C3d2obj Software

What is it?

Condor 2 is a gliding (soaring) simulator from UBSoft d.o.o. and is available from www.condorsoaring.com. The scenery landscape objects are provided in a proprietary .c3d format which cannot be read using modelling programs such as Blender or Wings3D which means they can't be modified. This program converts .c3d files into .obj and .mtl files that can be imported into these modelling programs. The Condor Team provide Object Editor that can read .obj files and convert them to .c3d.

A .c3d file is able to hold multiple scenery objects and so do the .obj and .mtl files output from this program. Since .obj and .mtl files are in ASCII it is possible to use a text editor to extract individual elements from these files.

The program

It was developed using Visual Studio Express 2012 because it's free and I already had it installed. It should load okay with later versions of Visual Studio but that hasn't been tested.

I know it's not the most elegant of programs but development was partly a learning exercise. I am sure it could be made more elegant, faster, use fewer resources etc but it works and does the job.

Why trust that it isn't going to do terrible things to your PC, after all it's on the internet? If I wanted to cause chaos I wouldn't write a program that so few people would be interested in. And if you are still unsure then download and examine the source code and build it yourself.

C3d File Format

In the obj file the v values are X Z Y (in the Blender coordinate system)

File Header

Name	Length (bits)	Type	Function
FileType	4	Int32	Fixed field set to 0x01443343
Unknown1	4	Byte swapped Int32	?
NbrObj	4	Byte swapped Int32	Number of objects in file
Unknown2	4	Byte swapped Int32	? Same as NbrObj
Unknown3	3	Bytes	Padding?

For each object in the file

Name	Length (bits)	Type	Function
objName	Variable	String	The name of the object
VertexStartIndex	32	Int32	Index into vertex list of next object
NbrVertices_x3	32	Int32	3 times the number of vertices
FaceStartIndex	32	Int32	Index into face list of next object
NbrFaces_x3	32	Int32	3 times the number of faces
textureName	Variable	String	The name and path to the texture file
ObjParam.Red	32	Single	The amount of Red (0 – 1.0)

ObjParam.Green	32	Single	The amount of Green (0 – 1.0)
ObjParam.Blue	32	Single	The amount of Blue (0 – 1.0)
ObjParam.Alpha	32	Single	The amount of Alpha (0 – 1.0)
ObjParam.Spec	32	Single	The amount of Specular (0 – 1.0)
ObjParam.Shiny	32	Single	The amount of Shininess
ObjParam.Env	32	Single	The amount of Env (0 – 1.0)

Total number of vertices

Name	Length (bits)	Type	Function
TotalNbrVertices	4	Int32	Total number of vertices for all objects in file

For each vertex

Name	Length (bits)	Type	Function
Y	4	Single	Geometry Y coordinate
X	4	Single	Geometry X coordinate (need to take negative)
Z	4	Single	Geometry Z coordinate
nY	4	Single	Normal Y coordinate
nX	4	Single	Normal X coordinate
nZ	4	Single	Normal Z coordinate
U	4	Single	Texture U coordinate
V	4	Single	Texture V coordinate (need to take 1 – this value)

Total number of faces

Name	Length (bits)	Type	Function
nbrFaces	4	Int32	Total number of vertices used to make faces. i.e. 3 times the number of faces for all objects in file

For each face

Name	Length (bits)	Type	Function
A	4	Int32	Index into vertex list of one vertex in this face
B	4	Int32	Index into vertex list of one vertex in this face
C	4	Int32	Index into vertex list of one vertex in this face