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## X-Plane OBJ Export Plug-in for 3dsMax

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### First things to know!

**ATTANTION!** If you use a version lower than Beta 0.4.3 You should convert attributes of objects to the new version Beta 0.4.3 and over. Make a backup of your work file. Select the objects and run the script from 3Ds max root\Scripts\StepToSky\STS\_XP9E\_Converter.ms

**NOTE:** If you are not a new user, check the change log.

**NOTE:** You can't use more than 1 manipulator per 1 object.

**NOTE:** Only standard materials supported!

**NOTE:** A lot of settings, including manipulators, work according to the manual on X-Plane obj8.

**NOTE:** The plug-in creates the log file which can help to fix problems. The log is located in the same directory as your 3ds max file, otherwise on C:\. We have the right to change the folder name, file name and the directory to save to!

## The concept.

The first stage is modeling and animation. It's important to control the IK chain and the pivot, this is the weak side of the plug-in. It's difficult to set the IK chain properly.

Second stage – the script writes different kinds of information into the object properties, i.e. keys properties, blending attributes, light sources attributes etc.

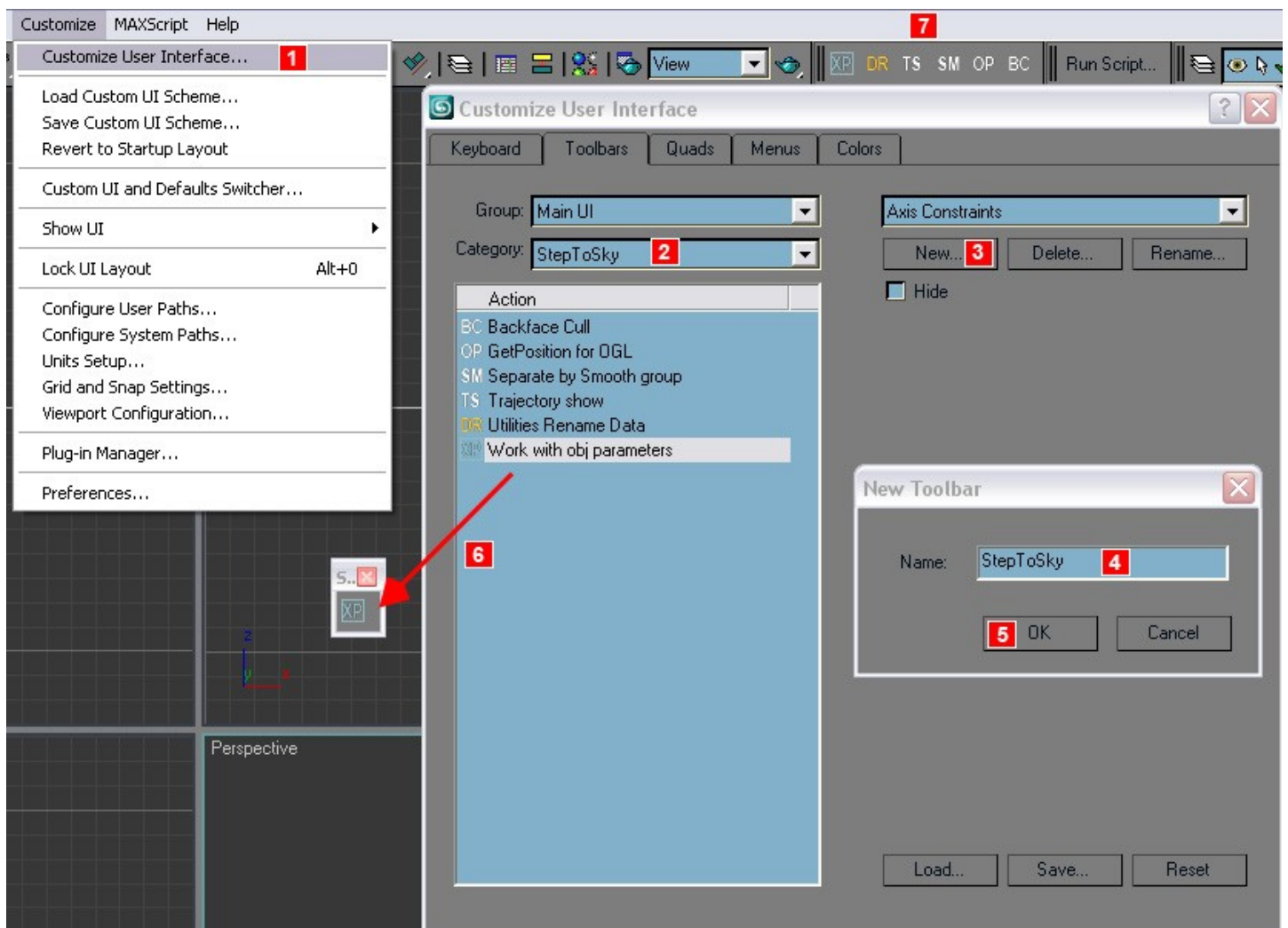
Third stage – select the object for export and select export selected, otherwise all scene objects are exported. The export plug-in processes the objects and writes the information based on that in the object properties. Notice, all the hierarchic chain is exported, started with the main selected object. This means, If you have a an object with children selected, the children will be exported as well regardless if they are selected or not.

