

TRIAXES® MORPHER™

VERSION 3.6

USER GUIDE

Web site: www.triaxes.com

Technical support group: support@triaxes.com

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1 Introduction

1.1 Morpher Purpose

Main purpose of Triaxes Morpher is creation of frames sequence illustrating transition of one image to specified view or to another image (morphing effect). The program can be used for creating caricatures, images with flip, animation and zoom (object zoom in/zoom out) effects.

The program has calculation mode, which calculates intermediate states between two frames and can be used for generating intermediate sequence of frames from stereo pair to create stereo image.

The general procedure of generating frame sequence includes several steps:

- opening one or two images;
- adjusting image transition contours. In case of work with one image, it is necessary to change specified contour;
- generating sequence of frames;
- saving results.

Triaxes Morpher is available in the following editions:

Edition	Features
Triaxes Morpher Home	The program is used for creating images with morphing effect. Allows generating sequence of frames illustrating smooth transformation of one image to specified view (morphing from one frame). It can be used for creating caricatures, images with flip, animation and zoom effects.
Triaxes Morpher Professional	<p>The program is used for creating images with morphing effect. Allows generating sequence of frames illustrating smooth transformation of one image to specified view (morphing from one frame). It can be used for creating caricatures, images with flip, animation and zoom effects.</p> <p>The program also has mode of calculation intermediate states between two frames, which allows generating sequence of frames illustrating smooth transformation of one image to another (morphing from two frames). If stereo pair is used as source frames, generated series of frames may be used in creation of stereo image.</p>

1.2 Hardware and software requirements:

- IBM PC-compatible computer with
- 512 MB of RAM and more
- 15 MB of free disk space for software installation
- 1 GB of free disk space for temporary files
- 1 GHz CPU

- OS - Windows® XP/Vista.

1.3 Activation

It is necessary to activate StereoTracer in order to use it in full-mode, that allows you to get technical support and information about updates. The program runs in Demo mode, until it is activated.

To activate Triaxes StereoTracer, please, do following steps:

1. Launch Triaxes Morpher. **Activation** dialog will appear.
2. Click **Open key** in the **Activation** dialog and then select the file with activation key.
3. Click **Activate** to finish activation process.

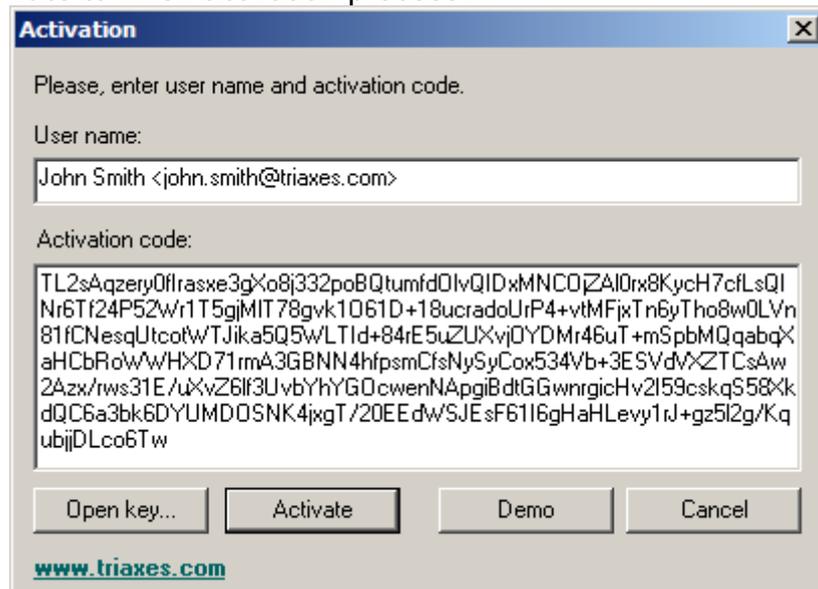


Figure 1.1. **Activation** dialog

After the registration is completed the **About** dialog box (**Help|About**) will start displaying the user name (Fig. 1.2.).

Please, refer to **Activation guide** for details.

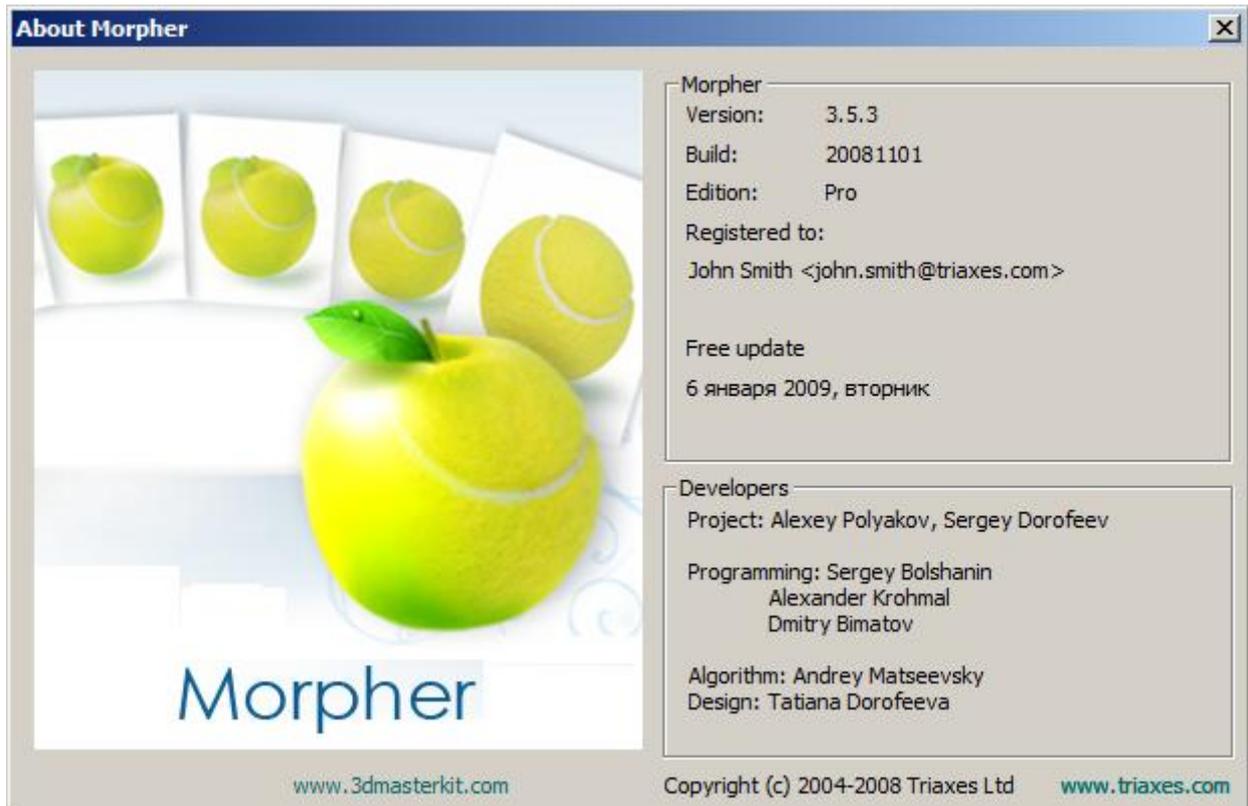


Figure 1.2. **About** dialog

1.4 Technical support

For technical support, please contact your distributor, and if you want you may ask your question directly to Triaxes Technical Support Team: support@triaxes.com. Please specify your name while contacting the technical support service.

Welcome to our web-site: <http://www.triaxes.com>.

This site contains news about Triaxes 3DMasterKit software package and here you can download updates for the programs. Besides, the site contains useful articles dealing with theoretical issues about stereo, lenticular technology and using 3DMasterKit. Also, there is information about distributors and useful links: a gallery, a forum, where you can discuss anything with authors and other users of the program and answers to frequently asked questions (FAQ).

2 The Program Interface Description

2.1 The Program Main Window

The program main window is opened by starting the application.

