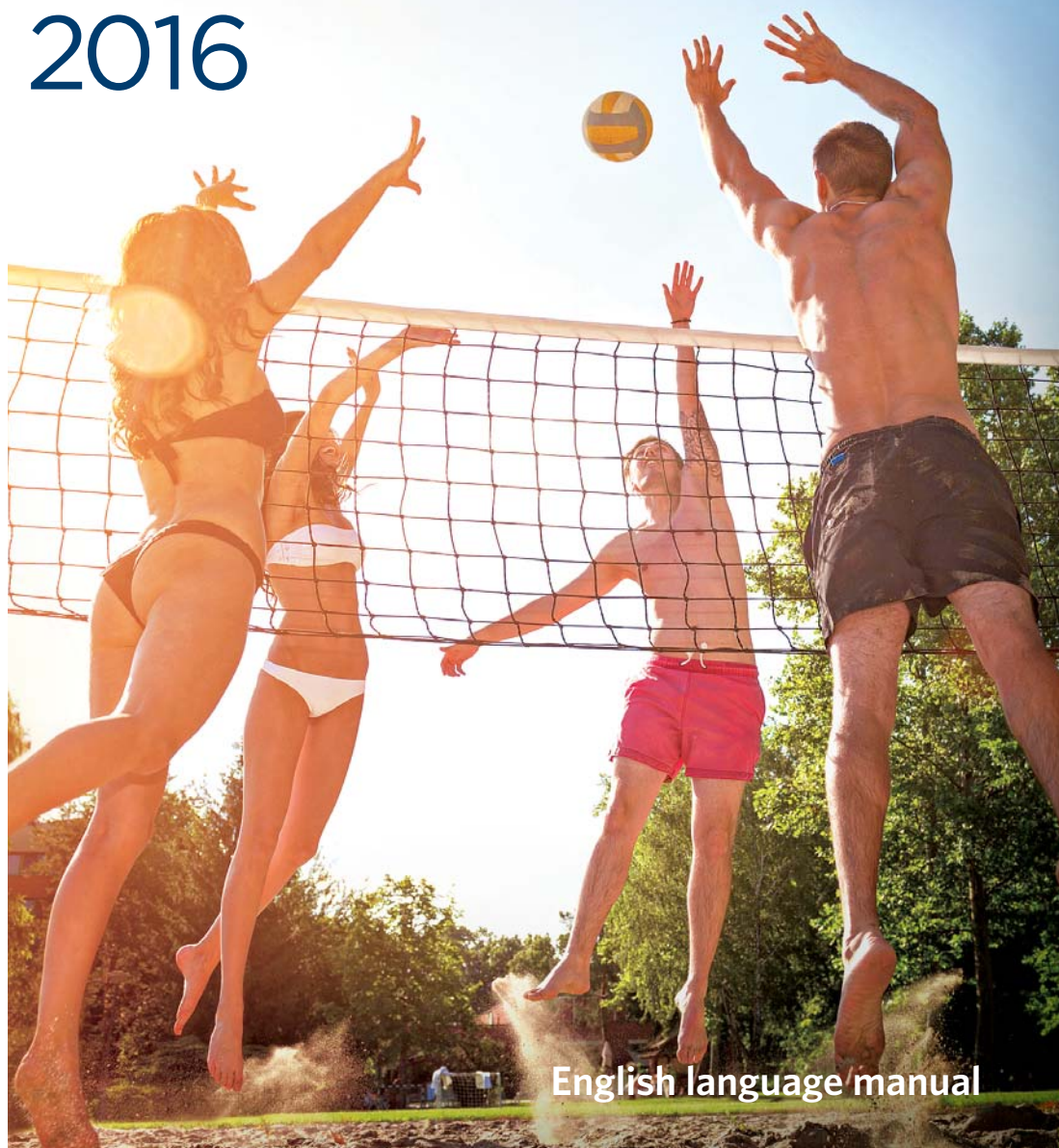


# MOVIE EDIT PRO

2016



English language manual

## Copyright

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Other named product names may be registered trademarks of their respective owners.

