



GCS3® VIRTUAL CINEMATOGRAPHY SYSTEM HARDWARE AND MAYA PLUG-IN MANUAL

Manual Version 1.2

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The GCS3 device, system and method of use are protected by the United States Patent No. 7,403,220; Taiwanese Patent No. I-280786; Mexican Patent No. 274183; Chinese Patent Office Notice of Allowance on Patent Application No. 200580028664.8 (PCT/US2005/024439); and patents pending in other countries.

CONTENTS

INTRODUCTION	1
GCS3 MAYA PLUG-IN INSTALLATION	2
GCS3 HARDWARE INSTALLATION	2
ADDING A GCS3 VIRTUAL CAMERA TO YOUR MAYA SCENE	4
RECORDING YOUR VIRTUAL CINEMATOGRAPHY	9
WORKFLOW	12
TROUBLESHOOTING	13
CUSTOMER SERVICE	14



INTRODUCTION

Congratulations on purchasing the GCS3 virtual cinematography system, a bundle incorporating Gamecaster's patented third-generation GCS3 virtual camera control hardware and a customized version of Craft Animations' Craft Camera Tools software. Together, they eliminate the labor-intensive process of manually keyframing the movements of virtual cameras in animated scenes.

Instead of keyframing, the GCS3 virtual cinematography system lets you layout animated scenes the same way you would shoot live action -- by looking through a camera viewfinder and panning, tilting, rolling, dollying and zooming in real-time with real-life camera controls. The GCS3 plug-in for Autodesk® Maya® (3ds Max® and Softimage® versions available) instantly memorizes the GCS3 hardware's physical movements and automatically keyframes those movements while you film your animated scene.

Not only is the GCS3 virtual cinematography system capable of saving animation studios time and money during the camera layout process, it offers numerous creative benefits as well, all of which are powerful incentives for the entire animation community, particularly directors and animators, who can now work as real-time collaborators in a way that was previously impossible.

"GCS3 puts added creative control in our hands by enabling us to produce authentic feeling handheld camera shots for cinematics more easily and quickly than with traditional keyframing."

- Greg Mitchell, Cinematics Director, Epic Games

"The GCS3 is a huge step beyond camera keyframing, especially with respect to complex camera movements. In fact, we can afford to experiment with alternative takes because the results are so immediate."

- George Elliott, President, Elliott Animation

"The GCS3 hardware has a very professional feel to it that is solid and reliable, the control scheme is very intuitive, and the ability to record a camera move in Maya is such a huge positive..."

- Justin Denton, Previs Supervisor, Halon Entertainment

GCS3 MAYA PLUG-IN INSTALLATION

1. Install the **Craft Director Studio** software on your computer, which can be downloaded for free at the following URL:

<http://www.craftanimations.com/products/craft-director-studio/download>

2. Install the **Gamecaster GCS3 PRC** software on your computer.

3. In Maya, start the **Craft Director Studio** (see the section below, **ADDING A GCS3 VIRTUAL CAMERA TO YOUR MAYA SCENE**, steps 1-2).

4. On the **Craft Director Studio window**, go to "Main" > "License Manager" > "Import license file" (located in the upper right).

5. Navigate to, and select the supplied License File, then click "Open".

GCS3 HARDWARE INSTALLATION

1. Secure your **GCS3 body** and **hand controllers** to the optional Redrock® microShoulderMount® modular support system, then connect the GCS3 hand controllers to the GCS3 body:



Note: We recommend sliding the GCS3 hardware's LCD **leftward** for a comfortable viewing experience (see knob on back of LCD).

2. Your GCS3 hardware is a USB plug-and-play computer peripheral. Connect one end of the provided **composite Power/USB/DVI cable** to your GCS3 hardware's **Power, USB** and **DVI** inputs:



3. Connect the other end of the **composite cable** to the provided **power adapter**, and to your computer's **USB input** and **DVI output**.

4. Turn on your GCS3 hardware by pressing **leftward** on the **power button**:



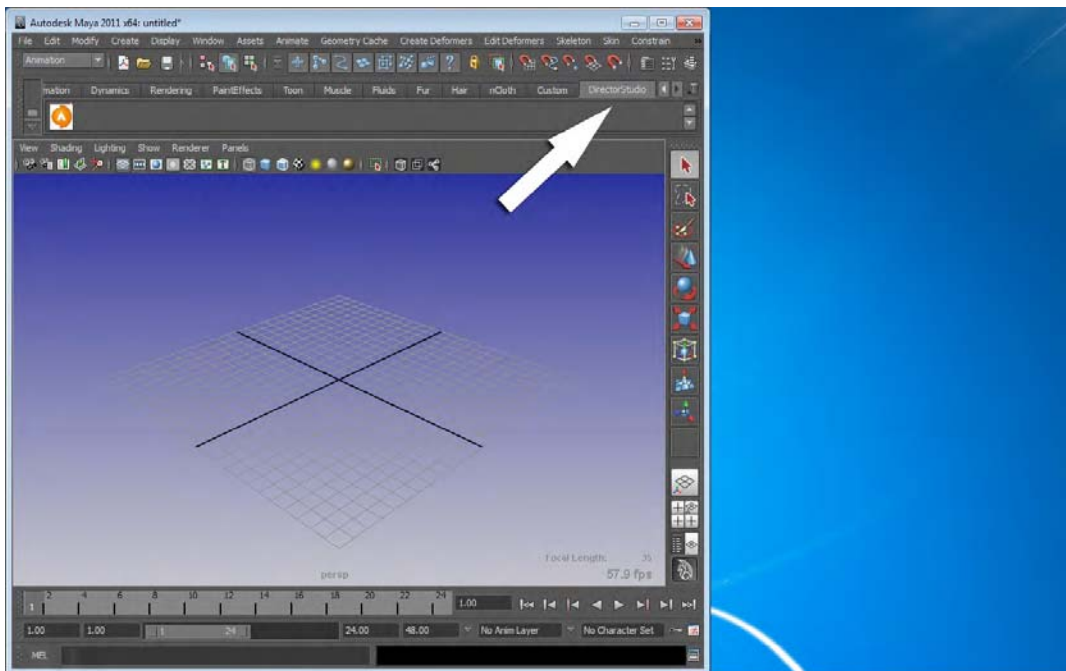
Note: Your computer will make a sound indicating it has discovered your GCS3 hardware. Windows will automatically find and install a driver.

