

The Approach to Animation and Modelling

The language of the Animation and Modelling

We use a "Triangular Faceted" [model](#) of the objects that are to be animated.

The triangular [faces](#) are joined together to form the surface of the models and the more numerous the triangles, the more realistic the representation of the object the model is.

The triangular facets (faces of the model) are positioned using a [vertex](#) at each corner. Each triangular face is surrounded by three [edges](#). The edges make up a "wireframe" description of the model.

The action takes place over a number of '[frames](#)', a movie usually plays 24 frames per second, video at 25 to 30 FPS.

Models are built inside a cubic region of space called the "[Working-Volume](#)". The size and position of the "Working-Volume" is easily changed.

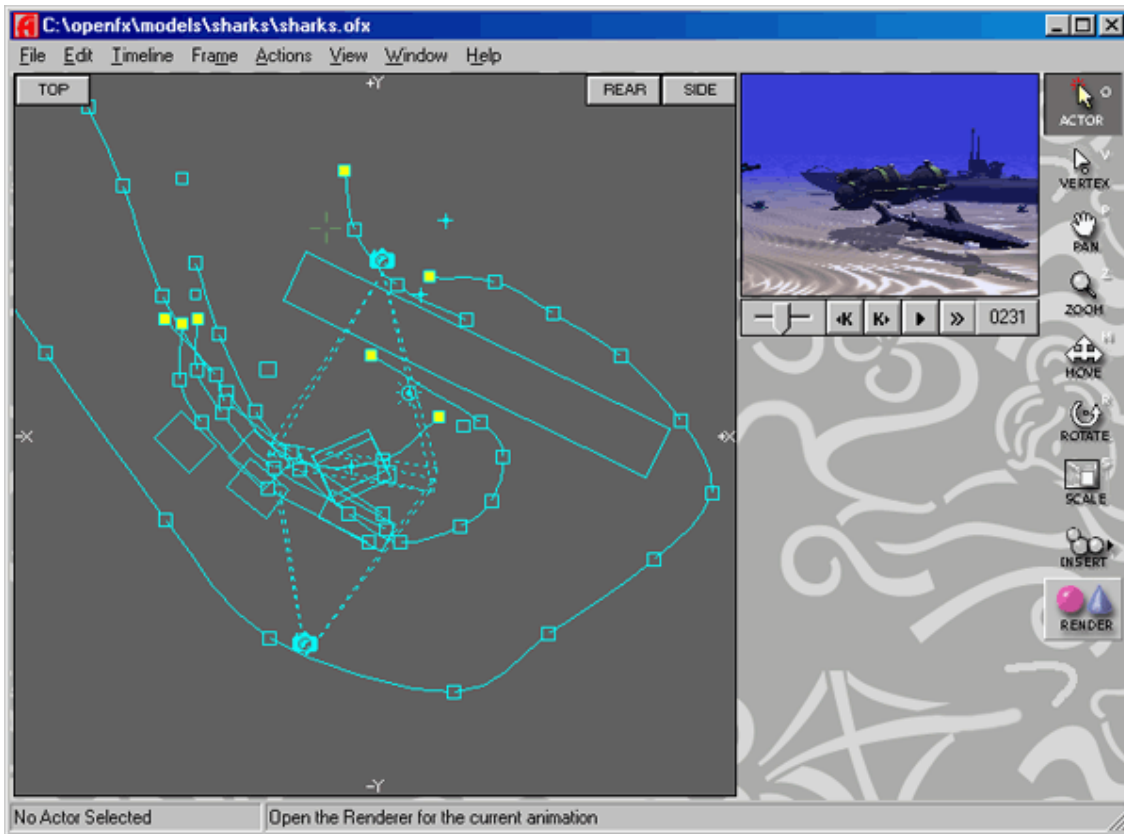
A [Keyframer](#) specifies costume, movement, orientation and scale in "[Keyframes](#)". Animations are rehearsed in "wireframe" in the Animation module before the drawing is rendered in full color, frame by frame. Each frame may be compressed together into an FLI or FLC animation file.

In an animation the term "[Actor](#)" is used to describe each directable element. An Actor can be an object which appears in front of the camera, the Camera from which the animation is viewed, one of a number of lights, or a path along which smooth and accelerated motion is possible.

The Actors wear a "[Costume](#)" which is an model created in the Designer. Actors can change costume during the animation. (This allows model morphing - changes of shape, for example. a fish can turn into a bird).

Animation

The Animator module is where animations are set up. Three orthogonal views and a camera view show the world where the action takes place.



The visible region of the world is inside a cubic volume known as the [Working-Volume](#). The Working-Volume may be moved through space and changed in size.

A major component of the Animator is the [Keyframer](#), the keyframer shows the [timelines](#) and [keyframes](#) for all the [Actors](#) in a spreadsheet format.

Keyframer

To direct the activity of an [Actor](#) during an animation requires the use of [timelines](#) and [keyframes](#). The Keyframer is a module where the timelines and keyframes of all Actors can be viewed and edited in one display. Normally timelines and keyframes are created implicitly as Actors are added and the tools are used to move them into position and tell them what to do.

In the keyframer window time runs in the horizontal direction and for each Actor the extent of timelines and position of keyframes is displayed.

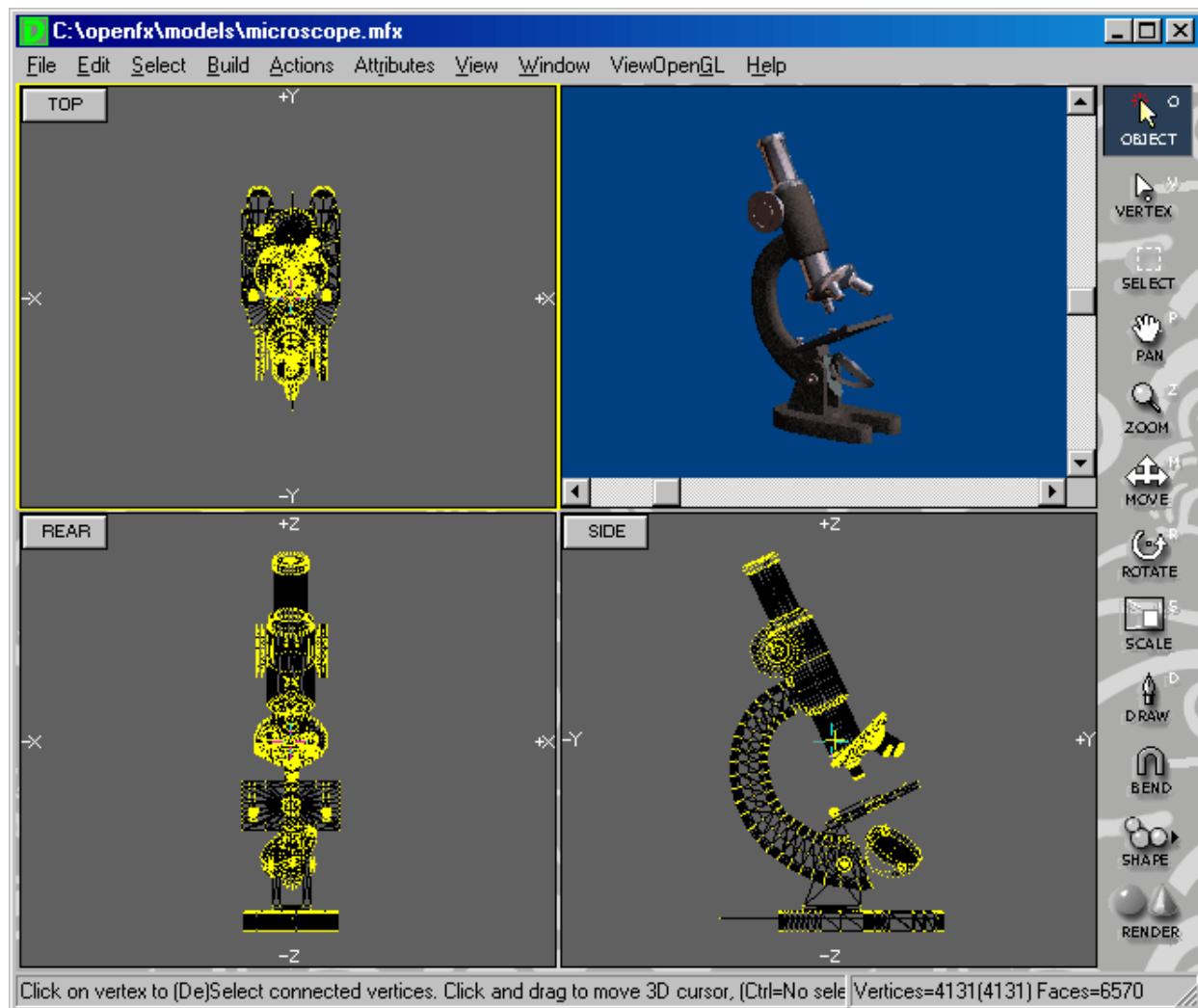


The timelines are the red horizontal lines and the colored dots at the end of the timelines are the keyframes.

Designing

The Designer module is where models are built.

