PleoRB_Rig_PrbDK

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PleoRB_Rig_PrbDK.max

INTRODUCTION

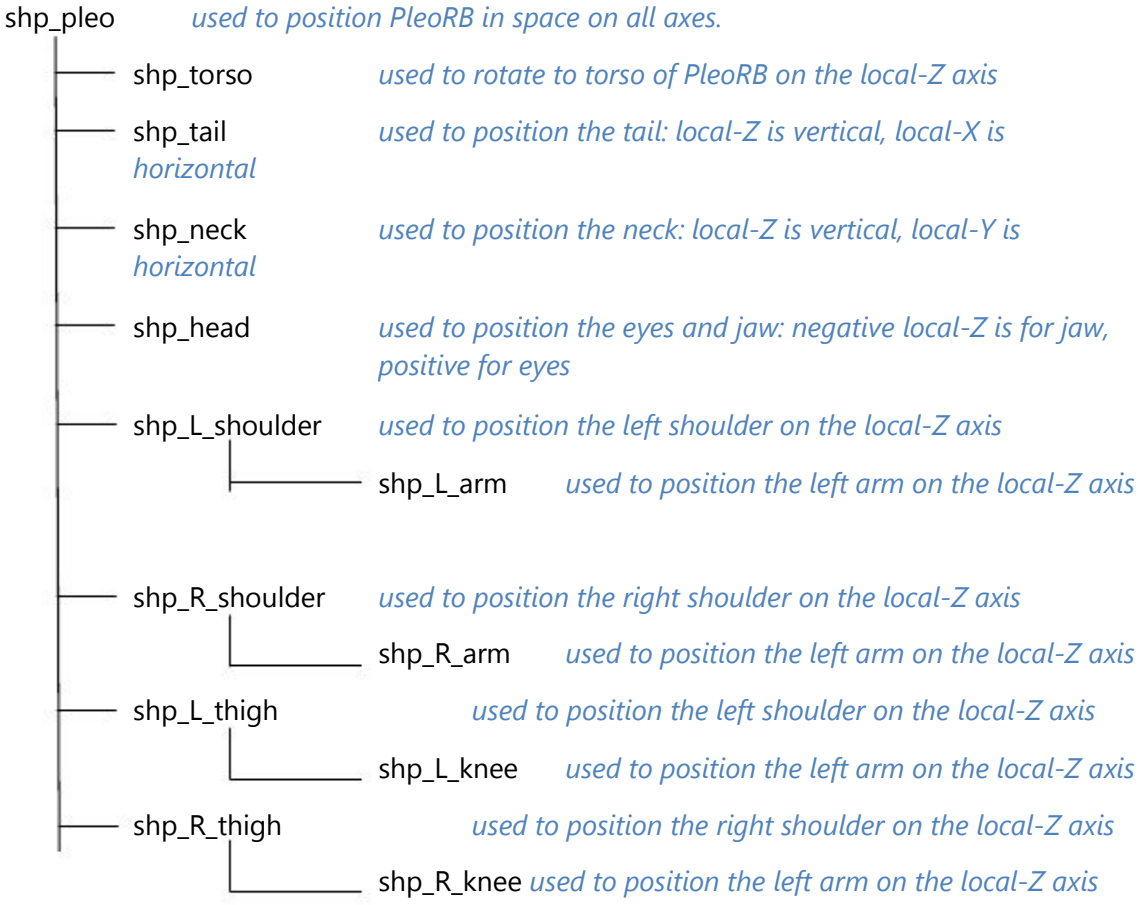
The PleoRB_Rig_PrbDK.max file is a MAX 2008 FK rig that can be used to animate and export motion files for PleoRB. The rig was designed to be as simple to use as possible. However, we assume that the person using this rig is familiar with the MAX interface, curve editor and dope sheet, and has experience animating.

The rig is build around standard MAX bones in a simple hierarchy. The rig uses control shapes (shp_*) to animate the bones which deform the model of PleoRB. These control shapes were designed to be animated by rotating about their local axis coordinate system. Positive angle designations in the rig are up and right, making down and left negative directions.

Rig STRUCTURE

The bone structure is controlled using control shapes. These shapes follow the naming convention of “shp_*”. These control shapes each have limit controls set on their local axes to only allow valid positioning of PleoRB within the design limits of the physical unit. For example, PleoRB’s torso can only physically rotate about one axis, which on the rig is the local-Z. Limit controllers have been added to not only allow the correct axis of rotation, but also the correct limit to the rotation.

The following is an outline of the shape controllers and what they are used for.



Exporting Motions

There are four scripts that you will need to run to export animated motion from the rig. It is recommended that you place these files - InnvoLabs.ms, Servo.ms, PleoServos.ms and PleoSounds.ms - in your <3dsMax Install>/Scripts/Startup directory so they load automatically, where <3dsMax Install> is <Program Files>\Autodesk\3ds Max 200<x> by default. Once an animation has been created, it needs to be exported using the export scripts. In the Utilities Panel, click on the MAXScript button, and choose INNVOLABS Utilities from the list. Here, you will have the options to export your motion as a CSV or UMF file, and have the ability to export to any frame rate you would like. It is recommended that you start at a frame rate of 30 to begin with: You will get the best performance and speed when using this frame rate.

Helpful Hints

1. DO NOT change the name of the dummy object “Main_Control”. It is used to collect all joint information from the rig. It is recommended you do not change the names of the control objects and bones.
2. When animating the head (eye and jaw), there seems to be a dead-spot on the physical unit which affects the eyes. When rotating the shp_head object forward to close the eye, it will take 30-degrees of rotation to actually begin to rotate the eye. This has been reflected in the rig, so that the visual position of the eye on the rig will closely match the physical unit.
3. There are “speed limits” when animating the rig! For example, if you try to move a joint too fast, the physical PleoRB unit may not be able to get to the desired angle as fast as you specified. When played back, it may look like the physical unit did not play back the motion correctly. It will take some experience to find those limits and accurately animate the rig to show well on the unit.
   Likewise, there is a lower speed limit where a joint is moved too slowly for the unit to see it is supposed to be moving. In this case, the motion may appear to be either very jerky, or the joint may not move for a while, and then jump to a position.
4. Sounds are “animated” by animating the SD attribute of the MAIN_CONTROL dummy object. The sounds that the SD attribute will call are added to the PleoSounds.ms script in a sound table. There is an example shown in the PleoSounds.ms script to look at.
5. When exporting a CSV file, the .csv extension is NOT automatically added. The extension should be added by the user when exporting.

To add a sound, look at the integer value for the desired sound in the script. For example, if sound 2 is “honk”, and you want PleoRB to honk at frame 30, set a key at frame 30 for SD that is “0”. Go to frame 31 and set a key of “2” (for the honk sound). Finally, go to frame 32 and set another “0” key.

Document Revision History

Revision	Date	Comment
0.1	June 12, 2008	Formatting and template revisions
0.2	June 20, 2008	Cleanup and corrections