5. Go to your computer **graphics card settings** and set the **desktop resolution** to **1280x720**, then set the multiple monitors setting to **Clone**. Now your computer desktop should be displayed on both your computer LCD and your GCS3 hardware LCD.

6. On your computer, launch **Autodesk Maya**.

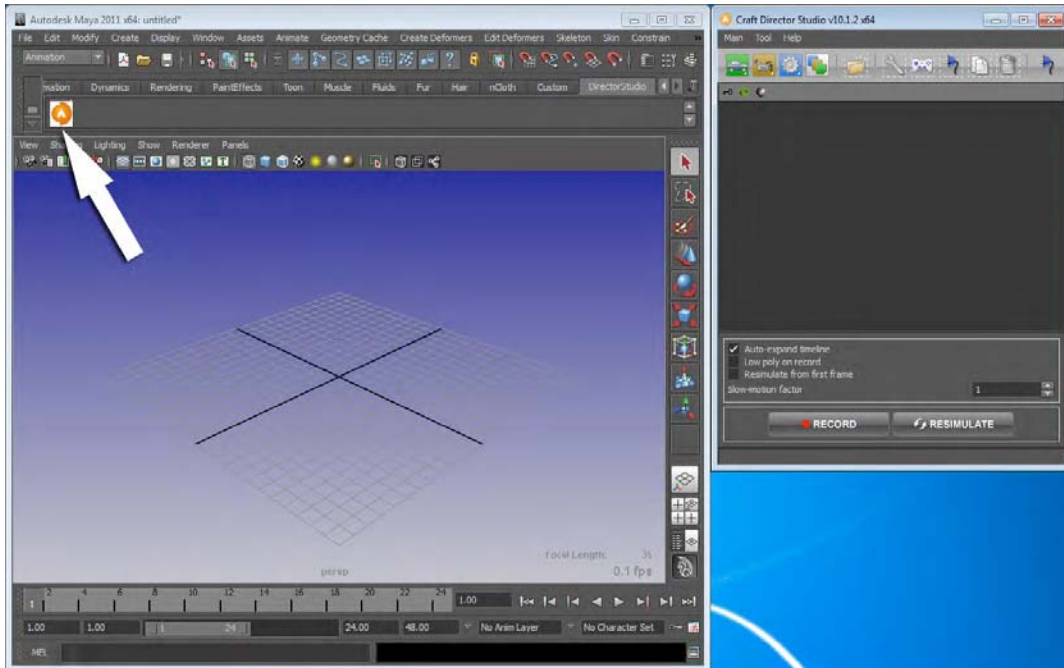
ADDING A GCS3 VIRTUAL CAMERA TO YOUR MAYA SCENE