This product uses MAGIX patented technology (USP 6,518,492) and MAGIX patent pending technology.



# Preface

Congratulations! You have purchased a complete, fully-equipped, yet easy-to-use video studio!

The possibilities are endless - from quick holiday video cutting to demanding and detailed advanced film editing. MAGIX Movie Edit Pro 2016 also offers:

- Record and import all common video formats
- Video and audio content optimization
- Possibility of adding transitions, titles and effects
- Disc menu creation for DVD, Blu-ray Disc, and others
- Upload videos to the Internet, e.g. to YouTube or Facebook

Enjoy!

Your MAGIX team

**Tip regarding special program versions:** This documentation describes the full functionality of MAGIX Movie Edit Pro 2016. However, you may be using a restricted version of MAGIX Movie Edit Pro 2016, and full functionality may not be available.

## Video 360

If you received MAGIX Movie Edit Pro 2016 as part of the Video 360 bundle, in addition to the other software components you also have access to a range of extra services:

### **showfy**

As a MAGIX 360 Premium customer you get 25 GB of free online storage on the media sharing service showfy.

Register at [www.showfy.com](http://www.showfy.com) using your MAGIX login details and share your photos and videos (view page 263) with your PC, smartphone, tablet or Smart TV exclusively with the people who you want to see them.

### **Catooh**

Redeem your coupon at [www.catooh.de](http://www.catooh.de) using the coupon code [http://www.catooh.com/?l=de\\_DE\\_catooh](http://www.catooh.com/?l=de_DE_catooh) and select \$35 worth of MAGIX content.

### **Premium telephone support**

Use the Telephone Support coupon by contacting our MAGIX Technical Support Team (please refer to the section "Premium Telephone Support").

### **Tutorials & Webinars**

Tutorial newsletters and invitations to our online seminars will be sent to the email address that you entered during the purchase.

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# Customer Support

Dear MAGIX customer,

Our aim is to provide convenient, fast and solution-focused support. To this end, we offer a wide range of services:

- **Unlimited online support:**

As a registered MAGIX customer, you have unlimited access to web support offered by the MAGIX service portal [support.magix.net](http://support.magix.net) <http://support.magix.net>. You have access to an intelligent help wizard, high-quality FAQs, patches and user reports that are constantly updated. The only requirement for use is product registration on [www.magix.com](http://www.magix.com).

- **Online Community as an immediate support and exchange platform:**

The Online Community [www.magix.info](http://www.magix.info) is available for free to all registered MAGIX customers without any limitations. The community includes approx. 175,000 members and offers the opportunity to ask members questions concerning MAGIX products as well as use the search function in order to search for specific topics or answers. In addition to questions & answers, the knowledge pool includes a glossary, video tutorials and a discussion forum. The multiple experts, found round-the-clock on [www.magix.info](http://www.magix.info) guarantee quick answers, which sometimes come within minutes of a question being posted.

- **Premium Telephone Support:**

If you have received MAGIX Movie Edit Pro 2016 as part of the Video 360 package, you have access to Premium Telephone Support. During the Video 360 subscription period you have two tickets per year which can be redeemed using the coupon code.

The coupon code can be found in the Video 360 order confirmation.

Use the Telephone Support coupon by contacting our MAGIX Technical Support Team at the listed number and following the instructions:

Telephone:                      0203 3183666 (UK and IE Costumers)  
    1-775-562-0527 (US)

**AU and ZA Costumers:** Please contact the office that is nearest to your location. International call charges may apply\*.

Accessibility                      Monday - Friday (business days) 9:00 am - 4:00 pm

\* Please remember to add the appropriate country code for the country you are dialling, 001 for the US and 00 44 for the UK

**Important Notice:** The coupon code for Telephone Support can be used twice within one year after the conclusion of the contract. If the annual license is renewed, the

same coupon code can be used **again** twice within one year after conclusion of the contract renewal.

- **Email support for MAGIX products:**

For each new MAGIX product you will automatically receive 12 months free customer support by email.

