type:** light type can be one of the following **white, day, night, bright, CAD optimized, cube, head lamp.**

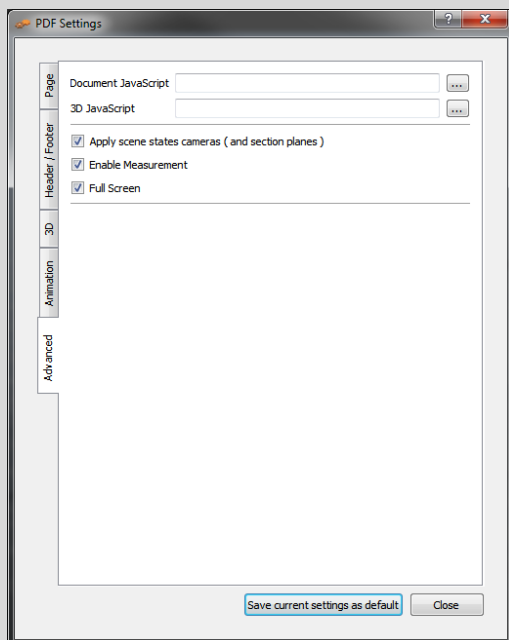
**Light Power Multiplier:** increasing this value increases the brightness of the generated 3D PDF file.

**Automatic Camera:** This option enables automatic switching between the different cameras in the scene. When automatic camera is enabled, the user can select the **Camera Pause Duration**, which is the time in seconds for which the camera will stand still before camera effect starts.

The user can select the **camera effect** to be **zoom, roll** or the two combined. The camera effect will take place for the **camera effect duration**.

**Background** option controls the appearance of the 3D area. The user has the option to set the background to either a single color, or an image. If the user wishes the 3D area to use the same background used in the page settings, he can select the **Transparent** option.

## Advance settings



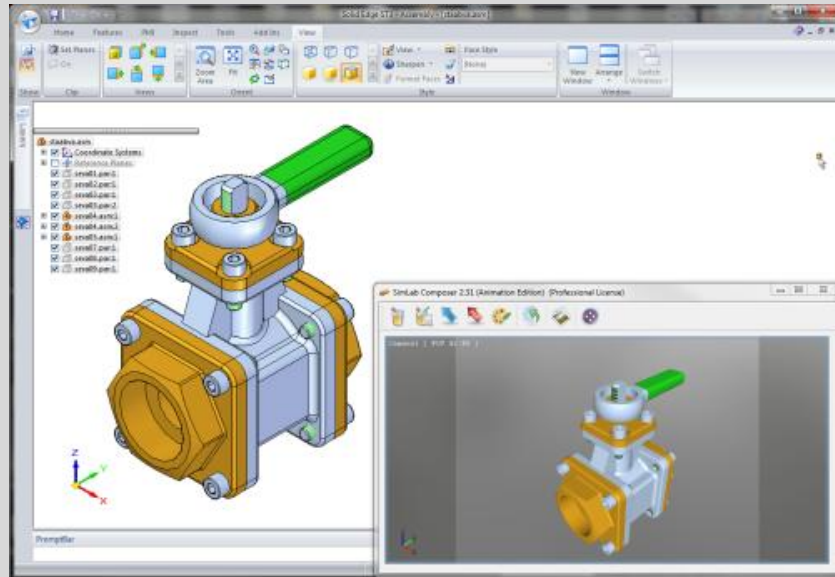
Advanced users can use those settings to insert Java scripts to control both, the PDF document, and the included 3D model.

Details about Java script support in 3D PDF files can be found at <http://www.adobe.com/devnet/acrobat/javascript.html>

Using advanced settings the user can Enable/Disable measurements in the generated 3D PDF file. And make the 3D PDF file start in Full screen mode if needed.

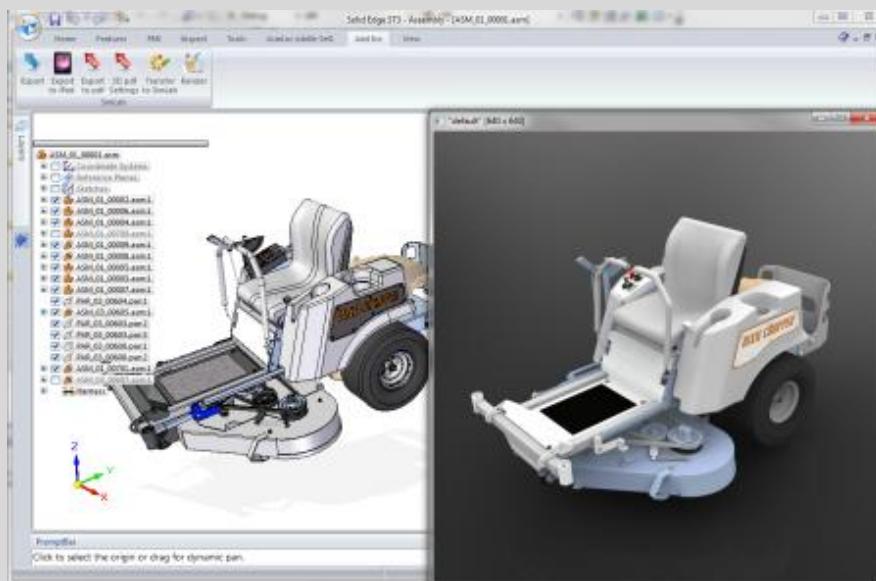
## Transferring to SimLab Composer

Transfer to SimLab button will transfer the model into a compact version of SimLab Composer. SimLab Composer uses perspective cameras, so the user will have to set the camera to perspective before transferring to SimLab Composer, to get the same view in SolidEdge.



## Rendering

The render function will create a photo realistic rendered image for the model. The camera has to be set to perspective as rendering does not support parallel cameras. To change the size of the rendered image, transfer the model to SimLab Composer then click Render Settings, and input the new image size.



## Animation

Transferring the model to SimLab Composer enables the user to create animation for the SolidEdge assemblies and parts. SimLab Composer supports the following types of animation:

- 1- Key frame (transform)
- 2- Camera
- 3- Material
- 4- Light
- 5- Path following
- 6- Round table

## Tessellating in SimLab Composer

In addition to reading SolidEdge files directly, the plugin gives the user the ability to transfer models to SimLab Composer using the STEP file format, by clicking the button **tessellate in SimLab Composer** in the toolbar.

Using the STEP file format provides the user with an alternative route for transferring data to SimLab Composer to handle the few cases of missing geometries when exporting. It also gives the user the ability to select the tessellation factor to be used to generate smooth models for rendering, or low polygon models for creating 3D PDF files.