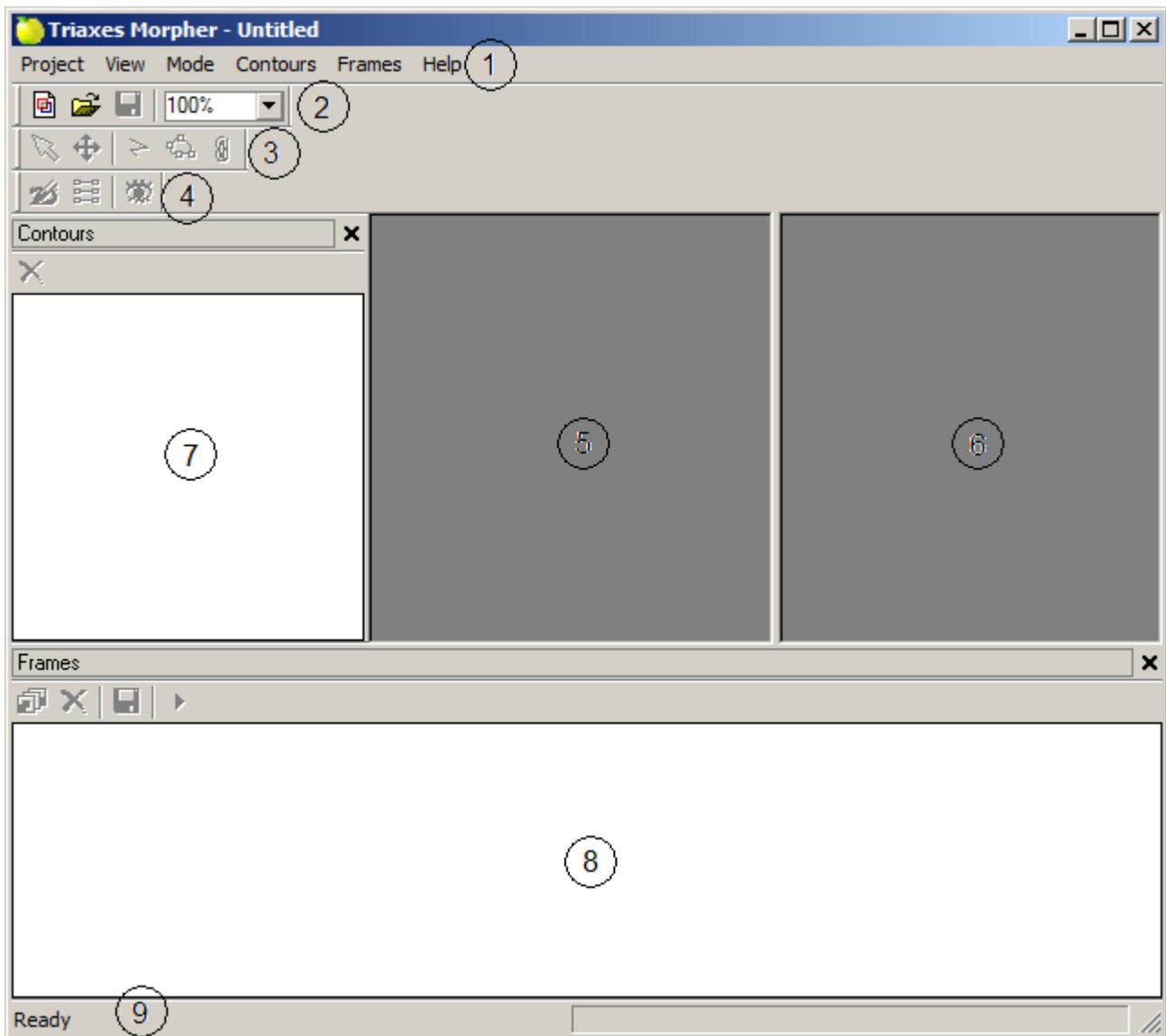


Figure 2.1. General view of the program

The general elements of the program main window are the following:

1. Menu bar
2. Standard toolbar
3. Edit toolbar
4. View toolbar
5. Working area of a source image
6. Working area of a final image
7. Contours window
8. Frames window
9. Status bar

2.2 The Main Program Menu

The main program menu is located at the **Menu** bar of the main program window. There is brief description of the menu items in this section.

Project:

- **Project|New** – create a new project
- **Project|Open** – open an existing project
- **Project|Save** – save a current project
- **Project|Save as** – save a current project with a new name
- **Project|Exit** – exit of the program

View:

- **View|Frames window** – show or hide the **Frames** window
- **View|Contours window** - show or hide the **Contours** window

View|Toolbars:

- **View|Toolbars|Standard toolbar**- show or hide the **Standard** toolbar
- **View|Toolbars |Edit toolbar** - show or hide **Edit** toolbar
- **View|Toolbars |View toolbar** - show or hide the **View** toolbar
- **View|Status bar** - show or hide the **Status** bar

Mode:

- **Mode|Edit** – edit transition contours
- **Mode|View** – view source and final images
- **Mode|Slide-show** – start and stop playing generated frames

Contours:

- **Contours|Select Contour** – enable the contour selecting mode
- **Contours|Add Contour** – add a new contour
- **Contours|Delete Contour** – remove selected contour
- **Contours|Move Contour** – move selected contour
- **Contours|Edit nodes** – edit selected contour by points (nodes)
- **Contours|Synchronous editing** – execute the contour operations simultaneously for the source and the final images

Frames:

- **Frames|Generate frames** – generate a sequence of frames displaying transition from the source image to the final one
- **Frames|Generate last frame** - generate final image from the source one by specified set of contours. Use only in one source image mode
- **Frames|Save frames** – save generated sequence of frames on hard disk
- **Frames|Delete frames** – delete generated sequence of frames

Help:

- **Help|Help** – open User Guide of the program
- **Help|Activate** – activate the program, means switch from demo mode to full mode.
- **Help|About Morpher** – show information about the program: the version number, the data of building and copyrights.

2.3 Status bar

Status bar is located at the lower part of the screen and displays prompts of the menu items and the current state of frames generation. Hide or show it using **View|Status bar** menu command.

2.4 Standard toolbar

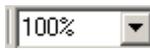
Standard toolbar is located at the upper part of the screen, directly under the **Menu** bar. Hide or show it using **View|Toolbars|Standard toolbar** menu command.



 - Create a new project (see section 3.1)

 - Open a project (see section 3.3)

 - Save a project (see section 3.2)

 - Scale for the current image viewing (see section 3.13)

2.5 Edit toolbar

Edit toolbar is used for the control elements of contours shortcut. This toolbar is located at the upper part of the screen, under the **Standard** toolbar. Hide or show it using **View|Toolbars|Edit toolbar** menu command.



 - Select a contour

 - Move a contour

 - Create a new contour

 - Edit a contour by nodes

 - On/Off simultaneous contours editing mode

2.6 View toolbar

View toolbar is for changing view mode of images. It is located at the upper part of the screen, under the **Edit** toolbar. Hide or show it using **View|Toolbars|View toolbar** menu command.

 - Switch to the contours editing mode

 - show or hide corresponding contours

 - Images view mode

2.7 Contours window

Contours window is for selecting the required contour. It represents a list of images with illustrated on them contours.

To select required contour it is necessary to click it's image by left mouse button. At the same time the corresponding contour will be selected also on the working area. And, vise versa: by selecting contour on the working area the required contour is becoming selected on the **Contours** window too.

To remove selected contour click the **X** button on the **Contours** window or execute **Contours|Remove contour** menu command.

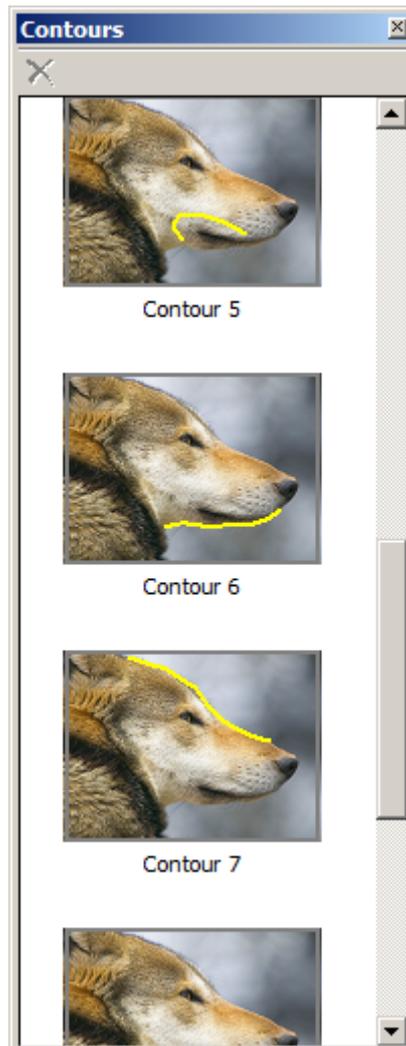


Figure 2.2. **Contours** window

2.8 Frames window

Source images are loaded into the **Frames** window located in the lower part of the screen.