- **Premium Email Support:**

For priority support, or if you want the support team to help with non-MAGIX related hardware problems you can purchase a premium email support ticket. Proceed as follows:

1. Go to the MAGIX customer support page at <http://support.magix.net>
2. Sign in using your login details.
3. Click on "Buy access code" in the navigation bar.  
Each ticket corresponds to a specific problem, it will remain valid until the problem has been solved. A ticket is not limited to a single email. Log in at <http://support.magix.net> and click on "Purchase access code". The ticket is not limited to one email, it corresponds to a specific problem and remains so until the problem has been solved.

**Please note:** In order to be able to use the Premium email support and free product email support online, you have to register your MAGIX product using the serial number provided. This can be found on the CD case of your installation disc or on the inside of the DVD box.

- **Additional telephone service:**

As well as the large number of free customer service offers, we also offer a fee-based telephone customer service.

Here you can find a summary of our technical support telephone numbers:

<http://support.magix.net/>

**Mail (Europe):** MAGIX Development Support, P.O. Box 20 09 14, 01194 Dresden, Germany

**Mail (North America):** MAGIX Customer Service, 1105 Terminal Way #302, Reno, NV 89502, USA

**Please make sure you have the following information at hand:**

- Program version
- Configuration details (operating system, processor, memory, hard drive, etc.), sound card configuration (type, driver)
- Information regarding other audio software installed

**MAGIX Sales Department**

You can reach the MAGIX Sales Department workdays for help with the following questions and problems:

- Orders
- Product consulting (pre-purchase)
- Upgrade requests
- Returns

## Europe

Monday - Friday, 09:00-16:00 GMT

**U.K.:** 0203 3189218

**Denmark:** 45 699 18763

**Sweden:** 46 852 500713

**Finland:** 35 89 42419023

**Norway:** 47 210 35843

## North America

9 am to 4 pm EST Mon-Fri

**Phone:** 1-305-722-5810



# System requirements

For Microsoft Windows 7 | 8 | 10

## Minimum system requirements

- Processor: Dual-core processor with 2.4 GHz
- RAM: 2 GB
- Graphics card: Onboard graphics card with a minimum screen resolution of 1280 x 1024
- Hard disk space: 2 GB free disk space for program installation
- Optical drive: DVD drive
- Internet connection: Required for activating and validating the program, as well as for some program features. Program requires registration.

## Recommended configuration for 4K/HD editing

- Processor: Quad-core processor with 2.8 GHz or better
- RAM: 8 GB
- Graphics card: Dedicated graphics card with 512 MB VRAM or more

## Uninstalling the program

If you would like to uninstall MAGIX Movie Edit Pro 2016, go to the Control Panel and select "Software" or "Programs and Features".

# Serial number

A serial number is included with each product. This serial number is required for software activation. Please store this number in a safe place.

What does a serial number do?

With a serial number your program license is clearly assigned to you and only you. This allows you to use the free customer service via email.

Serial numbers also help protect against software piracy. This makes it possible for us to offer our customers the most value for their money.

Where is the serial number located?

The serial number is on the insert card in the program box.

If you have purchased the download version, you will receive a confirmation email containing the serial number that you can use to activate the program. This will be sent immediately following purchase to the email address you provided.

When is the serial number needed?

The serial number is required when you start the program the first time, as well as for program registration.

# Introduction

## What is MAGIX Movie Edit Pro 2016?

MAGIX Movie Edit Pro 2016 is a complete all-in-one movie studio for your PC. With MAGIX Movie Edit Pro 2016 you can easily transfer your recordings to your computer and then, once you have improved and enriched them, burn them onto DVD, AVCHD or Blu-ray™ – perfect for theater-quality presentation on TV, screen, or monitor.

Videos, photos, as well as additional audio and video material can be transferred from various devices to the PC. Long movies can be separated into chapters or scenes automatically. You can also do the opposite and automatically combine individual recordings to make a single movie.

Add music, theater-quality transitions, text and selected effects to your own movies with a mouse-click. The easy-to-use interface, advanced technology and handy wizards guarantee perfect results at lightning speed!