1. On the **Maya Status Line**, click the tab labeled **“DirectorStudio”**:

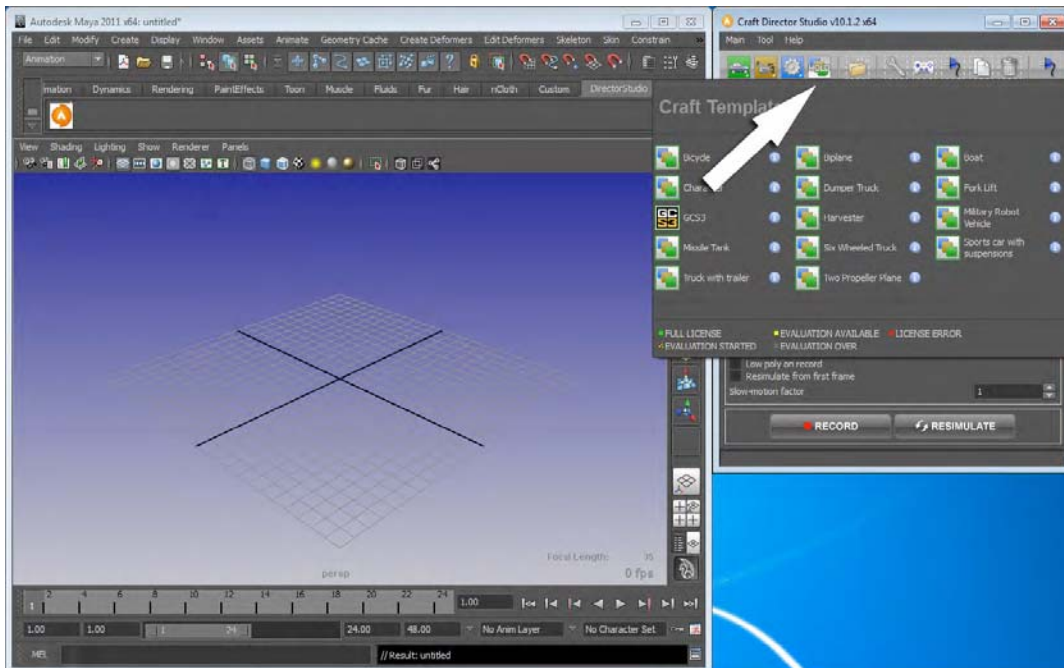


Note: If you do not see the **“Director Studio”** tab, go to **“Window”** > **“Settings/Preferences”** > **“Plug-in Manager”** and place two checkmarks to the right of **“Craftdirectortoolsadapter”**.

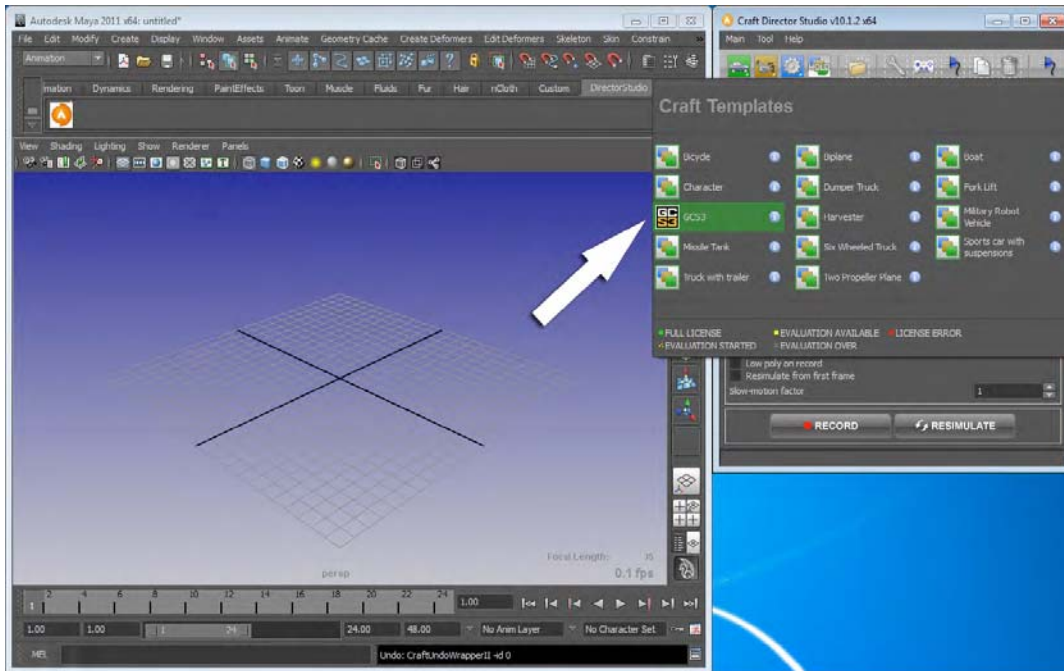
2. On the **Maya Shelf**, click the icon which opens the Craft Director Studio:



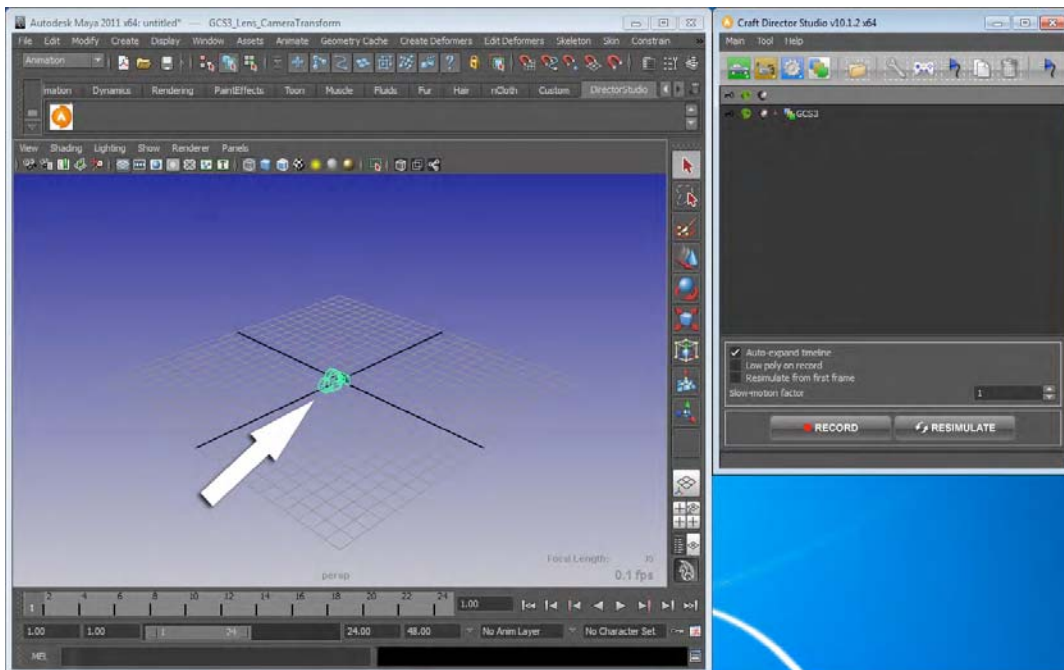
3. On the **Craft Director Studio** window, click-and-hold on the icon with three colored squares, which opens the “**Craft Template**” menu:



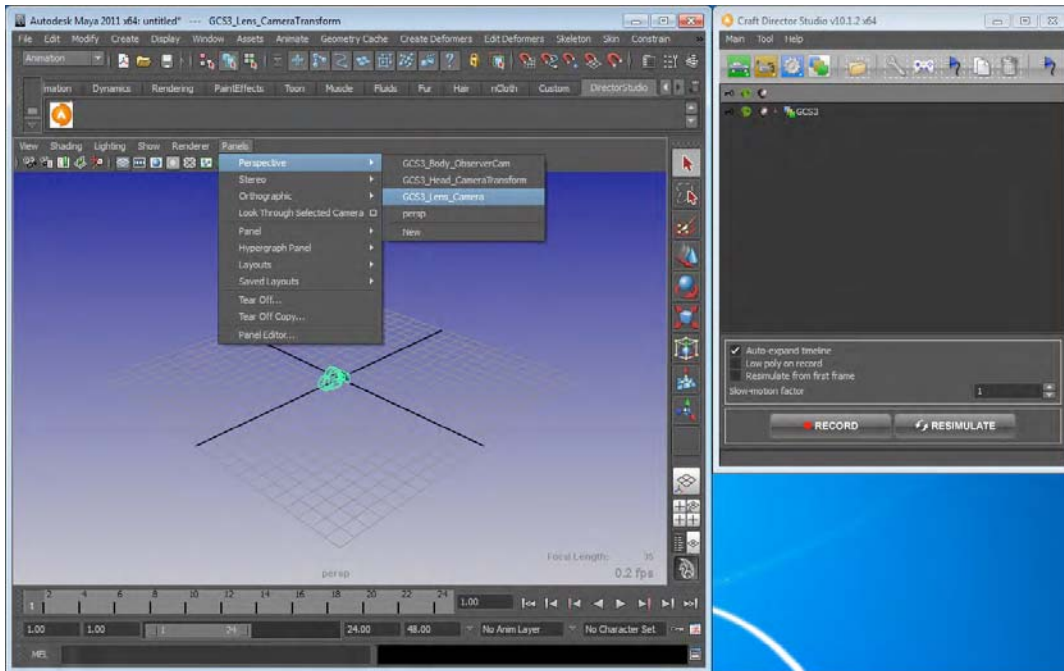
4. On the "Craft Template" menu, click the "GCS3" icon:



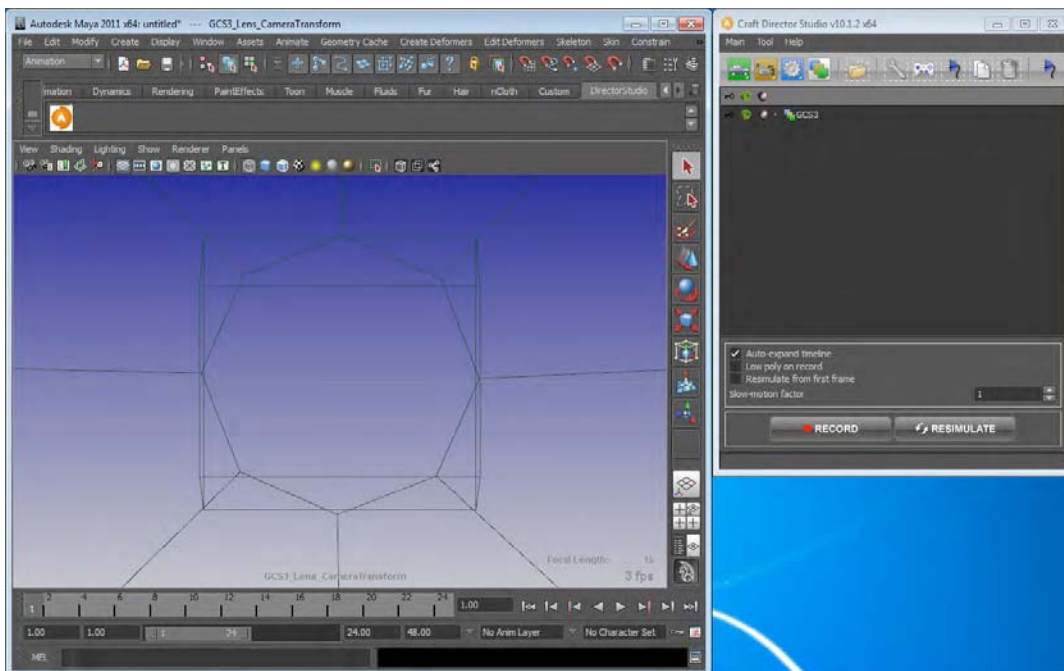
5. A GCS3 virtual camera rig has been added to your Maya scene (you will use your GCS3 hardware to control this virtual camera in real-time):