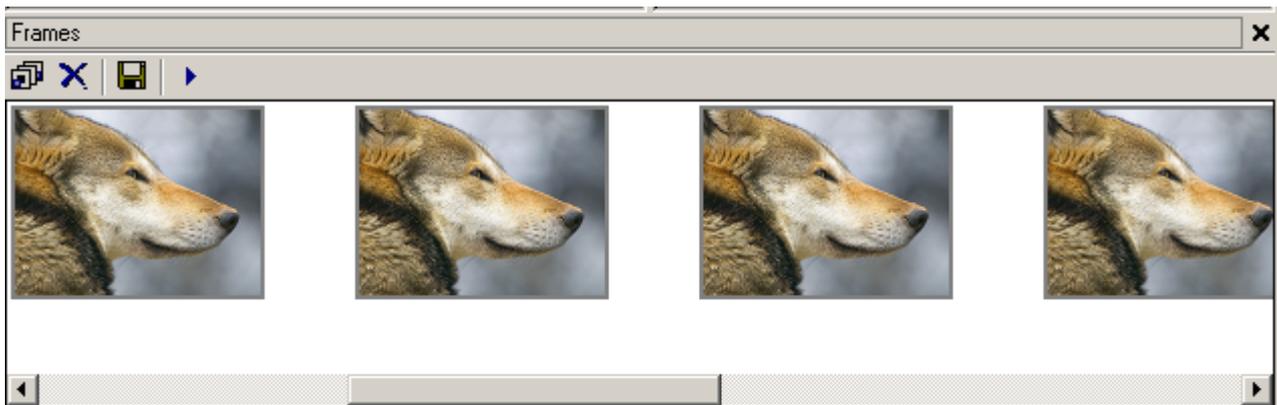


Figure 2.3. **Frames** window

The window contains the toolbar and the images itself – source images, as well as the frames generated by the program. Source images indicated by the red (the initial image) and blue (the final image) frames. Generated images are located between them.

Show or hide **Frames** window with **View| Frames window** menu command.

There are following control elements located at the **Frames** window toolbar:

-  - Generate a sequence of frames / stop generating
-  - Save generated frame sequence
-  - Remove generated frame sequence
-  - Start slideshow / stop slideshow

3 Use of Morpher

3.1 New project creating

Menu command: **Project|New**

Hot key: **Ctrl+N**

Standard toolbar button: 

After this menu item is chosen the **New project** dialog will appear.

This dialog allows you to specify the initial and the final image which will be added then into a project. There are two areas for previewing of the selected images at the upper part of the dialog: the current area is indicated by blue frame. To select frames it is necessary to select the left or the right viewing area (the initial and the final frame accordingly) at the upper part of the dialog and then select necessary file from the list. The image of this file will appear in the current area.

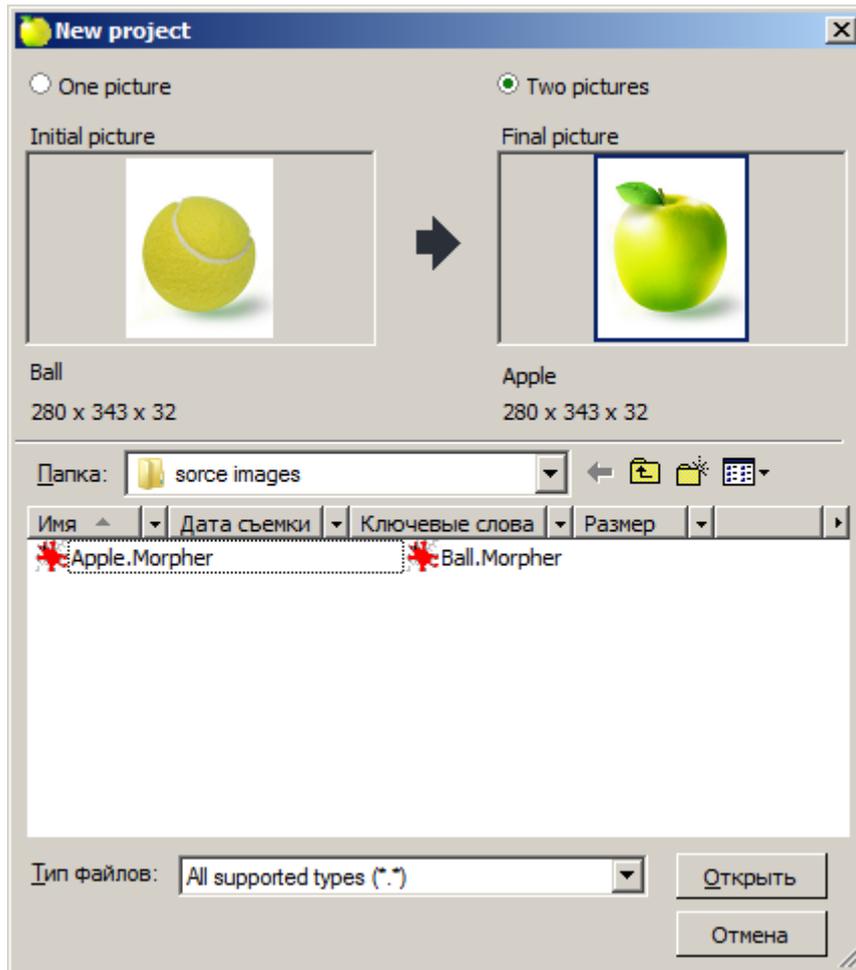


Figure 3.1. **New Project** dialog

If “One picture” flag is chosen, it will be necessary to select only one file with an image from the list. The final image is not required because it will be created during the work with the program.

Attention: By creating a new project with “Two pictures” flag, the sizes (in pixels) of selected images must be the same.

Home configuration of Morpher allows creating transition projects only with one source image.

3DMorpher configuration program allows creating the transition projects with one as well as with two source images.

3.2 Project saving

Menu command: **Project|Save**

Hot key: **Ctrl+S**

Standard toolbar button: 

Current project state can be saved into a file of *.Morpher* format. Saved project can be opened later and continue to work with.

To save a project with a new name, it is necessary to execute **Project|Save As** menu command and specify new name for a project.

3.3 Project opening

Menu command: **Project|Open**

Hot key: **Ctrl+O**

Standard toolbar button: 

Opens previously saved project of *.Morpher* format.

3.4 Contour adding

Menu command: **Contour|Add contour**

Hot key: **N**

Edit toolbar button: 

Contours are the main tools of morphing effect creating in Morpher program. In this case contour is a broken line consisted of points and pieces.

Each contour on original image corresponds to contours on final image. It means that due to the frames sequence generation each contour on original image will be smoothly transformed to the view of the final image contours.

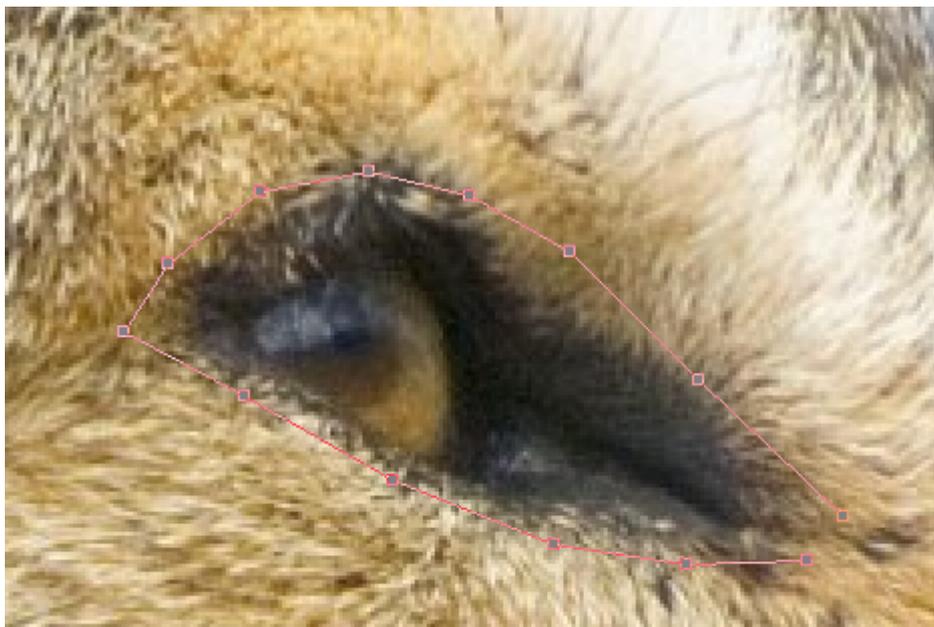


Figure 3.2. Adding a contour

To create a new contour it is necessary to select **Add contour** control element and click the left mouse button on the working area of the initial or final image at the place where a contour will be begun. To fix the next contour points it is necessary to click the left mouse button when cursor at the required position. Finish a contour by the right mouse button clicking.

3.5 Contour selecting

Menu command: **Contour|Select contour**

Edit toolbar button: 

Switch to the **Select contour** mode by the left mouse button clicking on a free part of the working areas.