Once your video is finished, you can use it in different ways: transfer it back onto the tape or to your camcorder. You can burn it to disc and watch it, for example, on TV. Or, you can upload your video to Internet platforms such as YouTube, Facebook or your own personal MAGIX Online Album.

**Tip regarding special program versions:** This documentation describes the full functionality of MAGIX Movie Edit Pro 2016. However, you may be using a restricted version of MAGIX Movie Edit Pro 2016, and full functionality may not be available.

## Additional programs

On the MAGIX website you'll find many additional programs you can use with MAGIX Movie Edit Pro 2016. Have a look at the sections "Video" > "Additional Products" and "Free Download".

## Features

**Tip regarding special program versions:** This documentation describes the full functionality of MAGIX Movie Edit Pro 2016. However, you may be using a restricted version of MAGIX Movie Edit Pro 2016, and full functionality may not be available.

## Recording

MAGIX Movie Edit Pro 2016 features the following recording options:

- **AVCHD camera**
- **HDV cameras:** HDV1 and HDV2 camcorders
- **DV cameras:** Mini DV camcorders or DV video recorders
- **Video:** Analog TV, video input, VHS recorders, webcams
- **Audio:** Microphones, cassette recorders, MiniDisc players, turntables
- **Screen** (Plus/Premium version): PC monitor.
- **Single frame:** Single and series images from webcams, video recorders, video cameras, or TV cards

Analog capture requires capture cards compatible with DirectShow. DV recording take place via FireWire.

## Supported formats

### Import:

**Video:** (DV-)AVI, HEVC/H.265\*, M(2)TS, MJPEG, MKV, MOV, MPEG-1/2/4, MXV, VOB, WMV(HD)

**Audio:** MIDI, MP3, OGG, Surround-Sound/5.1, WAV, WMA

**Image:** BMP, GIF, JPEG, TGA, TIF

### Export:

**Video:** AVCHD disc, Blu-ray Disc, DVD

**Audio:** WAV, MP3

**Image:** JPEG, BMP

**Note:** This program requires an Internet connection for many of its functions. MP3 export requires installation of Windows Media Player Version 10 or higher.

The Quicktime Library must be installed for Quicktime files (\*.mov).

\*The codec requires a fee-based activation the first time you import or export HEVC material.

## Editing

- Picture optimization: Color improvement (RGB,saturation), sharpness (focus and feathering), brightness regulator (brightness, contrast), anti-flicker filter.
- Sound optimization: The equalizer allows you to manipulate the frequency spectrum – perfect for cleaning-up muffled dialog. The compressor is a dynamic volume regulator. The StereoFX processor controls the position of the sound within the stereo panorama. The denoiser and dehisser are professional noise reduction tools for removing noise and hisses.
- Video effects: For example, creative filters, distortion, video mix (ChromaKey), movement effects (e.g. camera/zoom or rotation), cropping, picture-in-picture collages, video effect plug-in support.
- Automatic scene detection
- Slideshow Maker turns drab photo collages into spectacular multimedia shows.
- MAGIX Soundtrack Maker offers a huge selection of fitting sounds for your background music.

## Burnable disc formats

You will find the following burning options in the "Burn" area:

- DVD
- Blu-Ray disc
- AVCHD disc (on DVD and Blu-ray Discs)

In the "File" menu you can make and burn backup copies.

## Multimedia editable disc menus

Included are many disc menu templates which offer selection options for movies and chapters on the screen. Many of these are also available in 16:9 format. They can be included during burning and give the disc a professional appearance.

Every menu template may be customized with personal photos, thematic animations, 3D captions, sound, intro videos, etc.

## Also in the Plus/Premium version

### Full Stereo3D support

- Full support for stereoscopic recordings
- Full import functions for many 3D camera models
- Editing of own 3D recordings made, for example, with two cameras
- Real 3D transitions and titles for 3D video projects
- Preview and output to all conventional 3D display devices
- Output in all formats (DVD, Blu-ray, file, YouTube®, etc.)

