

Animation

This tutorial introduces you to the concept of animations within Simmetry3d.

Concepts

In this tutorial you will learn:

- what is an animation
- how to create an animation
- how to play an animation
- how to edit an animation

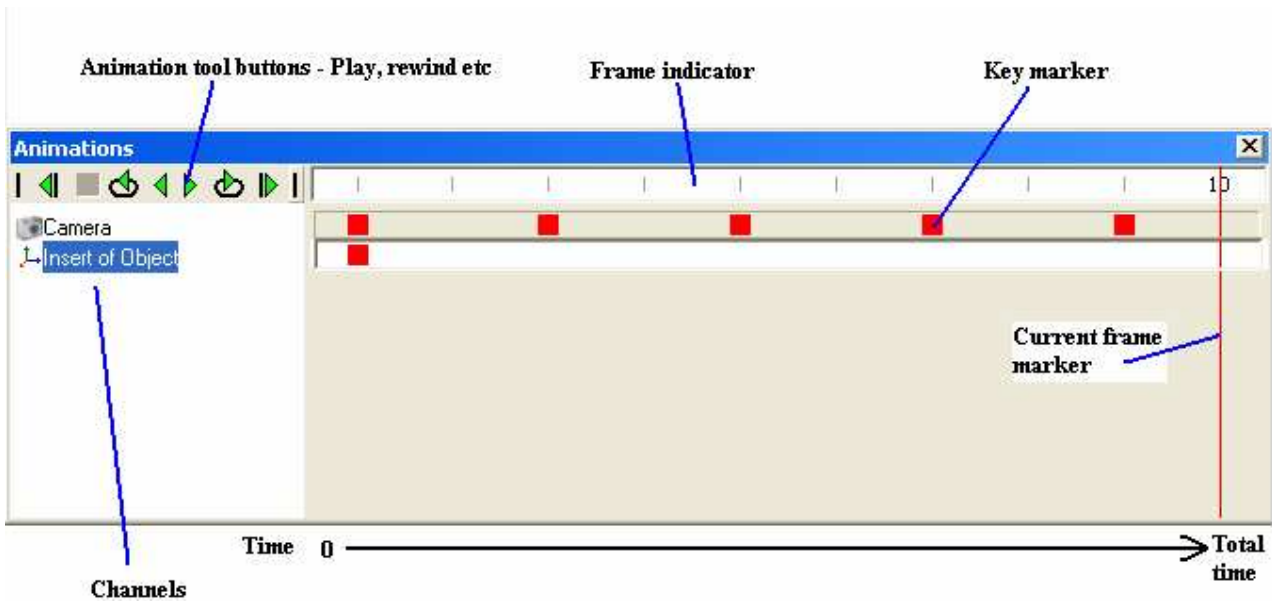
Prerequisites

- Project Tree
- Objects

Animations

Animations let you define what happens in your design over a defined time period. You can define as many of these animations as you want, and each one can change different attributes in your design.

The type of animation in Simmetry3d is what is known as “Key frame animation”. In this type of animation, the animation runs over a finite time period – its “total time”. This total time is split up into regular spaced time intervals or “frames”. At each one of these time intervals you can “record” attributes in the design known as “keys”.

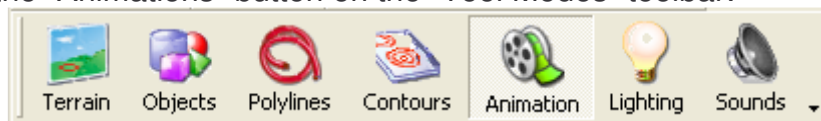


The animation is split into channels – each channel corresponds to an object in the design and allows you to consider each object separately when constructing your animation. A channel stores a list of recorded keys for the object associated with that channel. It is up to the designer to alter the attributes of an object and then record the keys – this is part of the creation process for animations and the following exercises will teach you how to do this. When playing the animation the software computes smooth transitions between the recorded keys either using linear or cubic interpolation (set in the properties of each channel).