This control element finishes all previous editing modes and allows selecting a new current contour from already existing contours.

3.6 Contour editing

Menu command: **Contour|Edit nodes**

Hot key: **E**

Edit toolbar button: 

Switch to the **Edit contour** mode by double left mouse button clicking on a contour.

Edition of a contour is necessary to specify the corresponding parts of an image. Switch to this mode by selecting the being edited contour and choose **Edit nodes** mode. To change contour point's positions, it is necessary to click the left-mouse button when cursor is under the pixel and move it to necessary position. Stop left-mouse clicking to finish the strong pixel moving.

Add a new strong pixel to the contour by double-left clicking when cursor is under the line which belonged to the contour.

Remove the strong pixel of the contour by double-left clicking on it.

3.7 Contour moving

Menu command: **Contour|Move contour**

Hot key: **M**

Edit toolbar button: 

Left mouse button clicking on a selected contour

This command allows moving whole contour without changing points' positions of the contour.

To exit from **Move contour** mode it is necessary to switch to the **Select contour** mode (see section 3.5).

3.8 Synchronous editing mode

Menu command: **Contour|Synchronous mode**

Hot key: **S**

Edit toolbar button 

Synchronous editing mode is convenient, for instance, in case a contour was specified incorrectly and need to be simultaneously edited on an initial image as well as on a final one.

If synchronous editing mode is selected, contour changes on one image working area will entail the same changes on the other image working area.

3.9 Frames sequence generation

Menu command: **Frames|Generate frames**

Hot keys: **Alt+G**

Frames window button: 

After this menu item is chosen **Frames generation** dialog will appear:

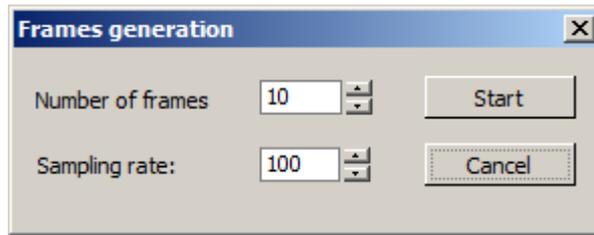


Figure 3.3. **Frames generation** dialog

In **Number of frames** field input necessary for generation number of frames. This number includes initial and final images.

In **Sampling rate** field input the number of pixels in image width. The higher the value of this parameter, the more correct the result. It is recommended to use this value by default.

To start generation process click **Start**. To close the dialog without image generation click **Cancel**.

3.10 Generated frames saving

Generated sequence of frames can be saved as single images in files.

Menu command: **Frames|Save frames**

Hot keys: **Ctrl+Shift+S**

Frames window button: 

Following file formats are supported:

Format	Description
bmp	Saving images without data compression. Images are saved without losses in their quality.
tiff	Saving images with unnoticeable compression. Images are saved almost without quality loss.
jpg	Image data are compressed with some losses in quality. The file is on average 40 times smaller than a bmp file.
gif	Series of frames is saved in Animated GIF format. Derived file is convenient to arrange on web sites.
avi	Series of frames is saved to a movie. Derived file has got better quality than Animated Gif
psd	Saving images in Photoshop format. Images are saved without losses in their quality.

3.11 Generated frames deleting

Menu command: **Frames|Delete frames**

Frames window button: 

Generated sequence of frames is deleted from the project (source images are not).

3.12 Slide-show

Menu command: **Mode|Slide-show**

Frames window button: 

All generated frames will be successively displayed on the screen. To stop the slide-show it is necessary to repeat **Frames|Slide-show** menu command or click the button  on **Frames** window again.

3.13 Changing the image scale

To zoom in/zoom out a current image's scale it is necessary to use the drop-down list at the standard toolbar: .

Scale value (in percents) is selected from the drop-down list or inputed manually.

4 Work with Morpher

4.1 Creation of a project with one source image

1. Launch Morpher program
2. Select the **Project|New** menu item
3. Set **One source image** flag and select an image in the **New project** dialog. Click **Open**.

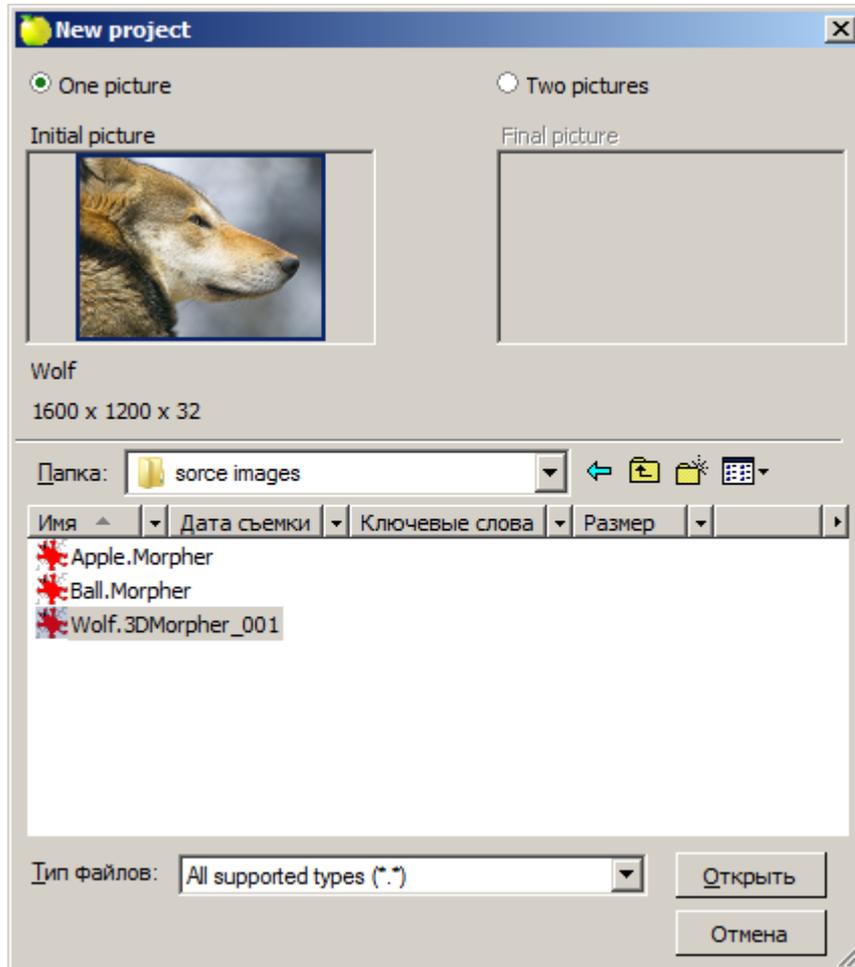


Figure 4.1. **New Project** dialog

4. Two equal images are displayed on the screen. The left image is the initial one which will not be changed and the right image is the final one, which view will be changed during the work.