### More extras

- 99 tracks instead of 32
- Multicam editing for 2 cameras
- Secondary color correction
- Movie templates
- 5.1 surround sound
- Advanced audio editing (Audio Mastering Suite)
- Travel route animation
- 360° panorama viewer
- Align snap marker with transients
- Effect transitions etc.

## Quick start

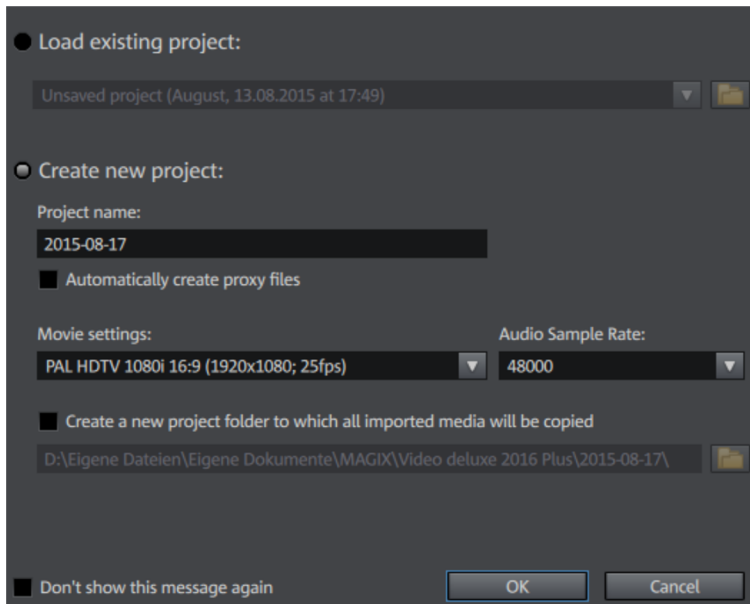
This chapter explains the basic functions of MAGIX Movie Edit Pro 2016 with a step-by-step introduction. A systematic description of all program functions can be found in the following chapters.

**Tip:** Use the online tutorial videos that can be accessed in the "Help" menu. This feature requires an Internet connection.

The program keyboard shortcuts (view page 320) for commonly used processes and functions are also very helpful.

## Program start

Once you have installed MAGIX Movie Edit Pro 2016, start the program from the Windows start menu. The following dialog opens:



Here you can decide if you want to "Load an existing project" for further editing and burning to disc or if you want to "Create a new project".

You can "Automatically create proxy files" in the Plus/Premium version. The original material is already converted to a suitable target format in advance, which can (view page 213) save a lot of time when editing and exporting when finished.



In "Movie settings" you can set up the target format for your movie you want to create (display norm, resolution, frame rate). This setting has no effect on the internal processing quality and can be changed at any time by going to "File" > "Settings" > "Movie" (view page 69).

If you select the option "Add new project folder", all of the files for that film will be saved as copies in this folder and used for editing. This option is designed for cases where original material is divided between various media, e.g. hard drives, USB flash drives, memory cards. The internal hard drive is the best option for working on projects in MAGIX Movie Edit Pro 2016 because it allows faster access to files compared to external storage devices. If files stored on external devices are used it can lead to delays and stutters during project editing. You can create a backup of the project folder at a later time.

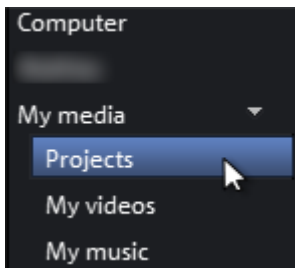
**Note:** If your hard drive is partitioned, you should not save your project folder in C, i.e. not on the drive with the Windows operating system. MAGIX Movie Edit Pro 2016 requires a lot of space.

## Import video

In the following we assume that you want to import an AVCHD recording into the program.

**Tip:** Pay close attention to which folders you use to save your files and footage so you can find them again easily to import and edit them in MAGIX Movie Edit Pro 2016. Do not save files under C:\Windows\ or in any of the program folders! Give your files and folders short, concise names.