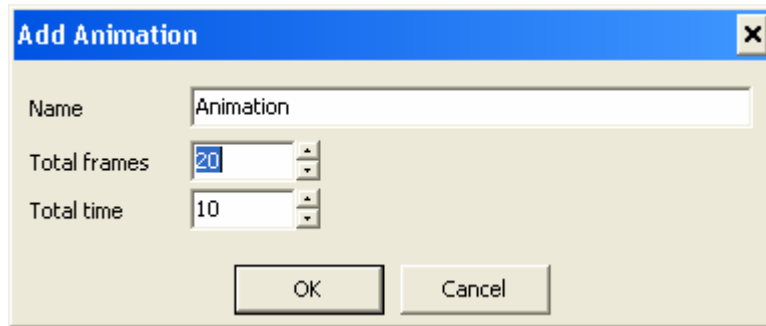
EXERCISE 1

Create an animation.

- File | Open and select “Animation.s3d”
- Press the “Animations” button on the “Tool Modes” toolbar:



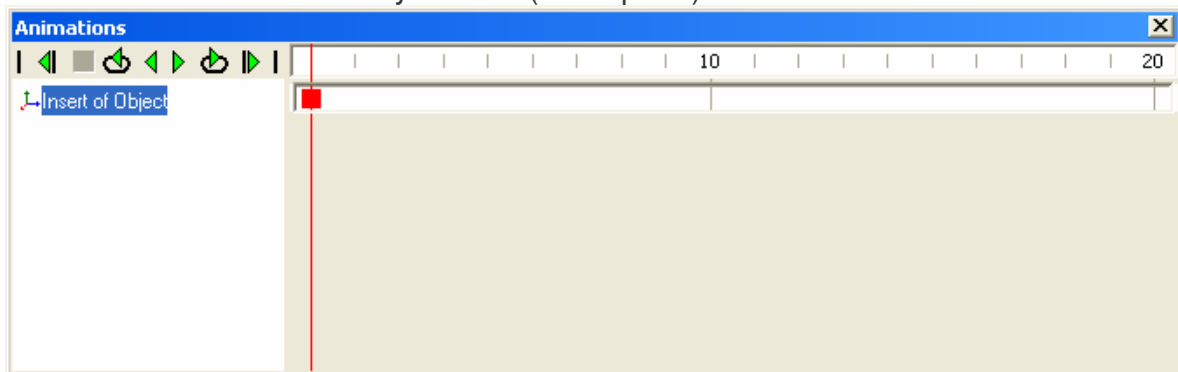
- Find the “Animations” item in the Project tree and right click on it. Choose “Add animation”.



- Set Total frames to 20 and Total time to 10 seconds. Press “OK”
You will notice that an animation item has been added to the Project tree and the Animation panel has been enabled so the “Frame indicator” now shows the frames from 1 to 20.

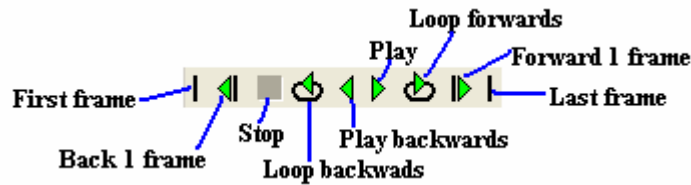
The project has an object (woman), placed in the middle of the terrain. First we need to create a channel in the new animation for this object.

- Right click on the “Channels” panel – and select “Add Object Channel” this will show a dialog in which you can choose the object.
(Alternatively you can drag the object from the Project tree onto the Channels panel). You will now see the name of the object in the Channels panel.
- Now click on the Keys panel in line with the object name
This will make this channel active – and it will be highlighted.
- Now right click on the active channel and choose record key.
This will add a key marker (red square) to the channel:

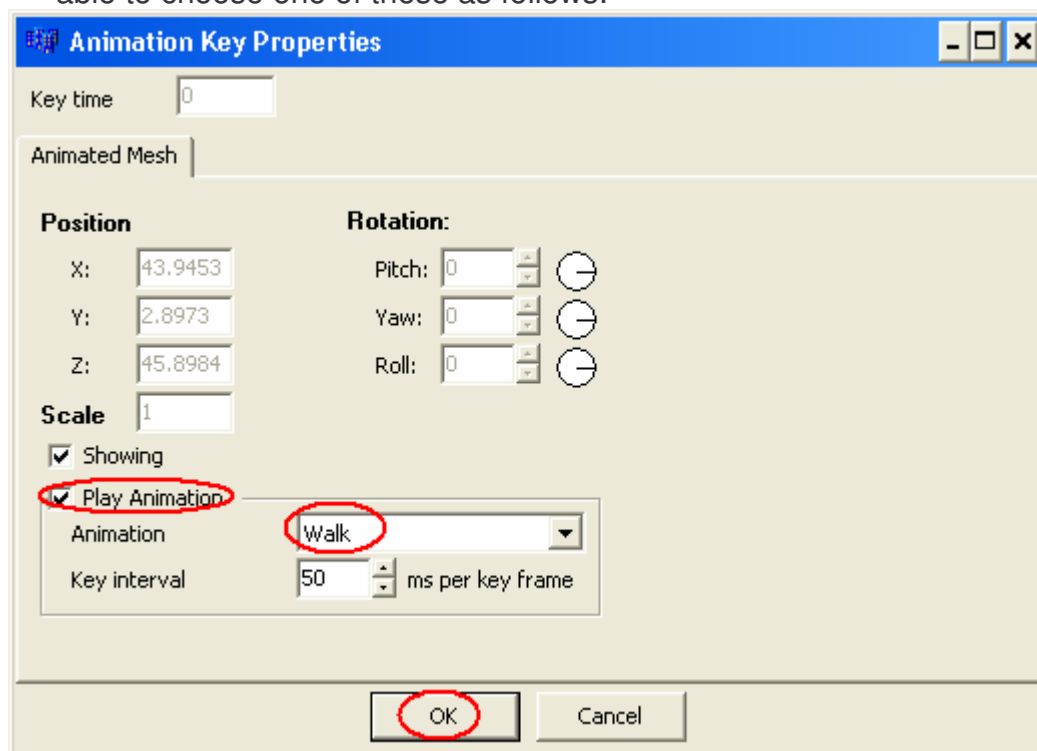


- Now move the current frame on to frame 10 – left click in the object channel under the 10 (shown in the frame indicator),
This will move the current frame marker (vertical red line) to the 10th frame. Now we can move the object to the position we want it to be in half way through the animation.
- Use the object move tool to move the object forwards... when you are happy with its position right click on the object’s channel and choose “Record key”
This will create a key marker under the 10 in the object’s channel. You can do this for every frame in the animation in the same way as described already – Move to the frame you want to setup – the vertical line will show the current frame. Move/rotate/scale the object, then record its key.
- NOTE: You must remember to move the current frame to the frame you want to set the object position for BEFORE you change the object’s position.

- When you have created all the keys for the object – move the current frame back to the beginning by clicking to the left of the channels panel. Now you can press the animation “Play” button to view the animation.



- Experiment with the animation tools to see what effects they have.
- Now try right clicking on a key marker and choosing “Properties”. A dialog will appear which shows you the properties of a particular key.
- Some mesh objects have predefined animations within them and you will be able to choose one of these as follows:



- Play the animation again to see what effect this has had.
- Other things to try are – using the camera tools as the animation is playing; ; changing the light position as the animation is playing; changing the terrain view settings.

There is a project with a complete animation for this object in it called “AnimationDone1.s3d”.

EXERCISE 2

Adding a camera channel.

- Right click in the “Channels” list and choose “Add camera channel” – a camera channel should appear in the channel list.

- Move the current frame indicator to the first frame.
- Now use the camera tools to move the camera to the position you want it to be at the start of the animation. Now you can record a key for this first camera frame.
- Continue to move the current frame indicator and move the camera around and record keys for the whole duration of the animation.

There is a project with a complete animation for this object and camera in it called “AnimationDone2.s3d”.

Advanced Options

Creating a video

- Right click on the animation item in the Project tree – choose “Create Video”. You must choose a file name for the video file and the directory for it to go into.



- Resolution – this sets how many pixels are used per frame in the animation.
- Codec – this is how the video is compressed into the video file
- Quality – this controls the degree of compression – a lower quality value will create a smaller video file.

- The total length in time of the video will be as you set it when you created the animation. Frames per second – controls how many frames per second will be written into the video file.
- Capture Sound - Check this if you want a sound track in the animation file. (You will need to add sound insert channels to your animation too).
- Format – this is the format in which the sound is to be captured.
- Frequency – this is how many sound samples per second are to be captured.
- Devices – lets you choose the sound device from which to capture the sound.
- Mixer control - you should adjust this to be the channel you wish to record from typically its called something like “Wave out”.
- Experiment with these settings. The show preview settings will show you the images which are going into the video file as they are being generated.

Other Channel Types

- Experiment with some of the other channel types – Sun, water, more objects etc. They behave in the same way as the other channels you’ve already created.