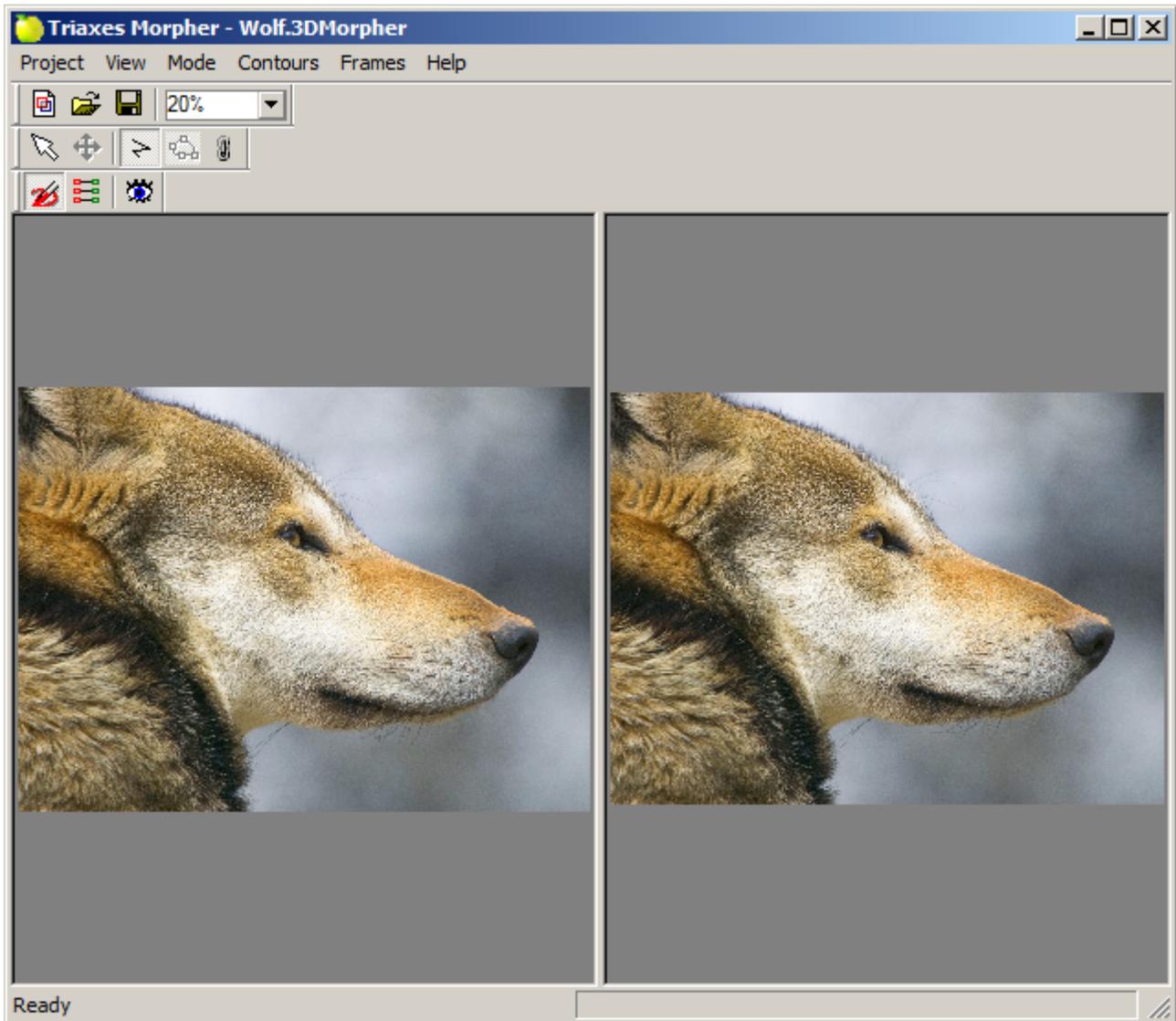


Figure 4.2. Working area.

5. In order to get morphing effect, it is necessary to create one or several transition contours. Use **Contour|New** menu item,  button on the **Edit** toolbar or hot key **N** to create a new contour.

To set a point belonged to a contour, it is necessary to click the left mouse button on the place where a new contour will be begun. Finish a contour by the right mouse button clicking. Contours can be added to an initial image as well as to a final one. To obtain the higher quality of the morphing effect and faster working speed it is recommended to set transition contours at all important parts of an image at that stage of work.

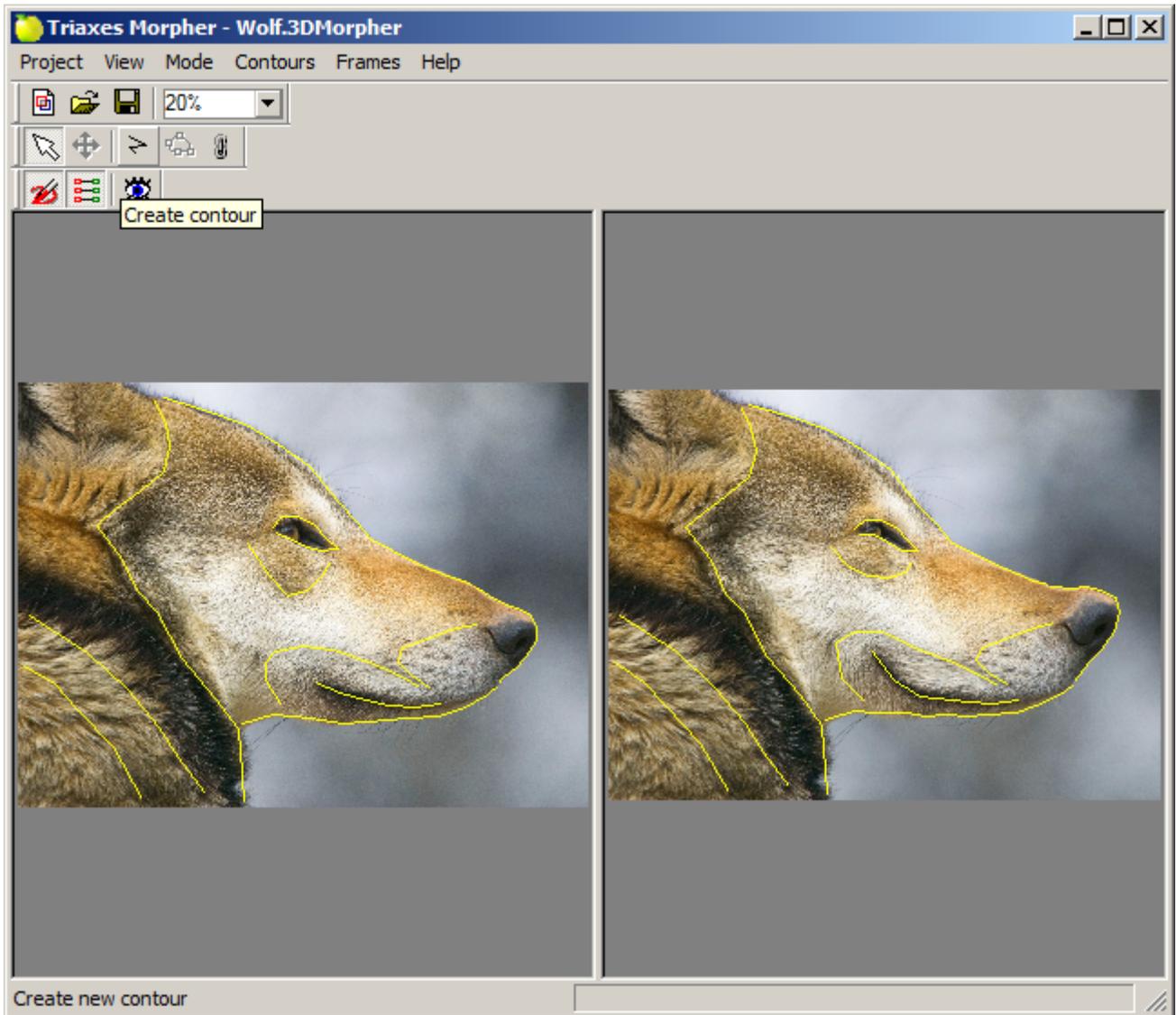


Figure 4.3. Working area. Contours setting

6. When one or several contours are created, it is necessary to change positions of transition contours (corresponding contours) on the final image. For that, use **Edit nodes** mode (**Contours|Edit nodes**) or **Move contour** mode (**Contours|Move contour**). Difference between positions of corresponding contours will cause deformation of an image due to the generation process.
7. To preview a deformed image before generation use **Frames|Generate last frame** menu item or simply click **Enter** button.

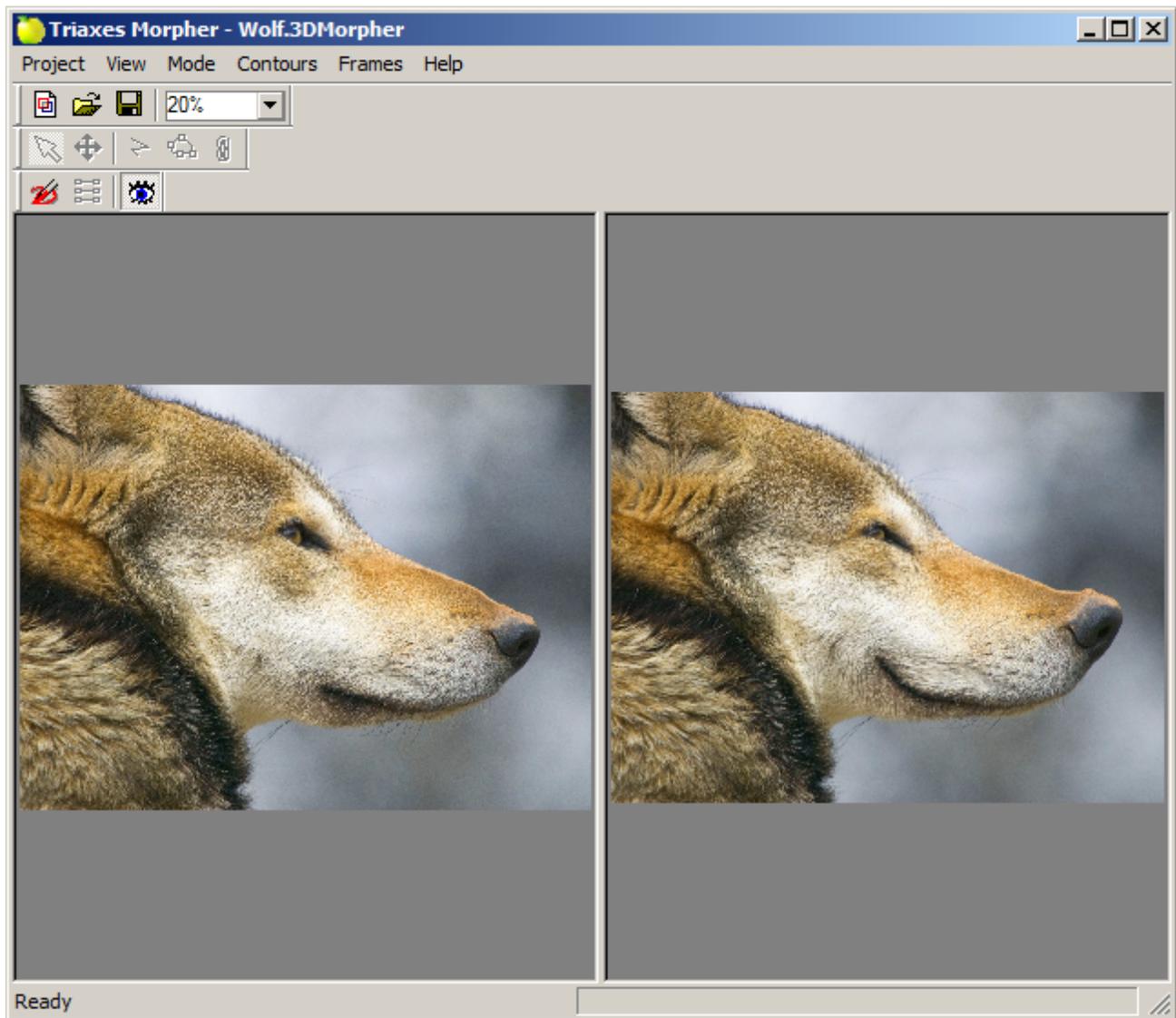


Figure 4.4. Working area. Deformed image preview

8. To define some details of the final image, repeat the actions starting from point 5. When desired result is reached, generate sequence of frames (**Frames|Generate frames**) and save them to your hard disk.

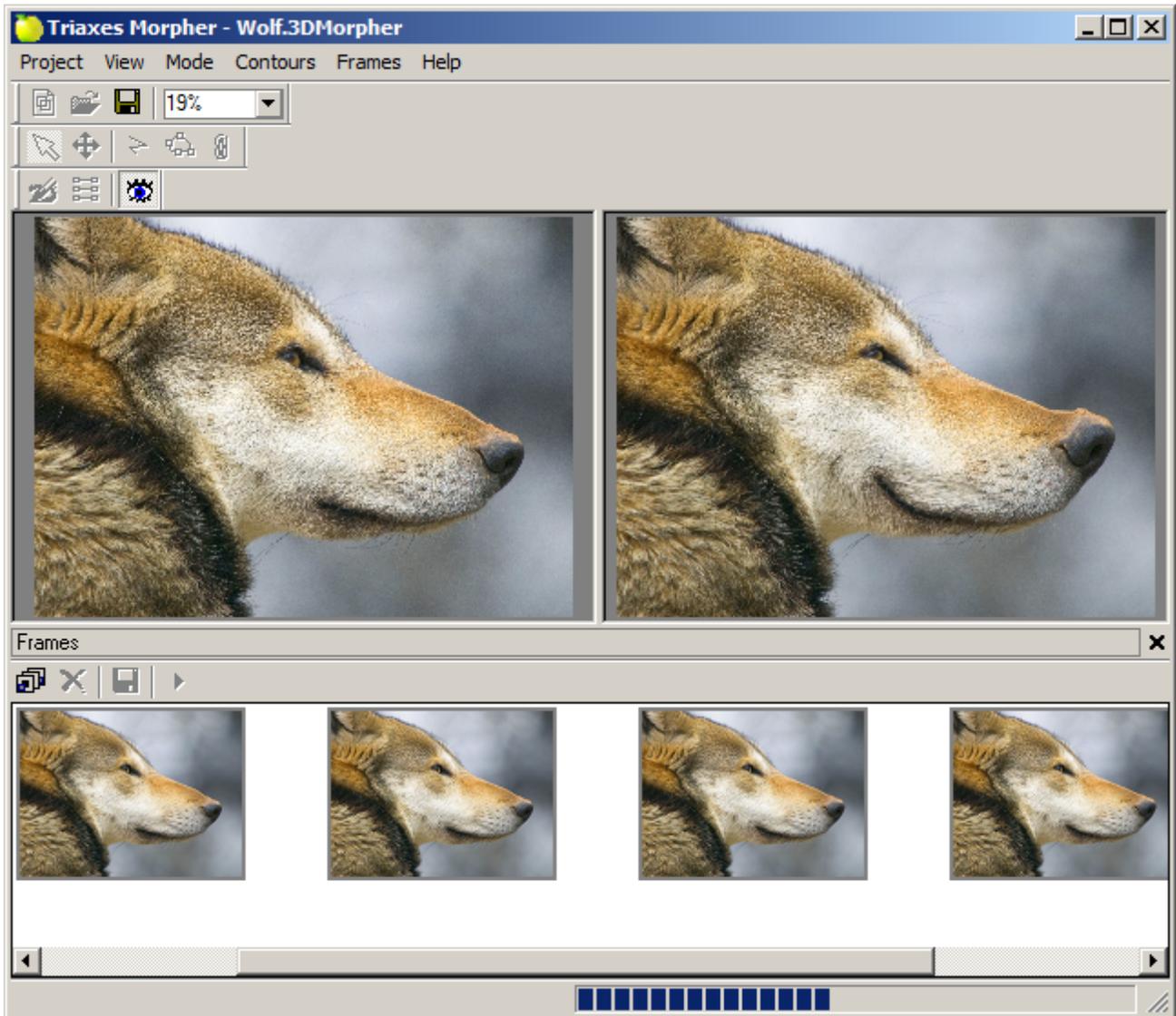


Figure 4.5. Generation of frames sequence

Generated frames sequence is shown in the following figure:



Figure 4.7. Generated frames sequence

The described above example of the morphing effect is included into the installation software package. After the program is installed, the project file can be found by the following path: "C:\Program Files\3D MasterKit CS\3DMorpher\Samples\Wolf.Morpher"

4.2 Creating a project with two source images

1. Launch Morpher program.
2. Select the **Project|New** menu item (**Ctrl+N**)
3. Set **Two source images** flag and select two images in the **New project** dialog. Click **Open**

Image in the left preview area of is the initial one, in the right – the final image. Both images must have the same size.