If you don't have such a recording at hand now, you can load material from the hard disk in order to try out the MAGIX Movie Edit Pro 2016 workflow. We recommend using the included demo project for this:



1. In the Media Pool, click the button "My Media > Projects".
2. Next, open the "\_Demo" folder by double clicking and then load the MVP movie files. ("\_Demo.MVP") by double clicking.

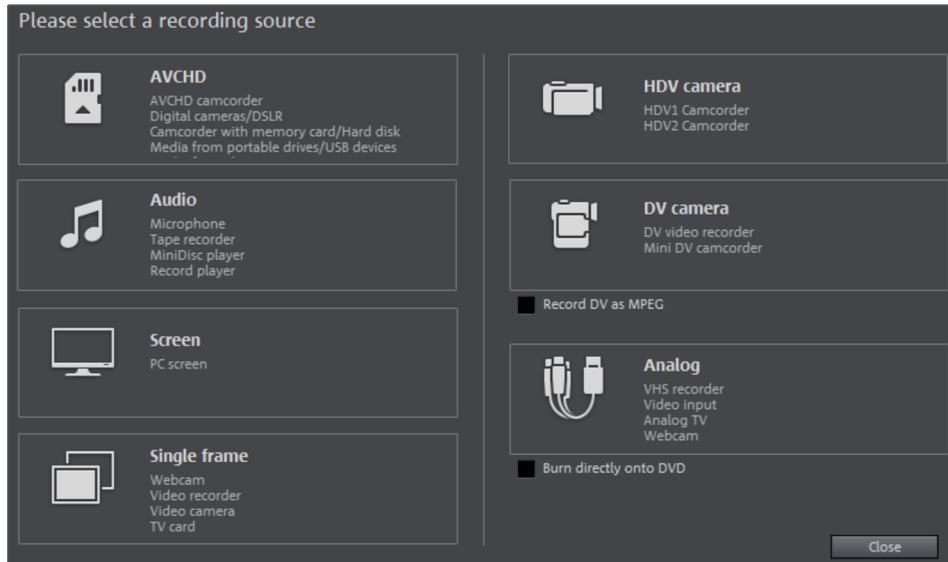
**Note:** If you import media to a project, MAGIX Movie Edit Pro 2016 must always have access to these files. This means that you cannot rename these files, e. g. in Windows Explorer or Media Pool, if they have already been imported because MAGIX Movie Edit Pro 2016 won't be able to find them. Renaming or relocating files can lead to error messages and you will have to specify the files and folders again. For larger projects this can become very time-consuming.

## Insert AVCHD material

1. Connect your AVCHD storage devices (camera, USB stick, SD card and others) to your PC. You may first have to turn your camera on.
2. Click on the red button underneath the preview monitor.



The recording selection dialog will open:



3. Select "AVCHD" from the recording dialog.  
The AVCHD import wizard will open.
4. Select your connected storage devices as "video source".  
A file list will appear.
5. In the file list, select all the recordings that you have imported from the device.
6. You can preview all your recordings using the preview monitor in the middle of the dialog in order to decide if they are suitable for your movie.
7. After selecting all videos, select in "Import options" whether the recordings should be directly placed into your movie project or simply copied to your

computer's hard drive (select the location under "Save in folder"). You can also automatically delete your recordings after import.

## Play movie

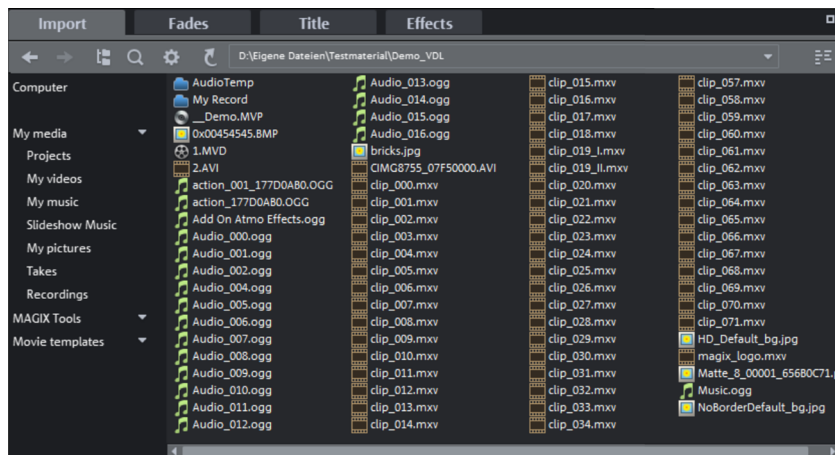
- To play the recording ( or the demo project), click on the play button on the transport control below the preview monitor.



