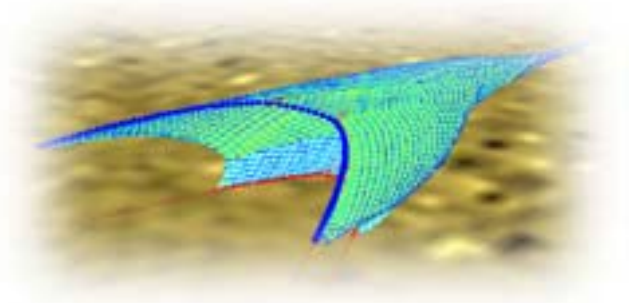
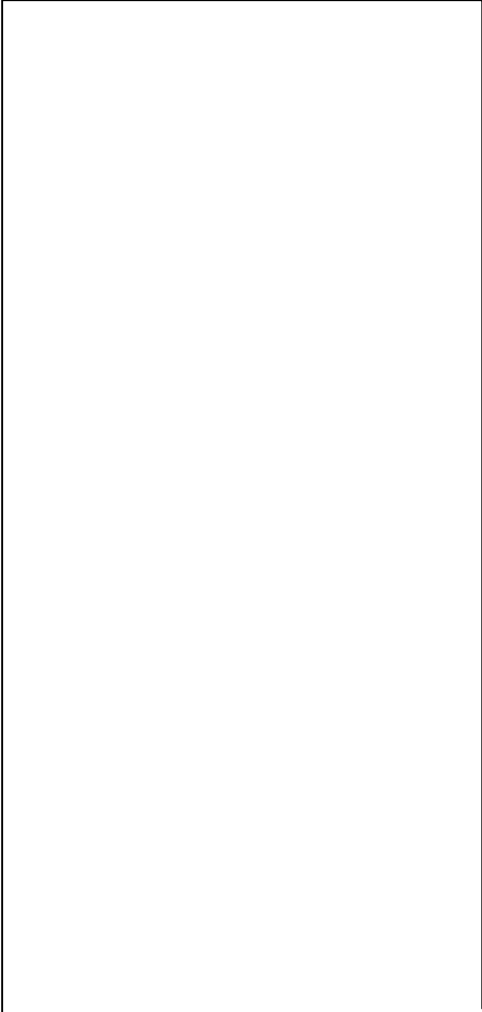


# Exercises DynamiT



## DynamiT

Ifremer

Training exercises  
for new users

How to produce a video animation

This tutorial shows step by step how to produce a video animation using DynamiT v2.0

## 1 Basis

Video editor software deal with PAL and NTSC formats. The PAL system is rather used in Europe and is based on 720 x 576 pixels pictures at a rate of 25 frames per second.

CODEC (Compression, Decompression algorithms) are used to reduce the size of video files (compression) and also to play compressed video files on a video player (decompression).

It is not compulsory to follow this format (25 frame per second and 720 x 576 pixels per frame), however, most CODEC and video editor software will not deal with different format (PAL or NTSC).

Considering :

- the duration of the animation you want to produce
- the ratio between the simulated time and the animation time which should not exceed 5 to 10,

you can easily define the time step to generate a still frame with DynamiT during the calculation.

## 2 Generate the files corresponding to each still picture

We suppose we want to produce a video animation rendering the effect of adding a series of floats on a bottom trawl headline of about 20 meters. From the moment floats are added, the new trawl shape should be reached after about 30 seconds.

Considering :

- the video is PAL,
- its duration is 6 seconds

calculate the number of still frame to generate and the calculation parameter corresponding. Notice it can improve a video if you choose a smaller remainder in the equation solver (also in the calculation parameters). This will avoid flashing effects in the net colors.

Run the calculation and wait till your frames are generated. Save you work.

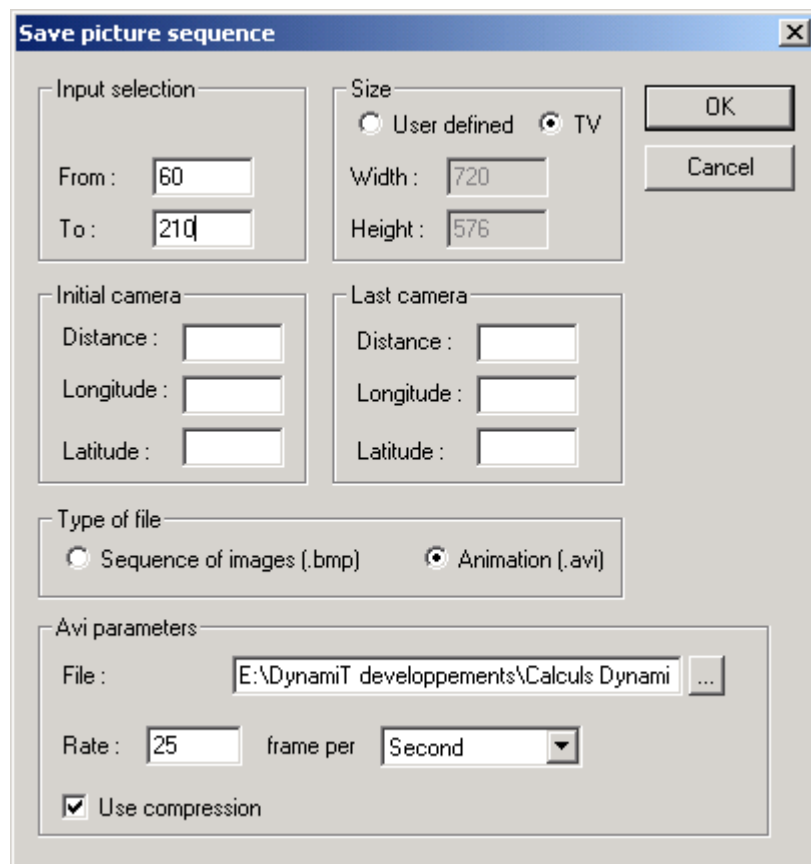
### 3 Choose the view angle and distances

A constant-view animation can be useful to observe the effects of a modification at a particular place a gear. However, it can be convenient to move the camera around a trawl to have a general view.

Choose 2 different points of view using the mouse and the zoom tool. For each point of view, notice on paper the angles and the distance.

Hit the 'record' button to produce you video.

Input the angles and distance corresponding the first and the last camera position.



Input the files numbers corresponding to the first and the last frame you want in your animation.

Select 'TV' to choose the PAL format.

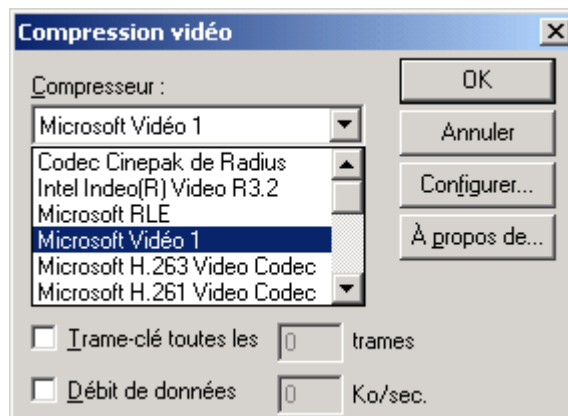
Select 'Animation' to produce directly a video. Alternatively, you can produce a series of still frames.

Choose the rate (number of frames per seconds).

Choose<sup>1</sup> to use a CODEC (use compression).

#### 4 Use a proper CODEC

DynamiT allows the use of different CODECs, depending on the number of CODECs installed on you machine. Goods quality animations can be obtained using the Microsoft Video 1 CODEC. However, this CODEC has a low compression rate and consequently produced large files : about 6.3 Mo per second if you set the quality parameter to 100.



Choose the Microsoft Video 1 CODEC . Set the quality parameter to 100. Hit OK, the DynamiT starts to generate the animation.

Alternatively this parameter can be set to lower values. File size and quality will be reduced.

<sup>1</sup> If you intend to use a video editor software to add titles or video transitions, to add audio or to mix DynamiT animations with other movies, it is advised to avoid the compression step. You will then produce much bigger files but maximum quality. Your video editor software will run the compression step instead.

## 5 This should help

### Generate the files corresponding to each still picture

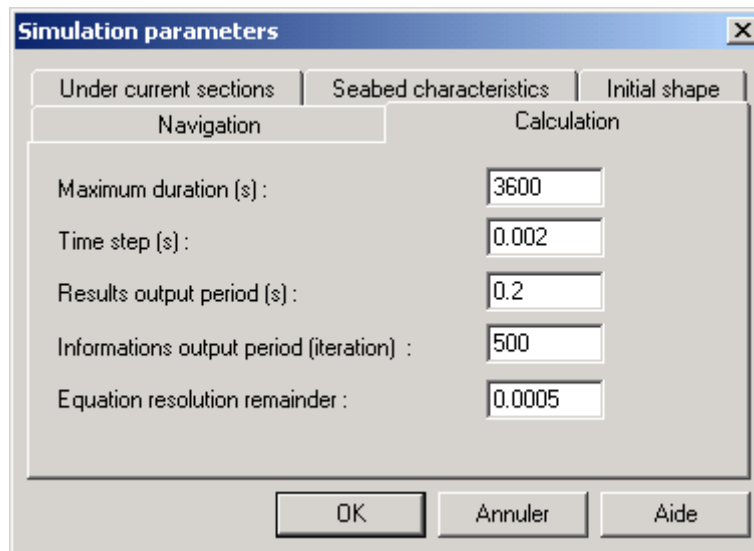
How many frame for my video ?

The video lasts 6 seconds at a rate of 25 fps. The clip should contain  $6 \times 25 = 150$  frames.

How often will DynamiT generate a frame ?

The 150 video frames represent 30 seconds of 'real file'. Consequently, a new frame will be generated each 0.2 second. In the calculation parameters, you will choose 0.2 second in 'result output period'.

When producing a video animation, decrease the 'equation resolution remainder' from the default 0.005 to 0.0005 to increase the smoothness of the animation.



It is also possible to limit the simulation maximum duration to 30 seconds. However, usually, an other modification of the trawl is tried and turned into video, continuing the previous modification.