Date:	2018-02-23
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Release No.:	CarMaker 3.5.x – 7.x

How to integrate my own 3D model in CarMaker for visualization?

CarMaker by default comes with many 3D graphic models of vehicles, animals, people, different amenities of Infrastructure likes buildings and tress etc. for enhancing the visualization. But it is also possible to integrate a 3D model from the user directly and visualize it in IPGMovie. Let us look at an example, to integrate a user 3D model for the test vehicle.

1. Supported 3D models

CarMaker supports different types of 3D models namely:

1. OBJ (Wavefront obj)
2. MOBJ – IPG proprietary
3. DAE – Collada
4. KMZ – Sketchup Warehouse

If the user model is any of the above mentioned 3D model formats, then this can be integrated in CarMaker.

2. Integrate 3D model

Typically, a 3D model from a different source needs to be adjusted or resized to fit into the CarMaker world. There are simple ways in CarMaker to do this resizing, let's have a look at it stepwise

- In this example, I have a ".dae" file which is basically a collada file format. As seen in the figure, this file can be placed in the Movie folder of your project directory and directly called as the 3D movie geometry model from the vehicle data set editor.

  As seen in the figure, the 3D model is aligned differently and the scaling for the object has to be adapted.

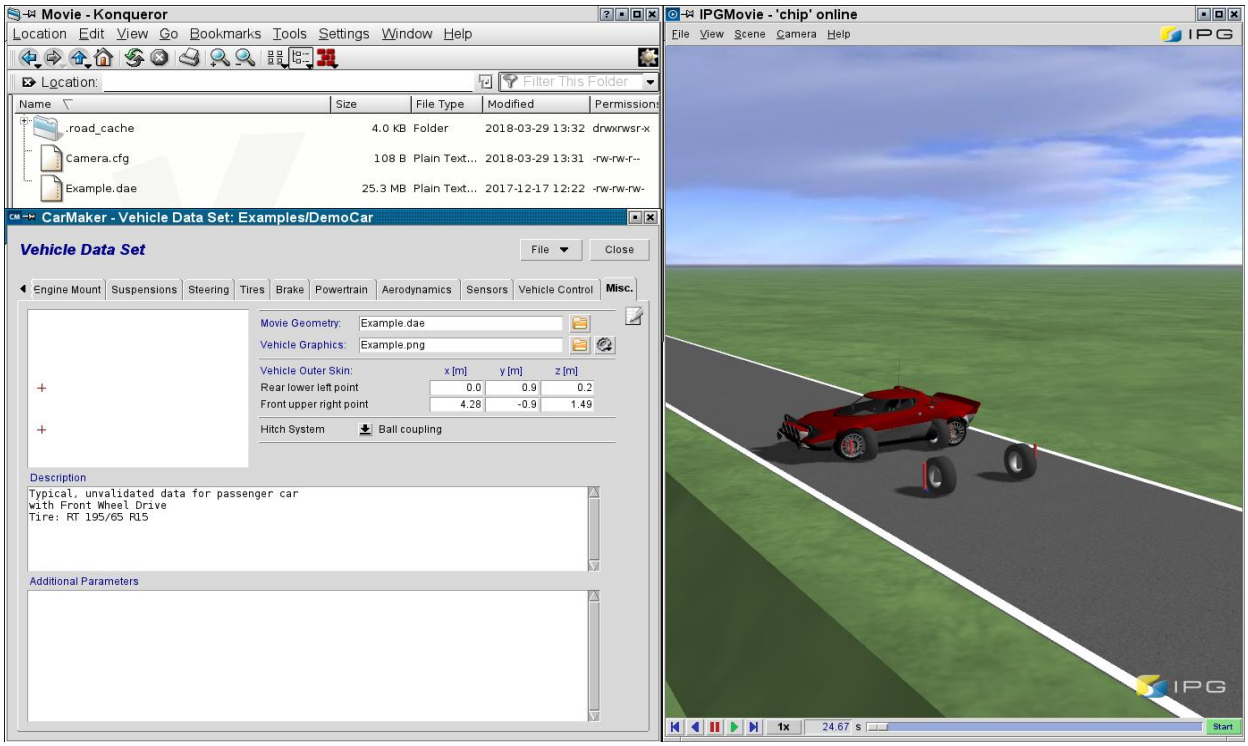

Figure 1 Integrate a 3D model without adaptation or scaling

- Firstly, the “dae” file can be integrated to an “.obj” format, this can be easily done by just creating a new text file with the file extension .obj (for eg: “Mycar.obj”) preferably inside the Movie folder of your project directory.

- In the newly created “.obj” file add the following entry:

```
1: ### BEGIN IPG-MOVIE-INFO
2: # Include Example.dae
3: ### END IPG-MOVIE-INFO
```

With Line 1 and Line 3 we create space for IPGMovie specific information. Between these two lines additional movie commands can be added but all the commands then need to have ‘#’ as a prefix. As seen above, in Line 2 we simply add the “.dae” model with its absolute name and extension.

- As a second step we need to fit it in our environment. There are certain commands that can be used to resize/rescale namely

  - *Translate* – Translate of the 3D model in x,y and z
  - *Rotate* – Rotate the 3D model in x y and z
  - *Scale* – To rescale or rescale the 3D model in x y z

  These 3 parameters can be used to fit the model into the CarMaker visualization.
  Description for these and also other additional commands can be found in the IPGMovie manual.

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```
1:  ### BEGIN IPG-MOVIE-INFO
2:  # Scale 1.15 1.1 1.1
3:  # Translate 1.95 0 0
4:  # Rotate 90 0 0 1
5:  # Include Example.dae
6:  ### END IPG-MOVIE-INFO
```

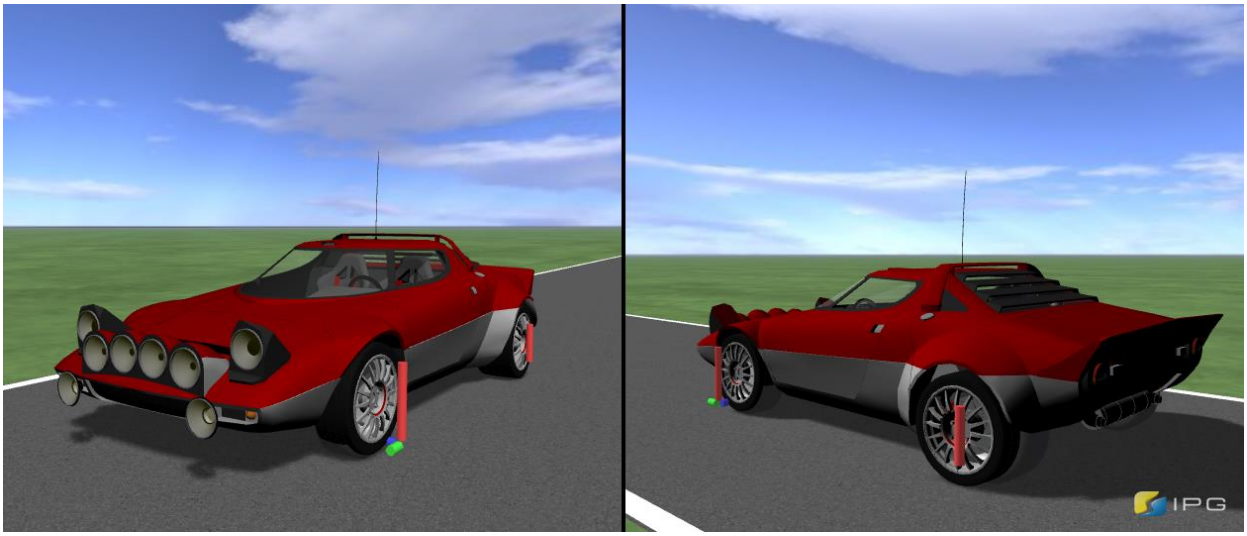

Figure 2 Integrated 3D model after adaptation

- Save your new obj file “Mycar.obj” and this can be then selected further from the Vehicle DataSet editor.

  This is the procedure on how one can add a “.dae” model into CarMaker. Alternatively, if the 3D model is of “.obj” format one can simply add only the scale, translate and rotate commands between the BEGIN and END directly in the obj file.