During playback a vertical line will move across the project window. This is the playback marker that displays the current position. It can be set directly with a mouse click in order to jump to certain positions.

**Tip:** An even easier way to control playback is by pressing the space bar on your keyboard.

## Media Pool



The Media Pool can be used to access and load media files of all kinds: videos, photos, MP3 files, audio CD tracks, transitions, effects and Internet media, etc.

- Search your computer for media you would like to use. The navigation buttons for the various drives and folders are located in "Import" above the main display area.

If you hover the cursor over a media file, three icons for the options (Preview, Trim, Import) will appear.



**Preview:** Click on the playback icon to play back the medium: Video and image files are displayed in the preview monitor, and audio files through the sound card. There is also only a preview for the provided templates.



**Trim:** If you only want to import a certain part of a video clip into your project, click on the Trim icon with the curved brackets. The video clip will then appear in the preview monitor. Now use the brackets to mark the area you want to import on the timeline. Finally drag & drop the video from the preview monitor into the project by clicking on it and holding down the mouse button. Only the area previously marked by the brackets will be imported as a video object.



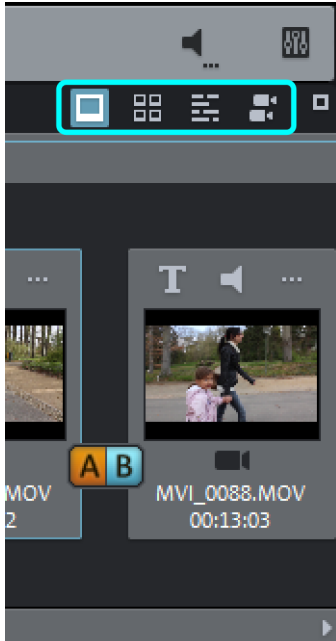
**Import:** Click on the Import icon to load the selected medium to the project window.

**Tip:** You can create a link to your personal media folder in order to access the media it contains in a mouse click. You can do this by right-clicking on one of the entries and selecting "Create link". Select the media folder and click "OK" to confirm.

**Note:** All links are automatically deleted if the function "Reset standard program settings" is used.

## Display modes

With the help of the button in the center of the toolbar, you can switch between the "Timeline-", "Storyboard" and "Scene overview" modes. Another button for the multicam mode is available in the Plus/Premium version.



**Storyboard mode** (view page 29) (first button) is the preset view. This view offers an easy, streamlined interface to simplify the editing process. All scenes from your film are listed sequentially in the "Storyboard" mode. Every scene is displayed with a preview picture in the storyboard.

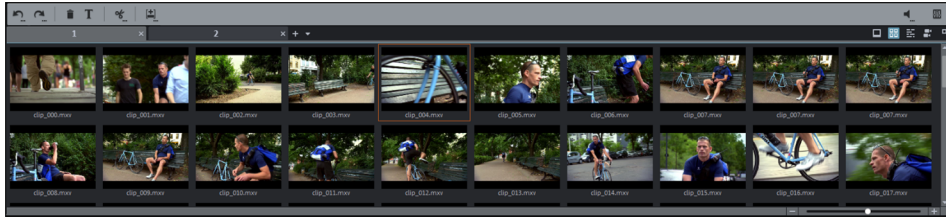
The **scene overview** (view page 28) (second button) provides a scaleable overview of the scenes. You can use this to comfortably view, sort, and delete unnecessary scenes.