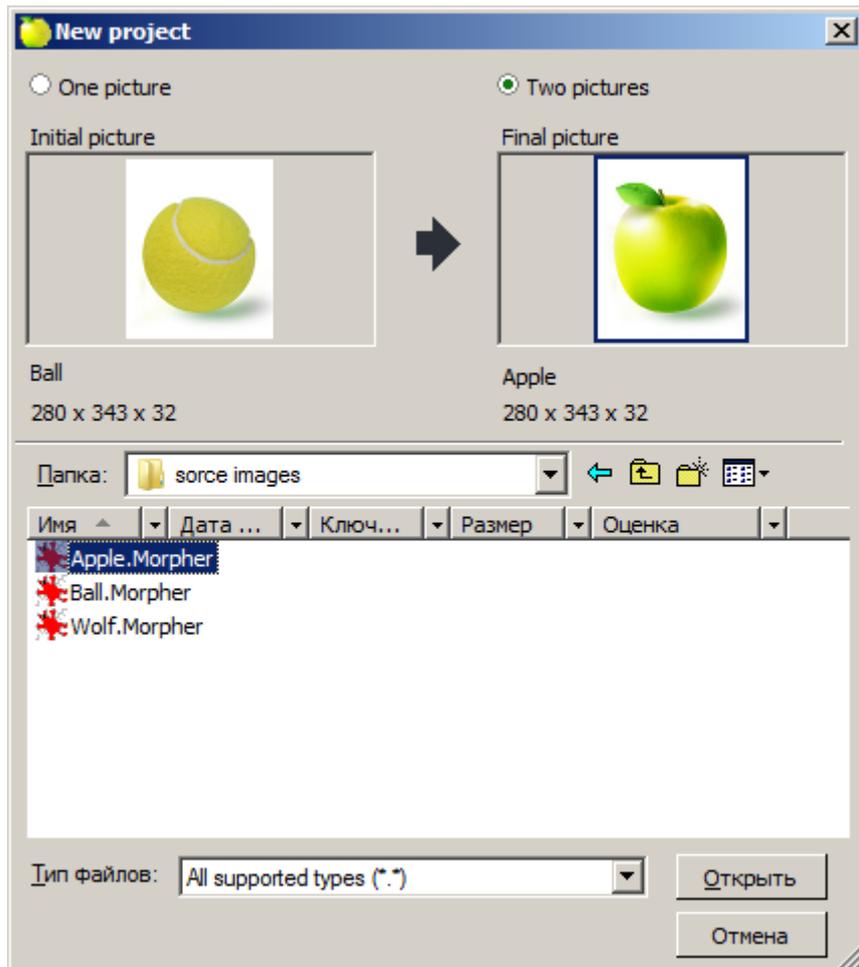


Figure 4.8. **New project** dialog. Source images opening

4. The working areas of images will contain an initial (from the left) and a final (from the right) images.

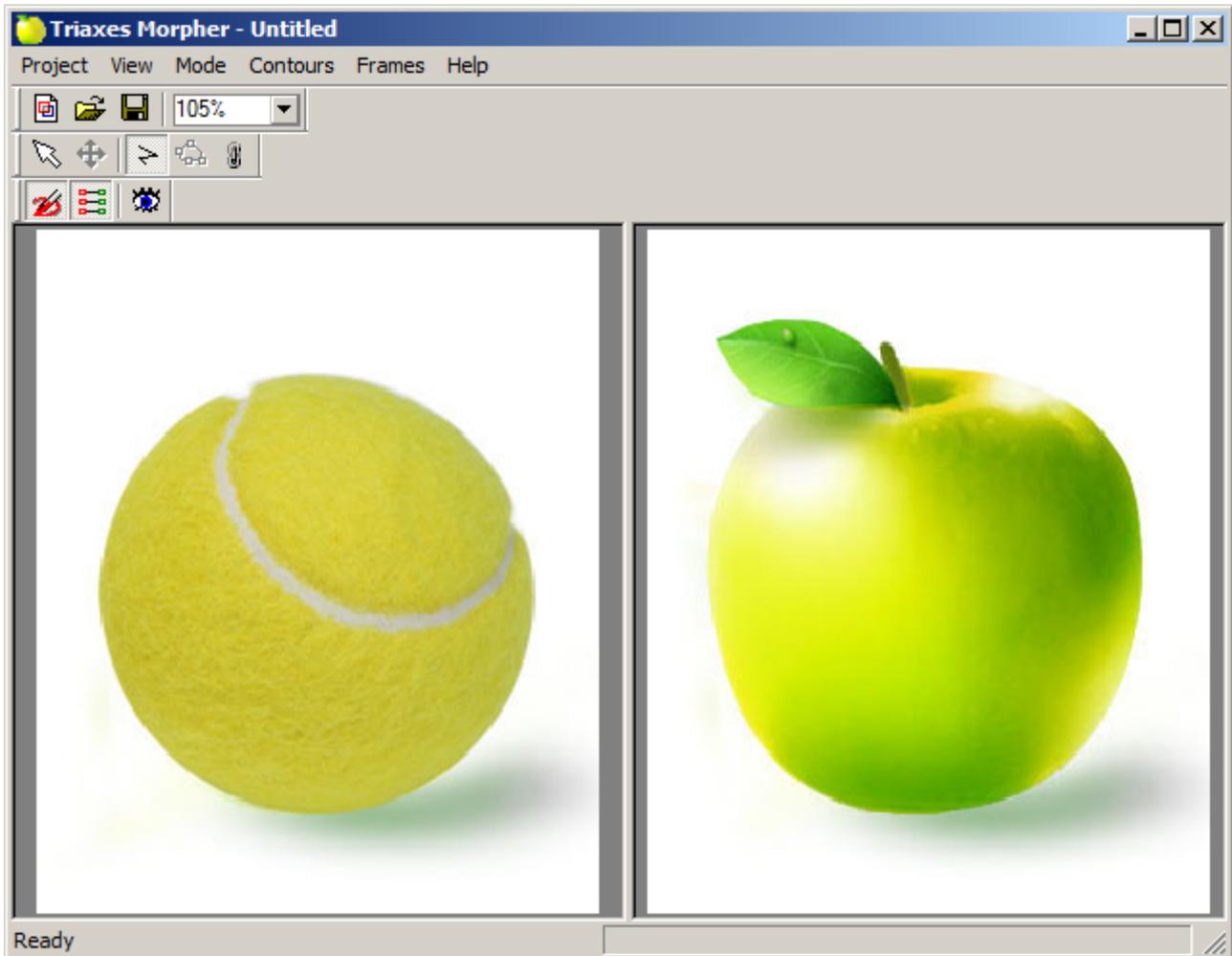


Figure 4.9. Working area. Initial and final images are displayed

5. In order to get morphing effect, it is necessary to create one or several transition contours. Use **Contour|New** menu item,  button on the **Edit** toolbar or hot key **N** to create a new contour.

To set a point belonged to a contour, it is necessary to click the left mouse button on the place where a new contour will be begun. Finish a contour by the right mouse button clicking. Contours can be added to an initial image as well as to a final one. To obtain the higher quality of the morphing effect and faster working speed it is recommended to set transition contours at all important parts of an image at that stage of work.

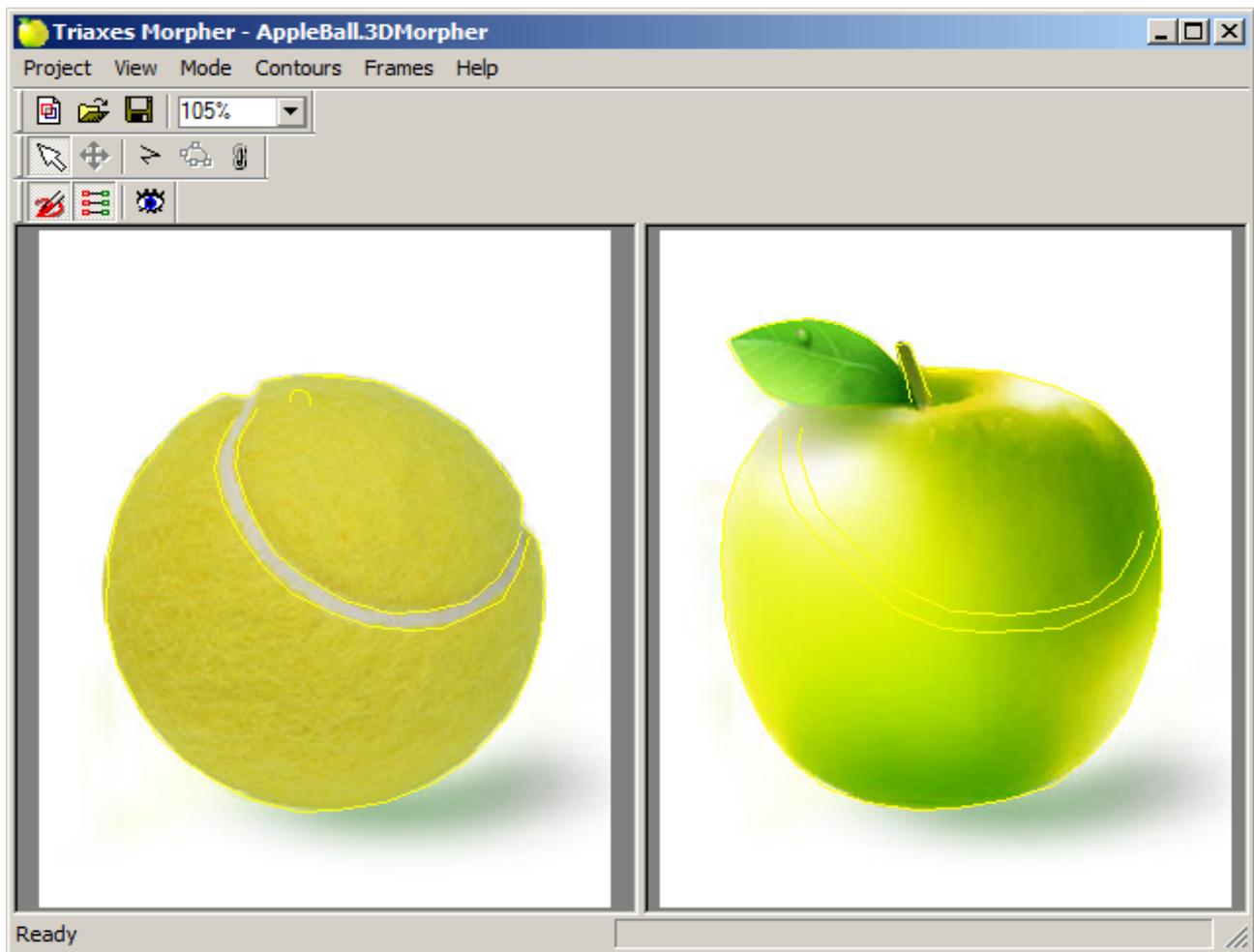


Figure 4.10. Working area. Contours setting

6. Now, it is necessary to edit derived corresponding contour. The final position, where a specified contour of the initial image must be moved is set while editing. To protect any parts of the image against deformation it is necessary to delineate them by a contour and then not to move neither at the initial nor at the final image.