Recommendation.: Look through the X-Plane 9 (obj8) format for correct hierarchy in 3ds max. Without this you might end up with a poorly optimized .obj file

<http://scenery.x-plane.com/library.php?doc=obj8spec.php>  
[http://scenery.x-plane.com/library.php?doc=about\\_obj8.php](http://scenery.x-plane.com/library.php?doc=about_obj8.php)

## UI Settings.

Creating a toolbar. See the picture.



## Main export window and activation.

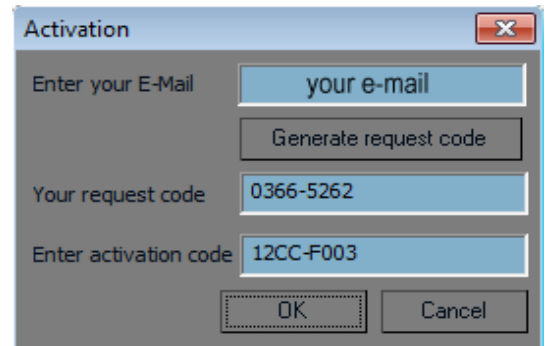
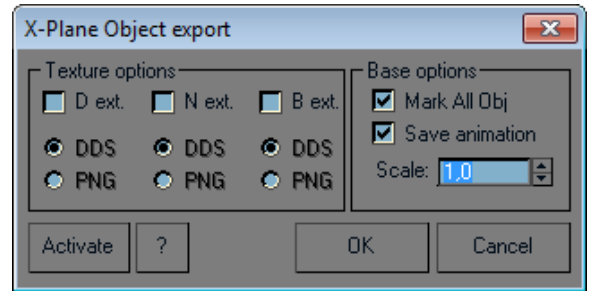
- D ext.** - Rewrites the diffuse texture extension
- N ext.** - Rewrites the Self-Illum texture extension
- B ext.** - Rewrites the Bump texture extension.

For example, you have a texture.psd in your diffuse slot. If you check **D ext** you can choose between dds or png extension when exporting. This function doesn't change the name of the texture in the material editor. If you are used to working with psd (Photoshop) files in 3ds max this function saves you from replacing textures in the material when exporting.

- Mark All Obj** - If unchecked the names of the objects in the TRIS field are not written into the obj. objects if there's no Mark attribute in the object properties, which is set by the script. (Example TRIS 0 12 ##Box01)
- Save animation** - should be checked if you want to save your animation. If you don't have any animation – uncheck it.
- Scale** - obj8 format value in meters. If you have units different from meters in 3ds max, this parameter can set the scale of the objects relatively to metric system. For example: If you have sm system unit then you should put 0,01 (1/100 in a meters 100sm).
- ?** - Shows information about the plug-in.

**Activate** - Shows the window (to the left) where you can enter your activation code.

**Enter your E-Mail** - Enter your e-mail which you have registered on [www.steptosky.com](http://www.steptosky.com) Then press **Generate request code**. Send us the request code and we will send you activation code which you put in **Enter activation code** field.



## Script For Adjustment Objects.

### General rollout

**Rollout Adjustment** – Opens the window where you can check the boxes to create additional rollouts for the attributes to work with.