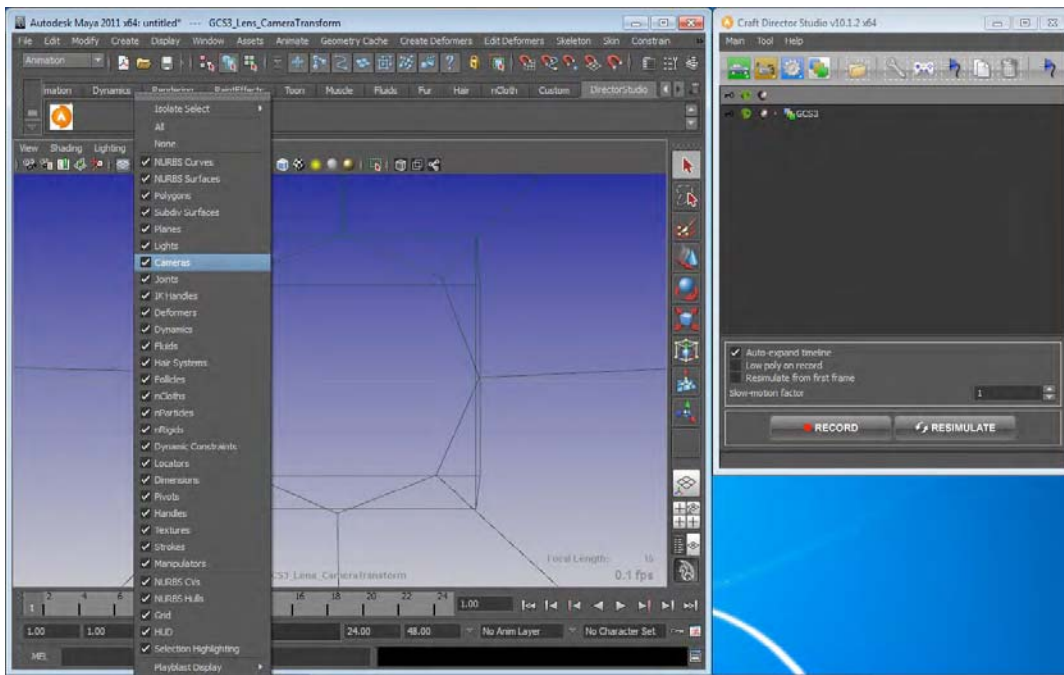
6. Go to “Panels” > “Perspective” > “GCS3_Lense_Camera”:



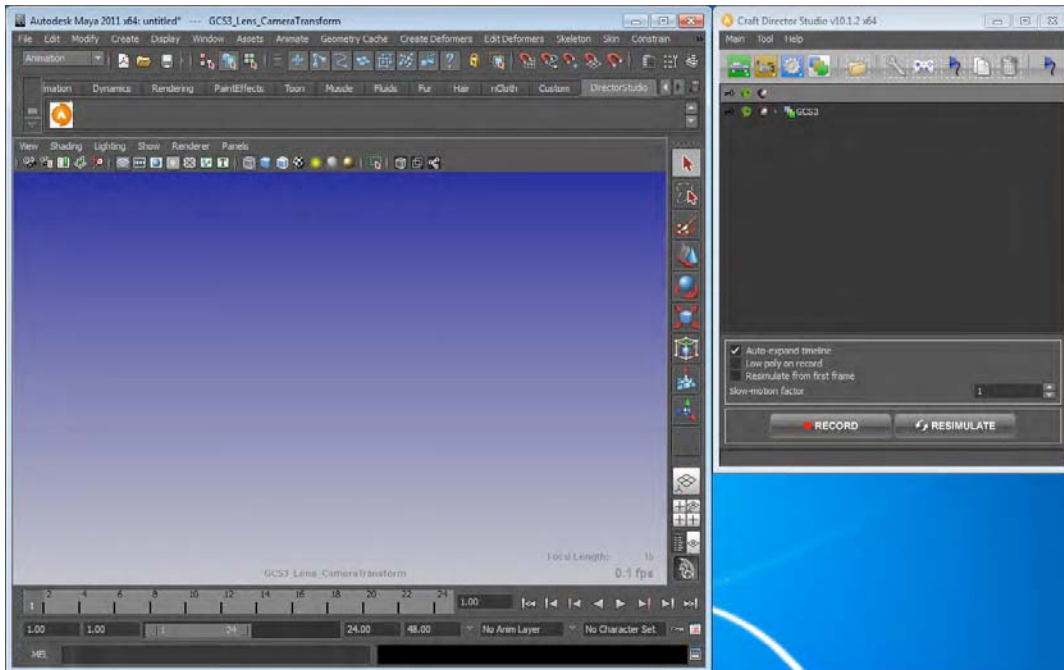
7. You are now viewing your Maya scene through the virtual camera:



8. If you wish to hide the virtual camera wireframe, go to **“Show” > “Cameras”** and uncheck the box:



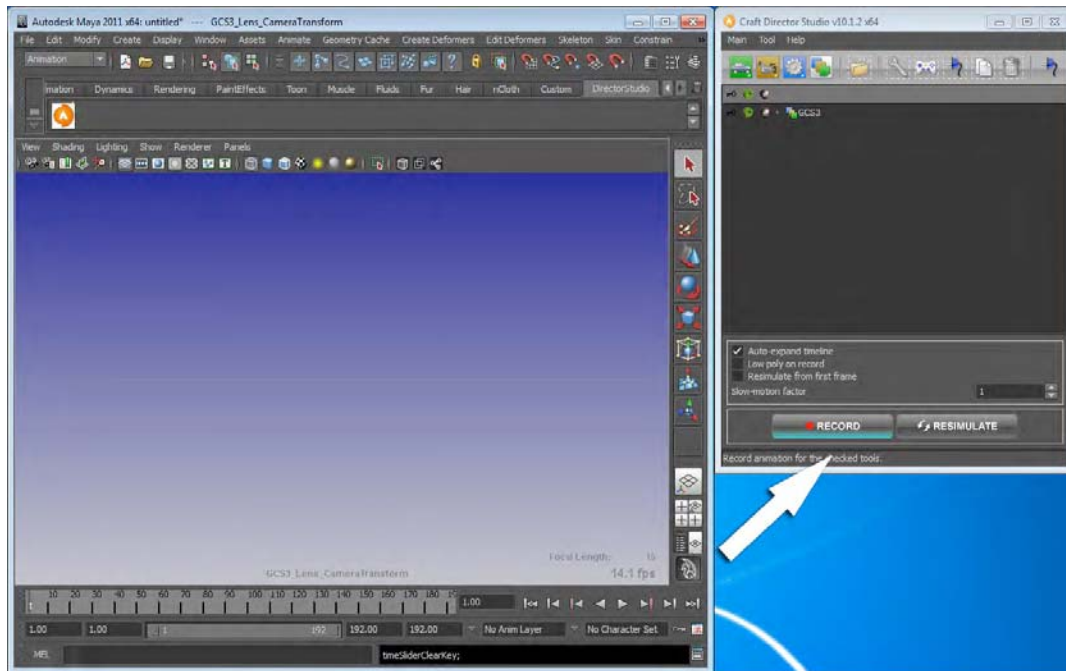
9. The virtual camera wireframe is no longer visible:



RECORDING YOUR VIRTUAL CINEMATOGRAPHY

Note: We recommend **optimizing** the **geometry** and **animation** of your Maya scene for real-time playback at **24 frames per second** for a smooth filming experience.

1. On the **Craft Director Studio** window, click “**Record**”:

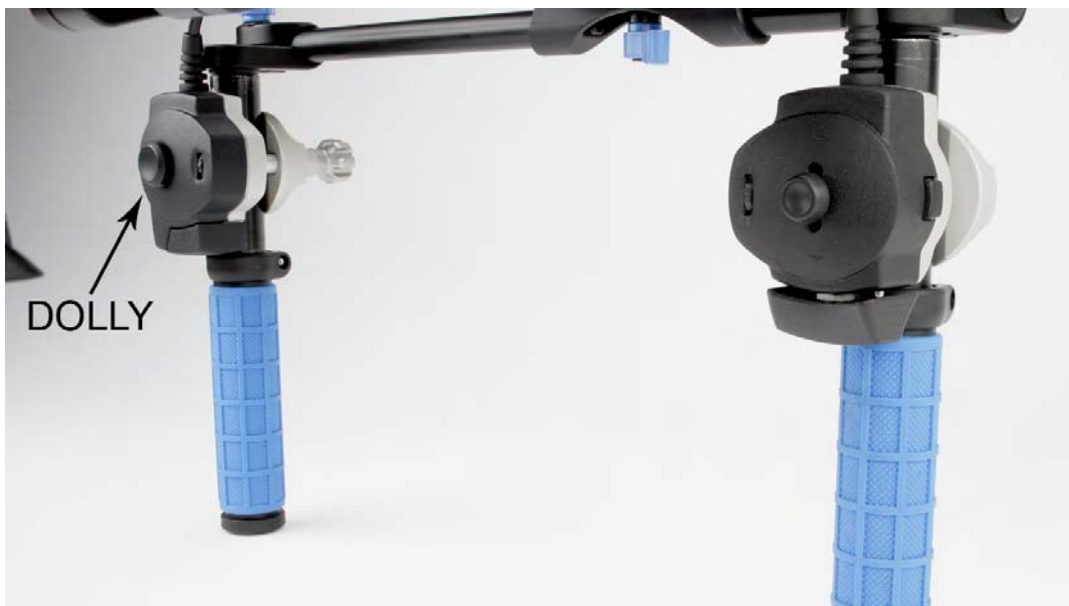


Note: Your Maya scene plays and your GCS3 hardware is controlling the virtual camera in your scene in real-time.