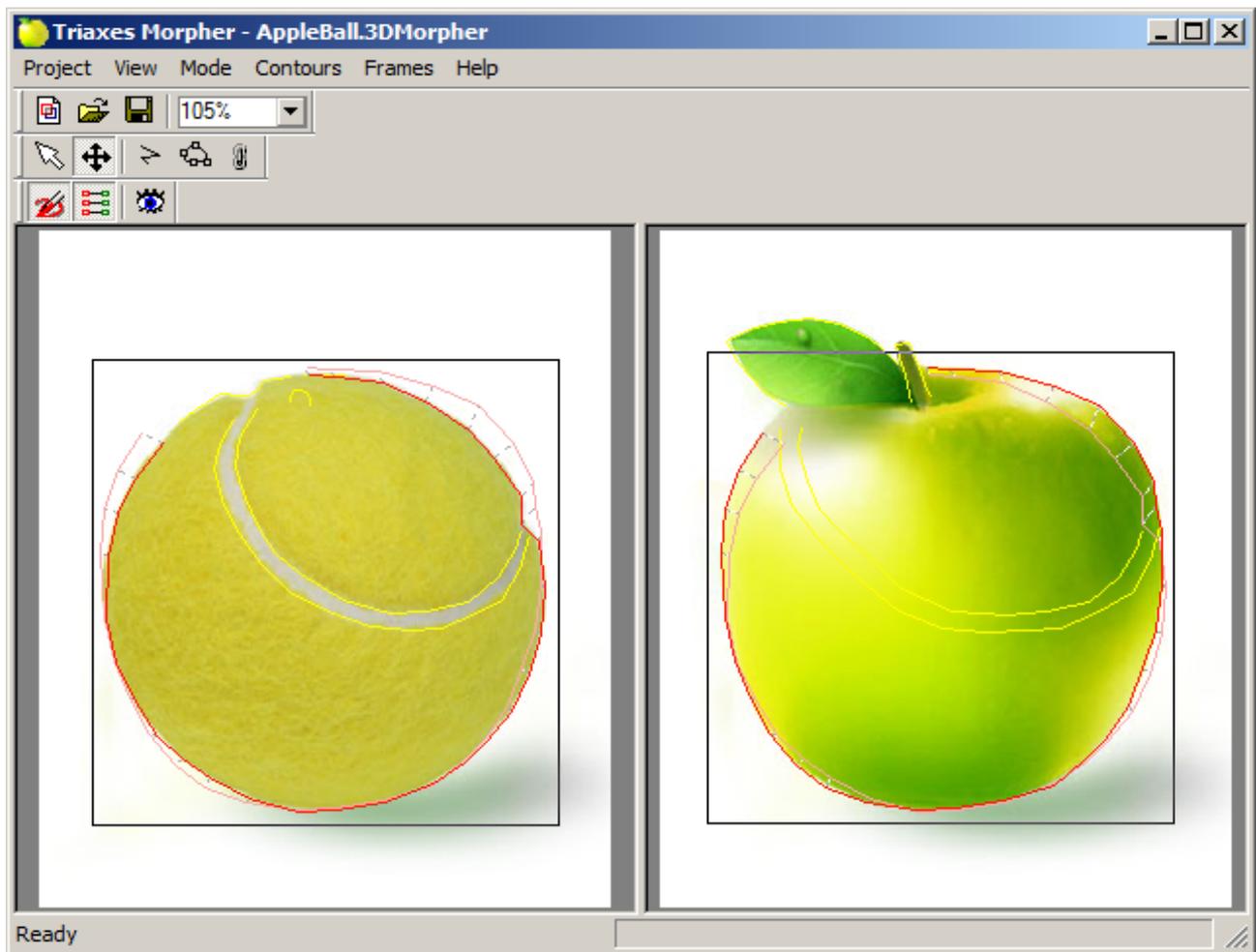


Figure 4.11. Working area. Contours setting (sequel)

7. You can start frames generation (**Frames|Generate frames**) and save the result (**Frames|Save fames**), when the main contours are set.

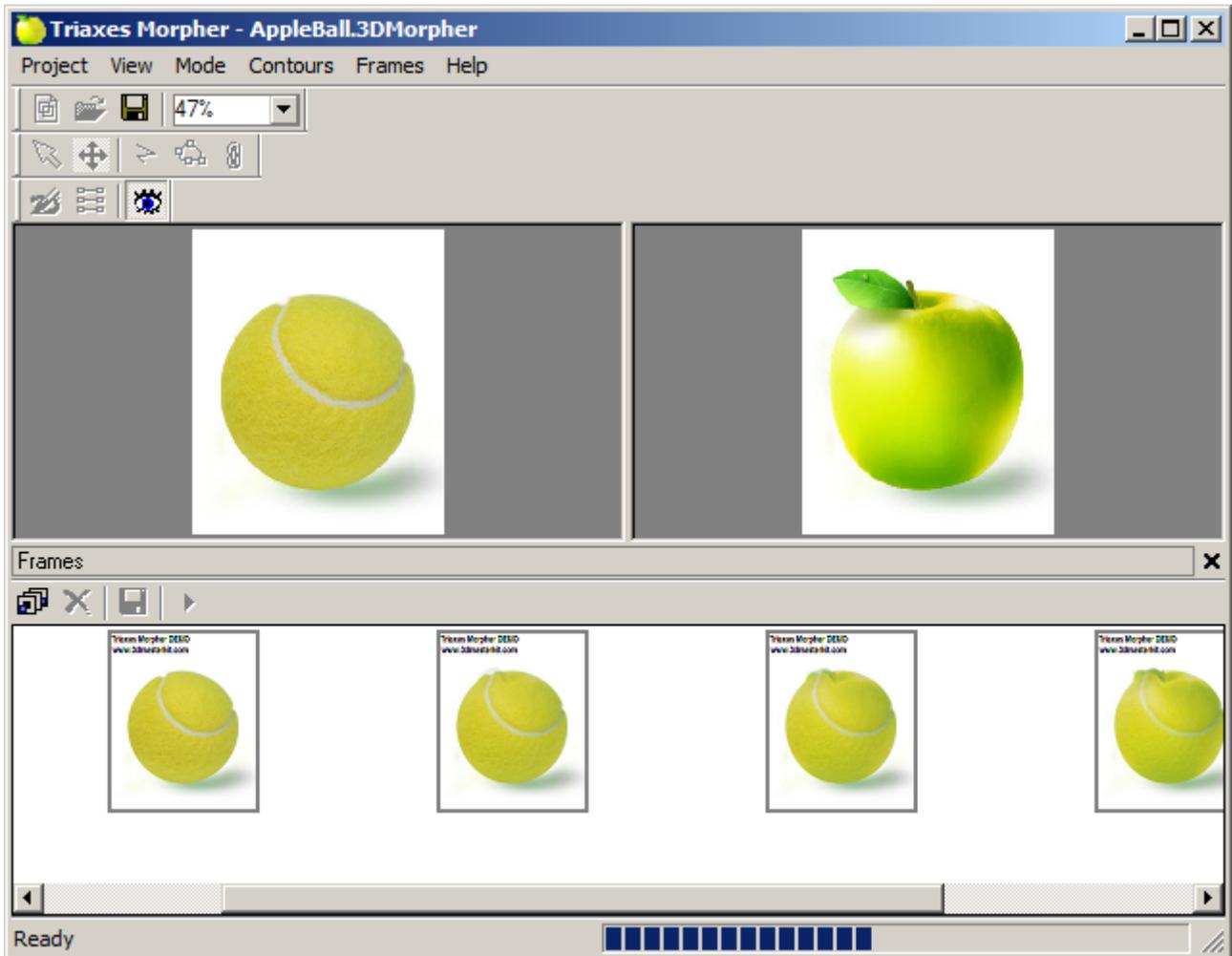


Figure 4.12. Generation of frames sequence

The generated frame sequence is shown in the following picture:



Figure 4.13. Generated frame sequence

The described above example of the morphing effect is included into the installation software package. After the program is installed, the project file can be found by the following path:

"C:\Program Files\Morpher\Samples\AppleBall.Morpher"