**Clear Obj** – Cleans the object of any information written by the script.

**Set** – Puts setting into an object.

**Get** - Gets information from the object (needed rollout opened automatically).

**NOTE: works with the one selected object only.**

**No Selected object** – Information about selected object is in this field.

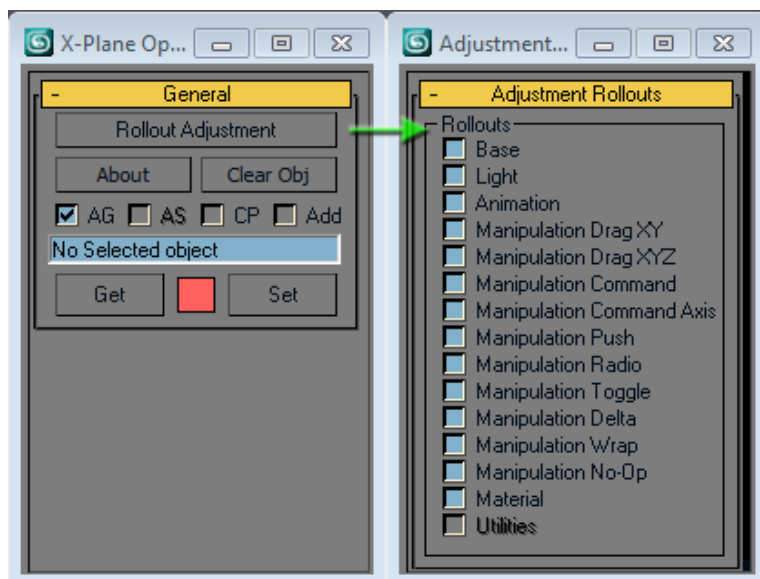
**Red rectangle** – Turns red if no objects selected, green – 1 object selected, blue – more than 1 object selected.

**AG – (Auto Get)** Automatically gets information from the objects when the selection is changed.

**AS – (Auto Set)** Does not function

**CP – (Convert to editable poly)** No need now.

**Add** – If checked when you press Set the information written earlier is not deleted and the new info is added from the opened rollouts. If unchecked all information is replaced with new one. It's useful when you want to write 1 parameter to many objects without deleting the previously written information. Such as Mark.



## Base rollout

**NoSunLight** – Objects do not react to the sun light (trees).

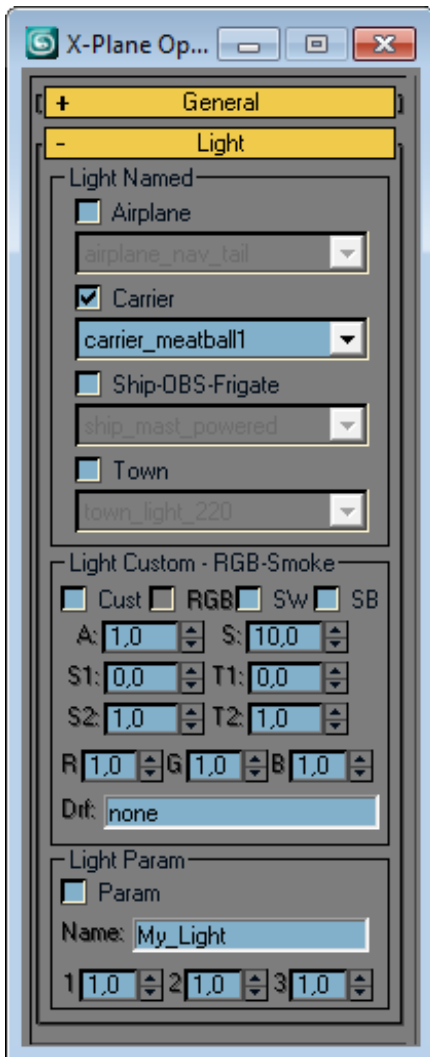
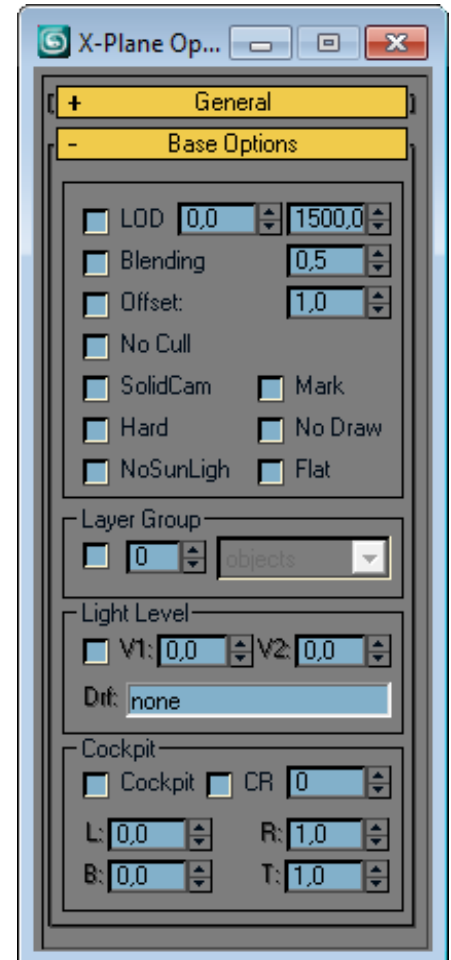
**Mark** – Writes object name to the obj file regardless to the **Mark All Obj** check-box in the main export window.

**CR (Cockpit region)** – one region output is supported only for now.

All the other attributes work according to the obj format manual.

<http://scenery.x-plane.com/library.php?doc=obj8spec.php>

[http://scenery.x-plane.com/library.php?doc=about\\_obj8.php](http://scenery.x-plane.com/library.php?doc=about_obj8.php)



## Light rollout

**NOTE:** 1 type for 1 light source. The parameters of this rollout are given to the light objects only!

**Cust** - (Custom Light) Light source customized by the user.

**RGB** - Not supported.

**SW** - White smoke.

**SB** - Black smoke

All the other attributes work according to the obj format manual.

<http://scenery.x-plane.com/library.php?doc=obj8spec.php>

[http://scenery.x-plane.com/library.php?doc=about\\_obj8.php](http://scenery.x-plane.com/library.php?doc=about_obj8.php)

## Animation rollout

**Enable** - Activate animation output.

**V (value)** - Values input.

**drf (dateref)** - Field for dateref input.

**R (reverse)** - Reverse animation at export.

**RV (reverse value)** - Reversed sequence for keys values.

**UK (update keys)** - Manual synchronization and update of keys and values.

**Calc.Drf (calculate datsref)** - Dateref keys/values calculator. Example - landing gear.

**Loop** - Loop animation (look at obj manual).

**Hide/Show** - Activates animation output.

**+Add** - Add animation.

**-Del (delete)** - Delete animation.

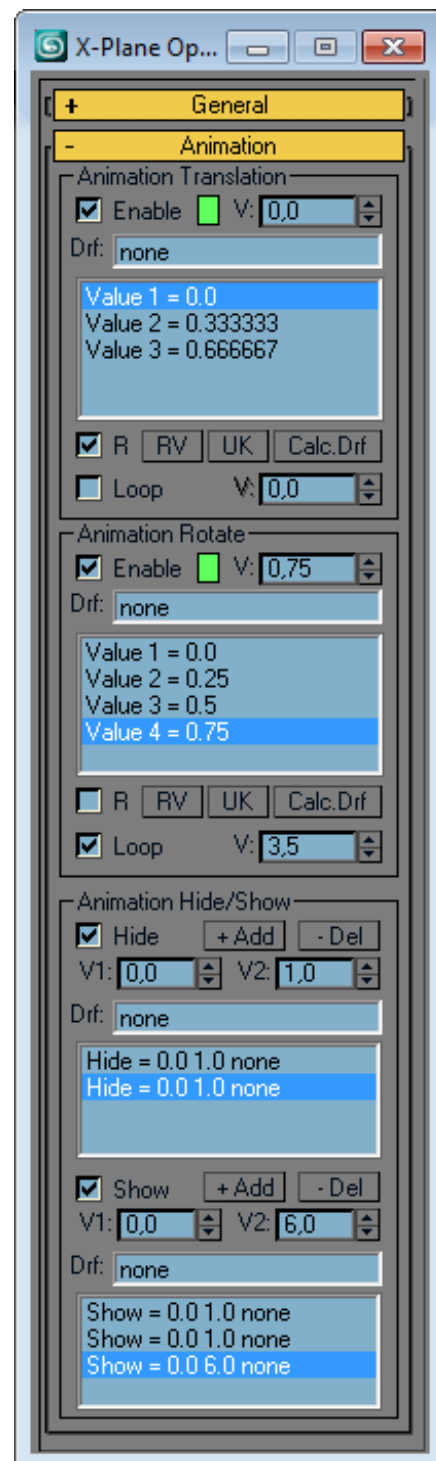
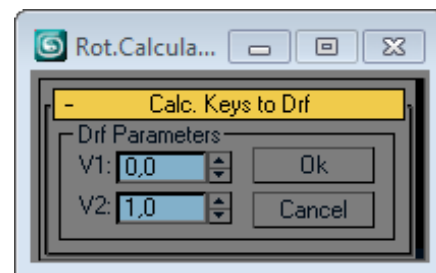
**V1/V2 (values)** — Values.