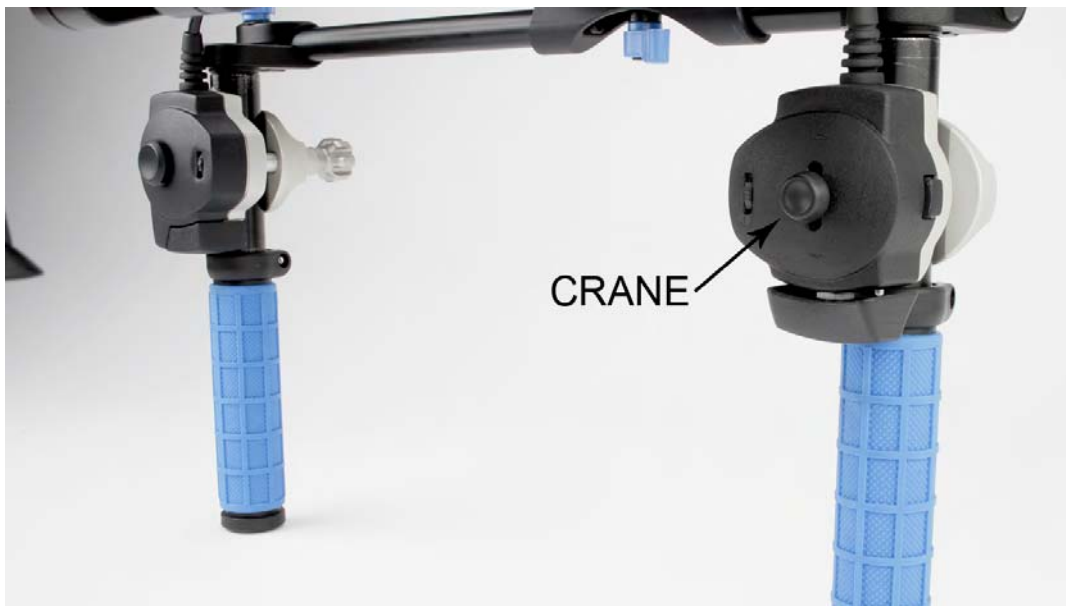
2. Move your body to pan, tilt and roll your GCS3 hardware as if you were filming live action with a video camera. This **rotates** the virtual camera in your Maya scene correspondingly:



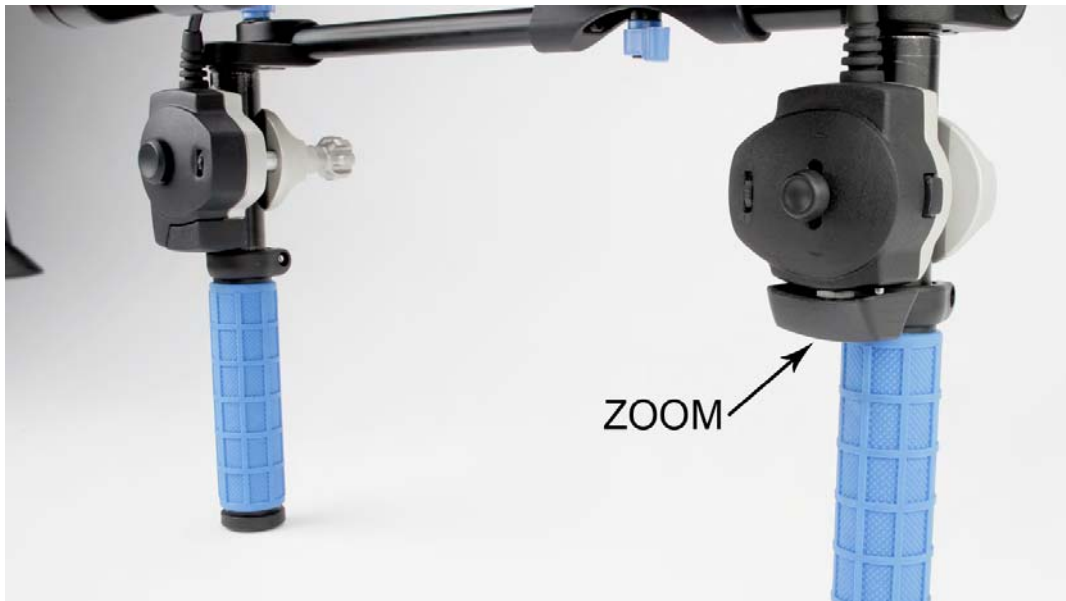
3. Use your left thumb to move the left hand controller's thumbstick up, down, left and right to dolly. This **translates** the virtual camera correspondingly:



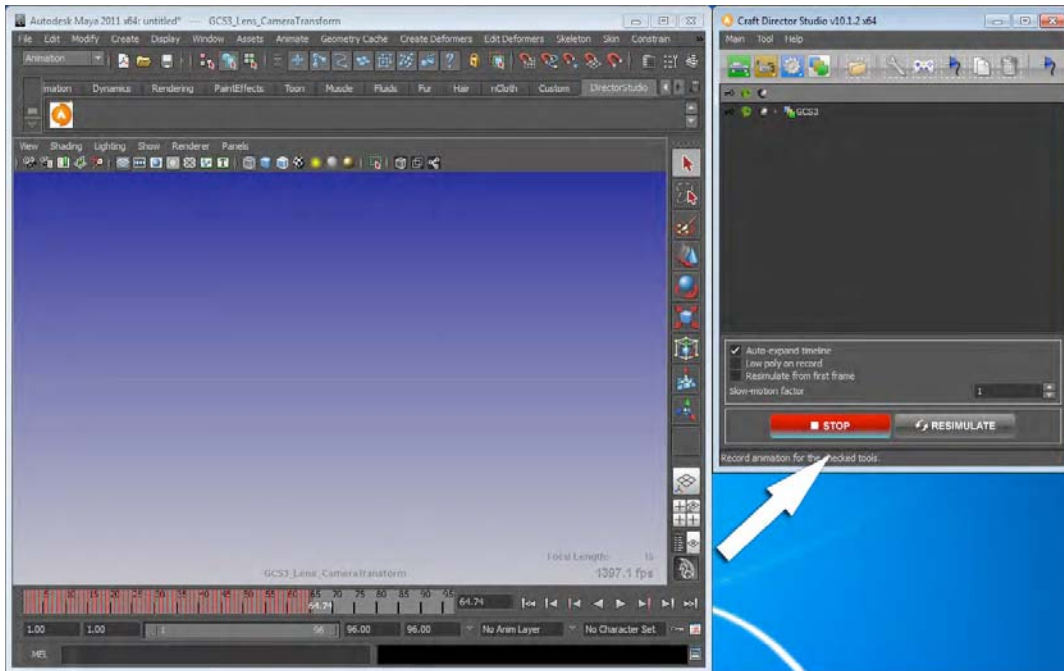
4. Use your **right thumb** to move the **right hand controller's thumbstick** up and down to **crane**. This **translates** the virtual camera correspondingly:



5. Use your **right thumb** to move the **right hand controller's zoom button** left and right to **zoom**. This **changes the focal length** of the virtual camera correspondingly:



6. On the **Craft Director Studio** window, click **“Stop”**:



Note: Your Maya scene stops playing and your recording is paused. All of your real-time virtual camera rotations, translations and zooms have been automatically keyframed by the GCS3 Maya plug-in.

7. On the **Maya Timeline Playback control panel**, click the **Back** button, then the **Play** button to watch your take. Click the **Stop** button to stop playback. To record over your take, click the **Back** button, and repeat steps 1-6 above.

WORKFLOW

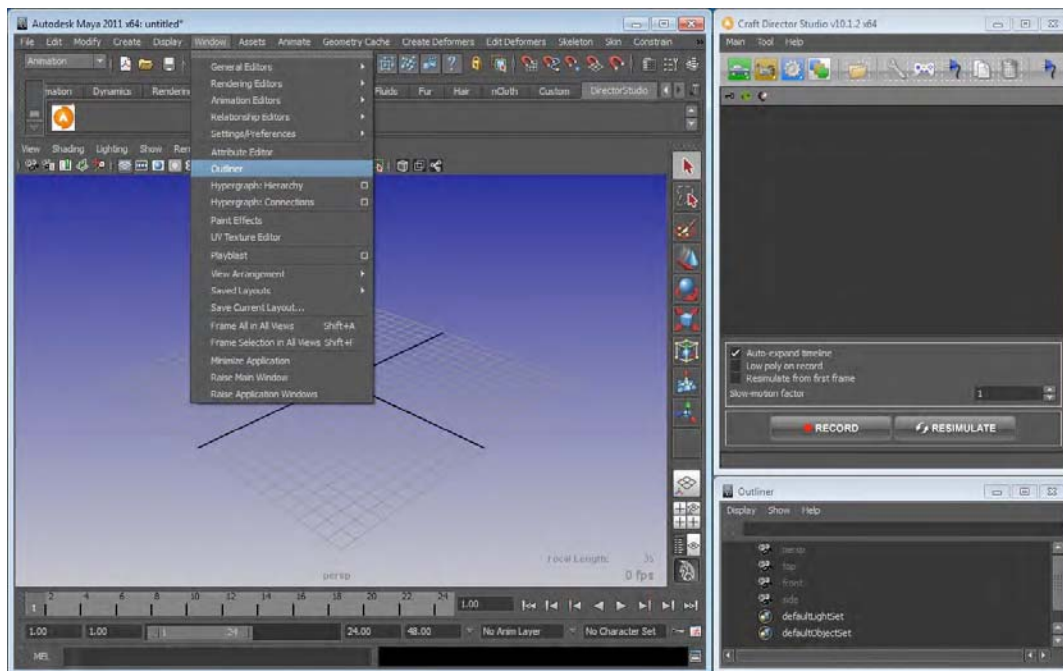
1. To add multiple GCS3 virtual camera rigs to your Maya scene, repeat the section, **ADDING A GCS3 VIRTUAL CAMERA TO YOUR MAYA SCENE**, steps 1-5. Give each virtual camera a different name, camera angle (position) and shot size (focal length) as needed.
2. To film your scene from each virtual camera's point of view (one at a time), repeat the abovementioned section, steps 6-9, and then repeat the section, **RECORDING YOUR VIRTUAL CINEMATOGRAPHY**, steps 1-7.
3. To intercut your virtual cameras and edit your sequence together, with music and sound effects (if needed), use the **Maya 2011 Camera Sequencer** (available

only in Maya 2011). Consult the Maya 2011 documentation on how to use the Camera Sequencer.

TROUBLESHOOTING

Issue: In **Maya Perspective view**, when I use my mouse to scale or move the GCS3 virtual camera in my Maya scene, the virtual camera splits into two cameras.

Resolution: Go to **“Window” > “Outliner”** which opens the **Maya Outliner**:



On the **Maya Outliner window**, find and click on **“GCS3_Body_ObserverCamTransform”**. This selects (and highlights) the entire GCS3 virtual camera rig.

Now you can use your **mouse** in conjunction with the Maya **Scale**, **Tumble**, **Track** and **Dolly** commands to scale and move the GCS3 virtual camera in your Maya scene as a single node.

After you move the GCS3 virtual camera into the desired position, **before recording your virtual cinematography**, be sure to go back to **“Panels” > “Perspective” > “GCS3_Lense_Camera”** to view your Maya scene through the GCS3 virtual camera.

CUSTOMER SERVICE

Gamecaster is located in San Diego, California in the Pacific Time zone. Normal hours are:

M-F: 9a – 5p (PST)

For GCS3 service contact Gamecaster at:

GCS3@gamecaster.com

Please include a detailed description of the problem, what steps were taken to try and resolve the problem and if possible, what steps could be taken to repeat the problem.