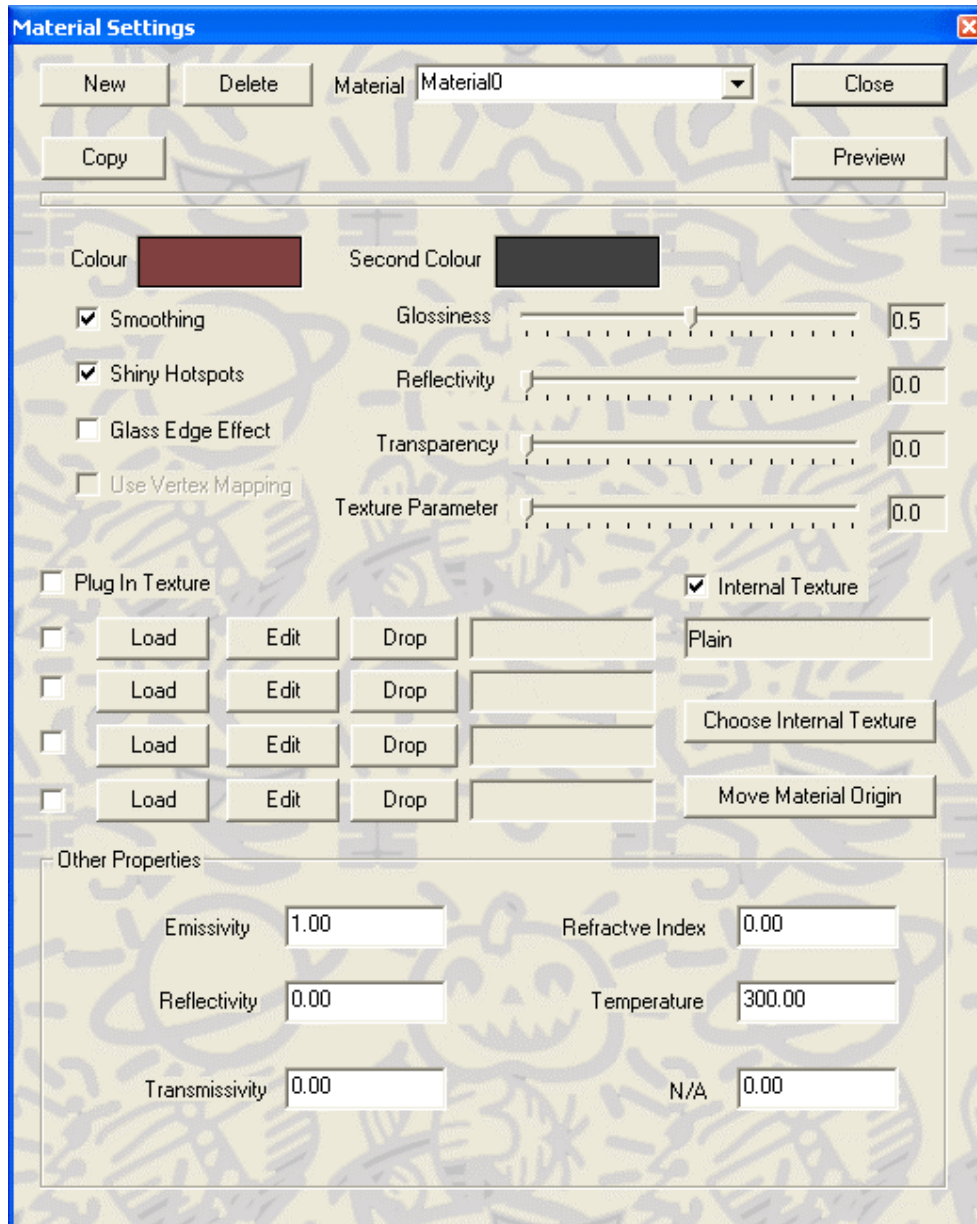
Three orthogonal views give working access to a volume of space, known as the [Working Volume](#), where Vertices edges and faces may be placed. This gives a triangular faceted model for real or imagined objects. The Camera View in the upper right hand corner displays a perspective rendering of the contents of the three views.



Edit Material

A maximum of 64 materials can be applied to every model and each one is defined using the dialog below. (A material is applied to the selected vertices using the "Mesh Map and Materials" menu command.)

All materials are described through the Material Settings dialog.



The Basic Controls in the Dialog

New - Create a new material with basic default properties.

Delete - Delete this material.

Select / Rename - Use the dropdown list box to select the material to be edited or to change the name of the material.

Copy - Copy the properties of an other material to this one. A pop-up dialog will allow you to select the material to be copied.

Other Properties - This sets the material properties for the millimetre wave renderer.