**NOTE: 1 object can have all these animation simultaneously.**

All the other attributes work according to the obj format manual.

<http://scenery.x-plane.com/library.php?doc=obj8spec.php>

[http://scenery.x-plane.com/library.php?doc=about\\_obj8.php](http://scenery.x-plane.com/library.php?doc=about_obj8.php)



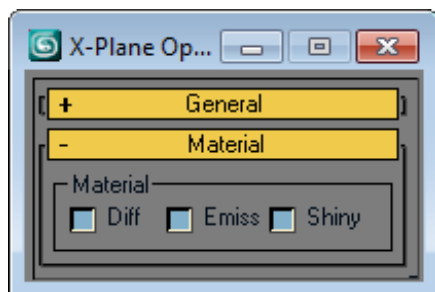
## Material rollout

**NOTE: Standard material is supported only!**

**Diff** - Diffuse material color output.

**Emiss** - Self-Illumination material color output.

**Shiny** - Specular Level material divided by 100 output. If you have 500 in the material you will get 5 in the obj file.





## Warning messages.

- x **Please don't change any parameters Export may work incorrect!** - You are trying to change the object properties manually. The export might go wrong.
- x **Can't save! Different POSITION keys count ! Animation will be incorrect Please fix this before set-** The number of animation keys is different from those being written into the object, i.e. from the list which you can see in the script. Press **UK**, check the properties and repeat the action.
- x **Animation Hide/Show didn't save! This need the geometry objects** - Animation for hide and show can be written for geometry objects only.
- x **Different position keys count! Auto repair + Add keys!**
- x **Different position keys count! Auto repair - Delete keys!** - The number of keys in the object properties is incorrect. The keys are added or deleted from the list automatically. The key reads like 0.000000 and is added to the tail. The keys are also deleted from the tail of the list.

## Animation Concept.

It is assumed that you are familiar with animation in 3ds max, notions of hierarchy and direct/inverse kinematic. The plug-in supports 3-axis rotation, but the results of such animation is hardly predictable. It is recommended to use only one axis for rotation, i.e. define a plane for an object to rotate. To define a rotation vector use a point-help linked to an object. This point object sets a coordinate system for a linked object. Also watch the animation controllers properties and the controllers themselves. The properties of animation are being taken from the controller keys. Use EulerXYZ controller for rotation, and position XYZ for move.

## Support attributes.

### Base

- ✓ Lod's /values
- ✓ Cull yes/no
- ✓ Blend yes/no/values
- ✓ Solid camera yes/no
- ✓ Drowing enable/disable
- ✓ Cockpit yes/no
- ✓ Cockpit region /region/values
- ✓ Light level /values/dateref
- ✓ Layer Group /values/types
- ✓ Sunlight Off (for trees) yes/no
- ✓ Mark object in obj file yes/no
- ✓ Shade/flat
- ✓ Hard yes/no
- ✓ Offset (Poly\_os) /values
- ✓ Scale scene /values

### Animation

- ✓ Hide/Show
- ✓ Translate (3Dsmax keys)
- ✓ Rotate (3Dsmax keys)
- ✓ Hierarchy
- ✓ Revers animation
- ✓ Revers key values
- ✓ Loop
- ✓ Calculator values of keys

## ***Material***

- ✓ Diffuse
- ✓ Shiny
- ✓ Emission

## ***Textures***

- ✓ Texture /diffuse
- ✓ Texture\_lit /night
- ✓ Texture\_normal /specular&bump
- ✓ Auto-Replace extension /png/dds

## ***Manipulation***

- ✓ Drag XY
- ✓ Drag XYZ
- ✓ Command
- ✓ Command Axis
- ✓ Push
- ✓ Radio
- ✓ Toggle
- ✓ Delta
- ✓ Wrap
- ✓ No-Op

## ***Lights named***

- ✓ Airplane
- ✓ Carrier
- ✓ Ship
- ✓ OBS
- ✓ Frigate
- ✓ Town

## ***Lights custom***

- ✓ Custom
- ✓ Light param
  
- ✓ Smoke white
- ✓ Smoke black