In **Timeline-mode** (view page 30) (third button), your movies are displayed as "objects" on the "timeline". This means: The longer the object, the longer the corresponding film.

You can display all modes in full screen using the button at the top right.

**Multicam mode** is found under the fourth button in the Plus/Premium version of MAGIX Movie Edit Pro 2016. Multicam editing enables easy cutting of various recordings of the same scene from different camera perspectives.

## Overview Mode



The Scene overview allows you to manage and categorize scenes. All scenes are listed one after the other (in multiple lines, like in a text program) and can be copied, cut, moved, deleted and inserted.

"Overview" mode does not indicate start, playback, or end markers. The scene which is currently being played has a frame around it.

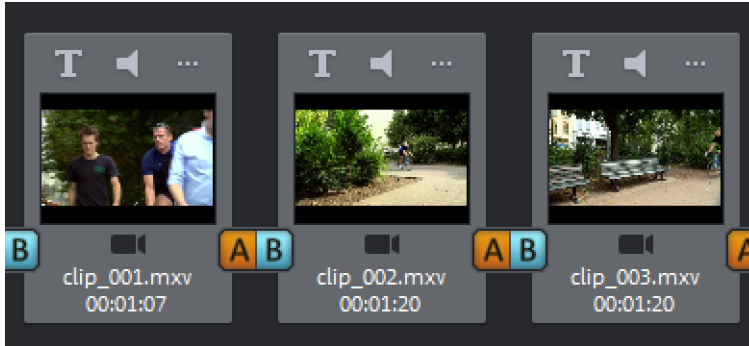


The zoom slider enables the view to be enlarged or reduced.

This controller also specifies how many scenes are displayed. The smaller the preview pictures, the more will fit onto the overview.

**Maximize:** Use this button to maximize the scene overview to fullscreen mode.

## Storyboard mode



"Storyboard" mode represents all scenes in linear sequence on the storyboard. Each scene offers the following editing options:



**Add title and text:** Titles and text can be added to any film. Click on the "T" button, enter your text directly in the program monitor and select from different animations (try movement from bottom to top for a classic end credits effect).



**Set volume:** The volume in each scene can be set via the loudspeaker button.



**Effects menu:** This switch accesses a menu with different editing functions like scene recognition, image stabilization, or the trimmer dialogs. The hissing on the track can be minimized by selecting "Audio cleaning".

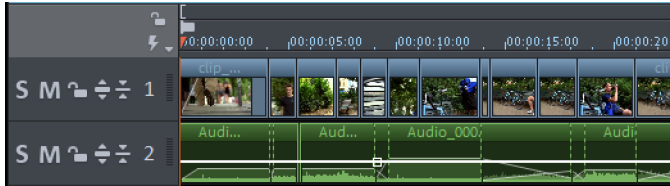


**Transitions:** Click on the large button between the scenes and select a scene transition.



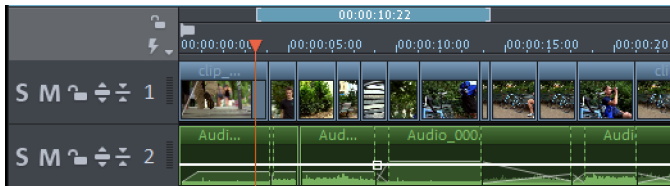
**Rotate image (only with image files):** If an image or photo is on its side or upside down, click on this button. The photo will rotate 90 degrees.

## Timeline mode



All advanced editing functions should be undertaken in "Timeline" mode. Your movies and scenes are shown here: The longer the object in the track, the longer the corresponding movie.

**Playback range:** Clicking in the range bar above the first track lets you define start markers, i.e. the starting point of the playback range. If you right click, the end marker will appear to indicate the end point of the playback range. The length of the playback area is shown in the center of the section display.



- When the end marker has been reached, the playback cursor jumps back to the start marker and begins playing everything again as a loop.
- The entire playback range can be moved using the mouse by clicking on the bar in the middle while holding down the Ctrl key and dragging it. The in and out points can be moved with the mouse. