

erkangencol@gmail.com

# From Solidworks to Sketchup 0.1

An alternative approach with optimization\*

Erkan Gencol – erkangencol@gmail.com

2/7/2013

\* Partially based on the Tree[d] SketchUp Tutorial by Wyatt Thompson

# Process for importing geometries with complex surfaces from Solidworks to SketchUp

## List of Software used:

AutoCad

[FBX Converter](#)

SketchUp (Free or Pro Version)- Used Plugins: [OBJ Importer](#) (TIG), [Component/Group Tools](#) (Matt666), [TT-Cleanup](#) (ThomThom), [Component Comparison](#) (ThomThom),

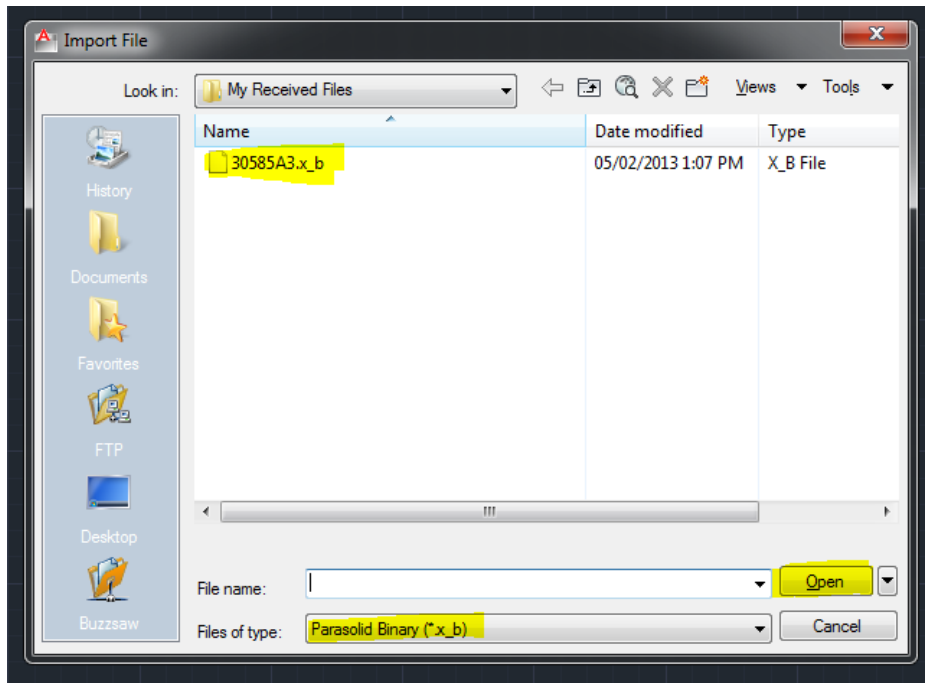
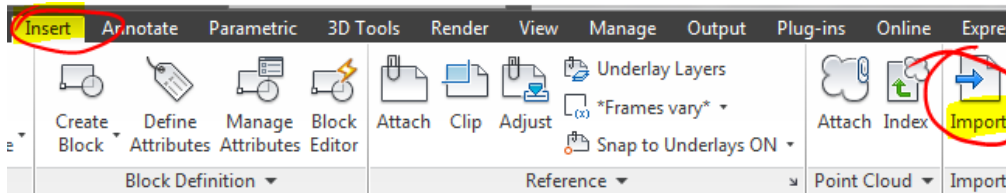
## Assumptions:

Have a licensed copy of AutoCad.

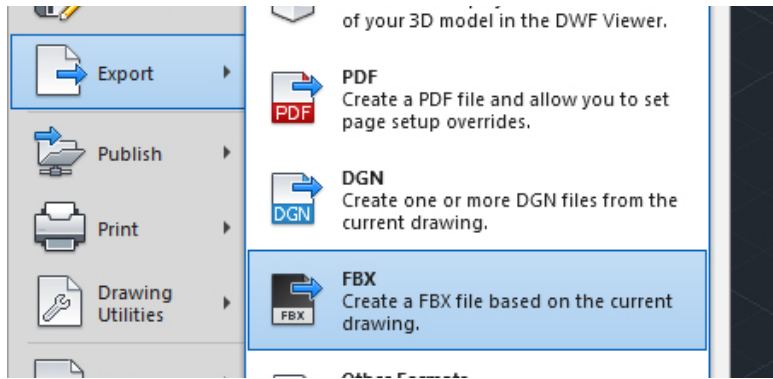
Geometry exported from Solidworks as Parasolid (text or binary)

## From Solidworks to FBX:

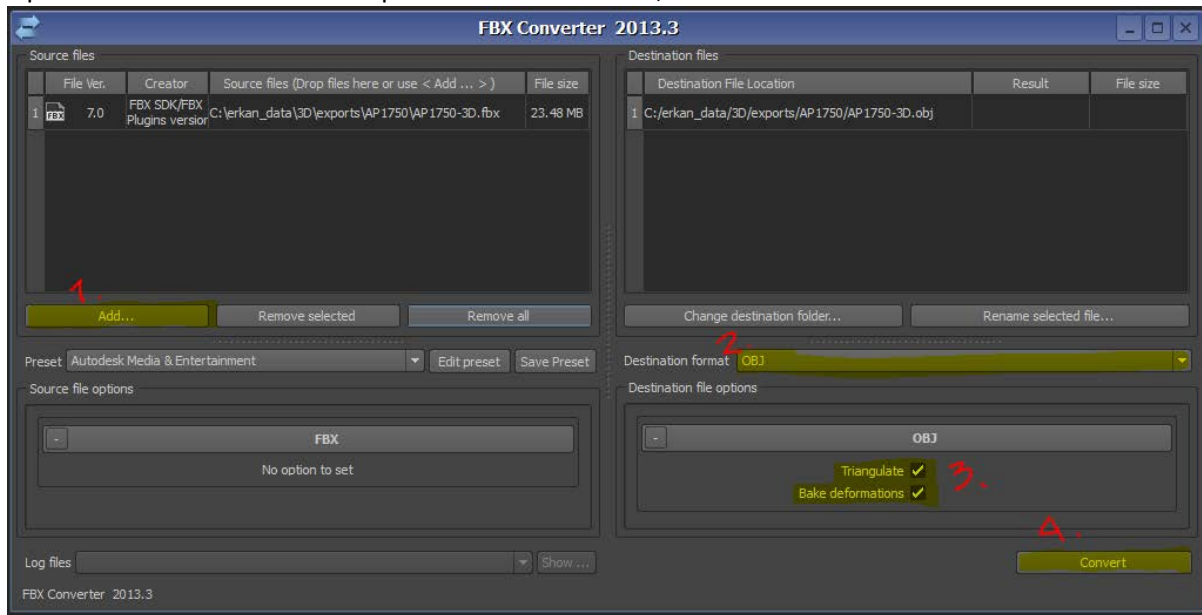
1. Import the Parasolid into ACAD (Menu: Insert/Import)



2. After Importing check the Units of the model in ACAD, this will come handy later. Also you might see the model is tilted in as axes are shifted. No worries, later on this will be handled by OBJ Importer.
3. Export from ACAD as FBX;

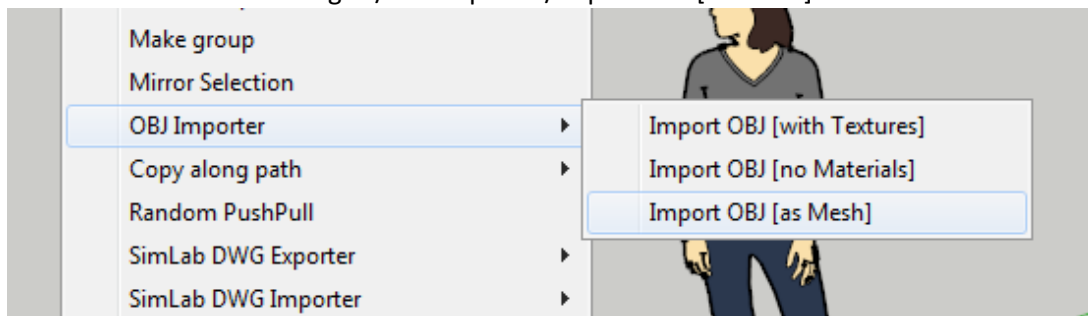


4. Open the FBX Converter and export the FBX file as OBJ;



Make sure **Triangulate** and **Bake Deformations** are selected to force converter creating proper triangulation for the geometry. Once it's done you have your OBJ ready to import SU.

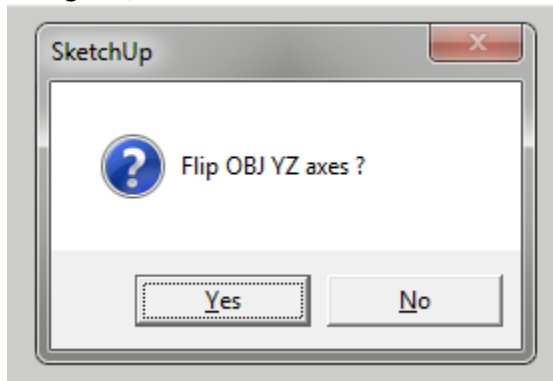
5. Switch to SU and select Plugins/OBJ Importer/Import OBJ [as Mesh]



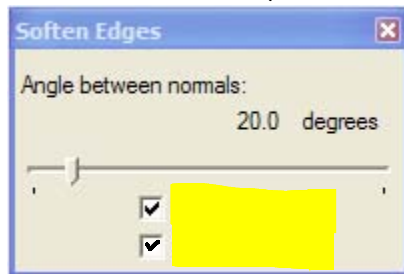
After you select the OBJ file created in the previous step, you'll be asked to pick the units for this model. So the info captured in Step 2 will become handy now. And on the lower left corner you'll see the number of lines processed even though it might become unresponsive give some time it to process it might take up to tens of minutes depending on the size of the model.

After this process is complete you should see the model on your screen and select if to Flip YZ axes with this

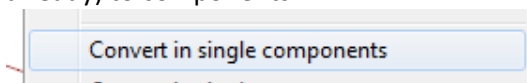
dialog box;



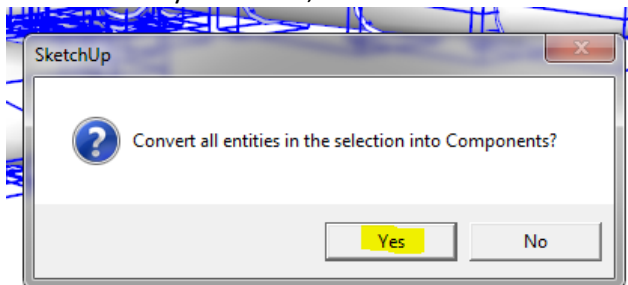
6. Next step is to [Soften the Edges](#) to have it displayed better until you have a good view without too many lines on where the curves are (rounded edges).



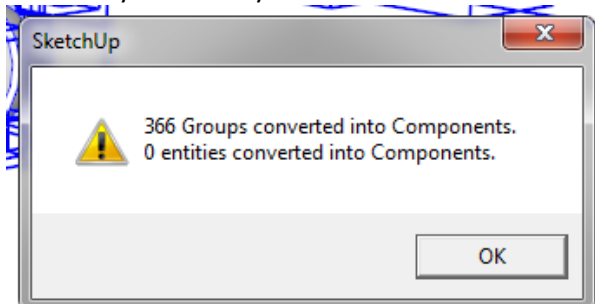
7. From now on we'll be optimizing the model to lower the polygon count of the whole model, at this point it's best to save a copy before moving forward. After saving select all and select Plugins/Convert in single components to have the groups (good thing about OBJ importer is that it converts loose geometry into groups already) to components.



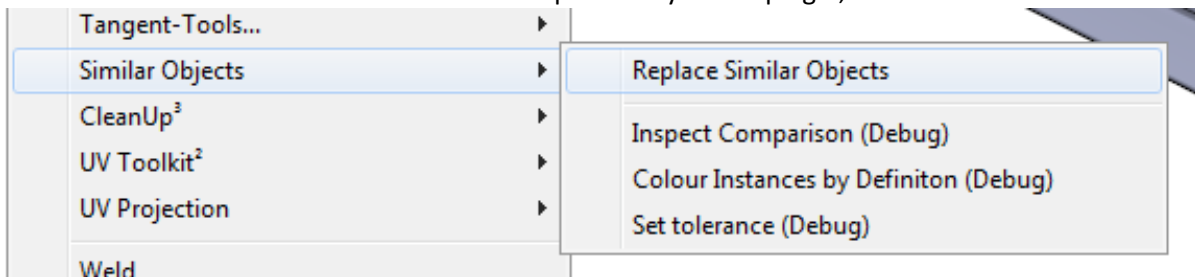
Then confirm your action;



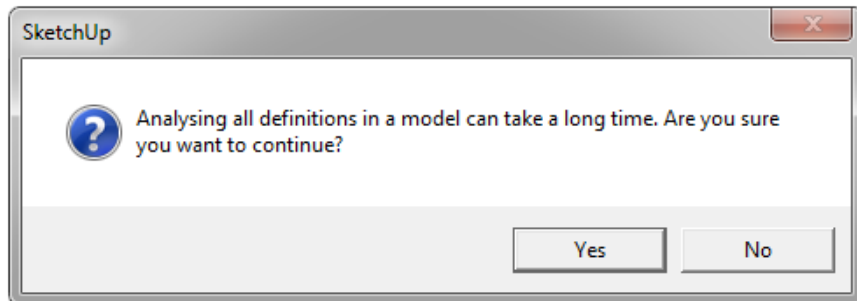
In return you'll have your confirmation



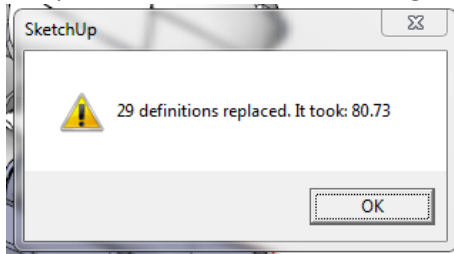
8. After you have them as components you'll need to find the similar components and have them converted to instances of the same one of course with the help of a very useful plugin;



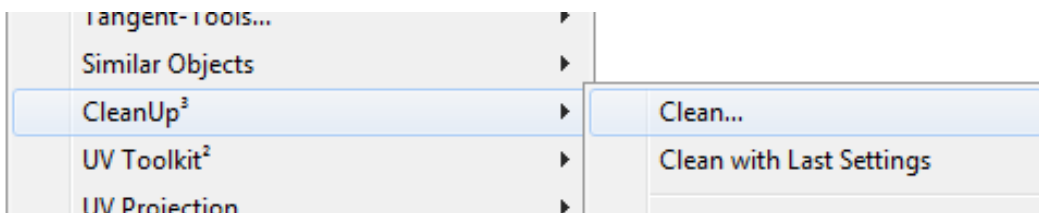
9. You'll again be informed about the implications of your heavy plugin use :)

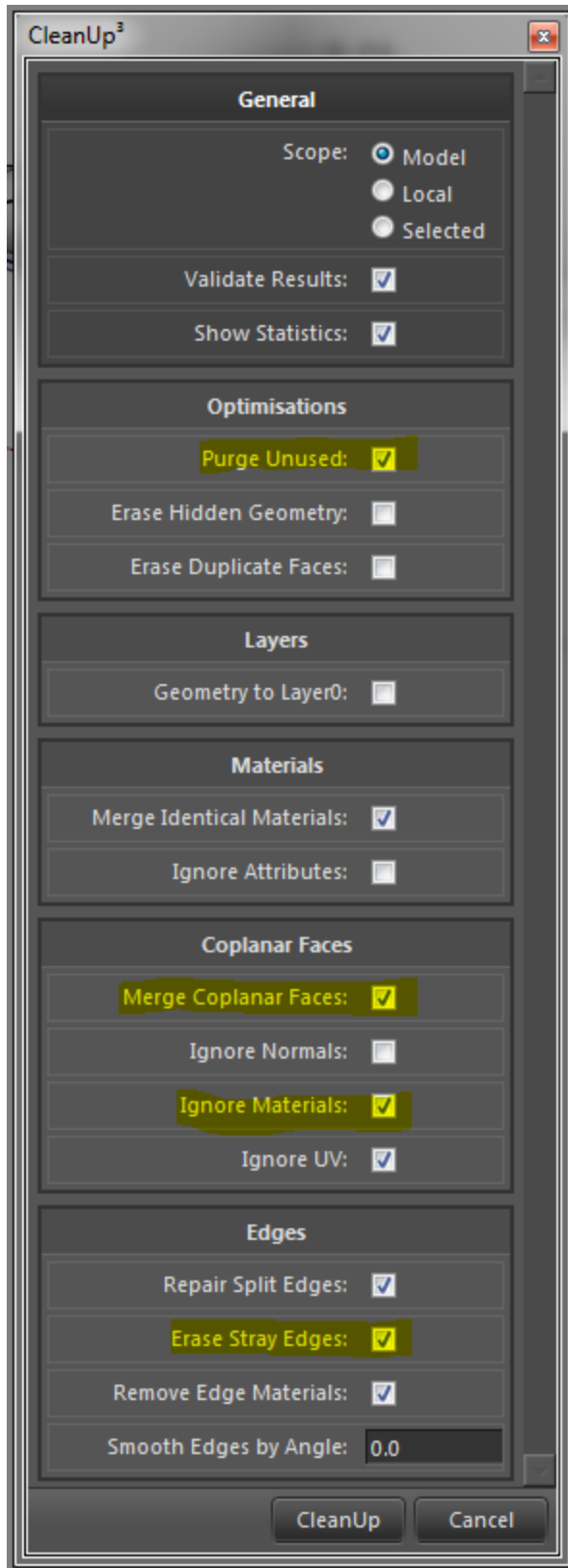


But you'll be rewarded with having similar looking components replaced as an instance of a single component:



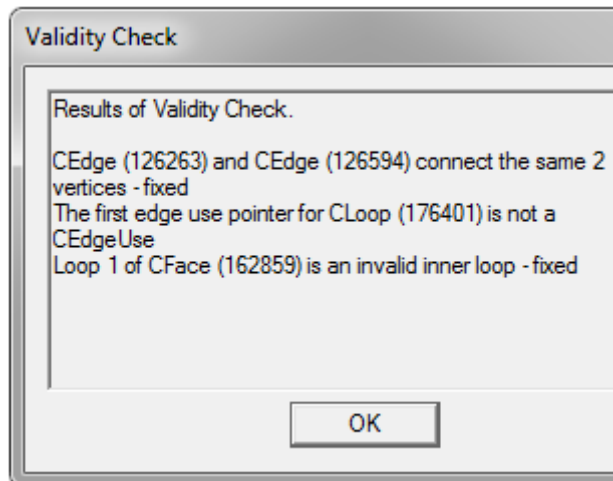
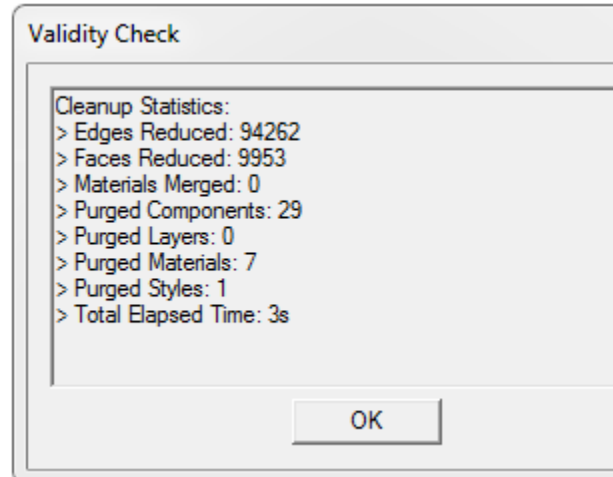
10. Now you are ready to clean your model as you have less polygons to deal with by selecting Plugins/CleanUp<sup>3</sup>/Clean by ThomThom which is a fantastic plugin as well.



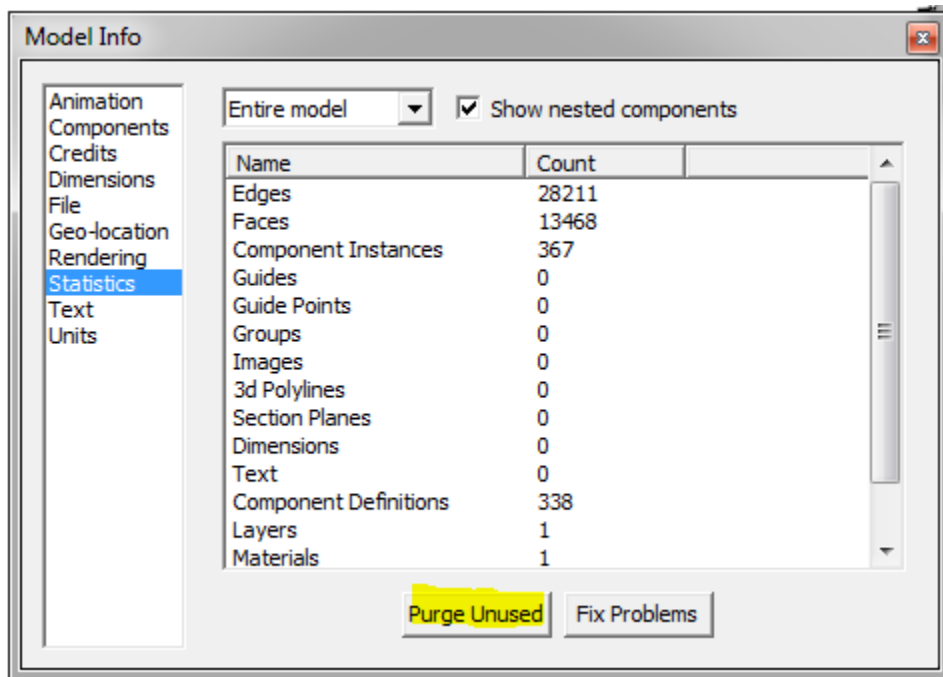


Here you'll find my set of options optimized for large models as **Erase Duplicate Faces** might take too much time and **Erase Hidden Geometry** sometimes results in lost faces where you want them to be. Experiment for the best options that work for you.

Once you hit CleanUp you'll have nice and clean progress information on the lower left status bar. And will be presented with some statistics and validity results if you've asked for it as me on the left.



11. Last step is to purge and deposit all the polygon savings to your file;



12. After purge I'd save the file to see my savings.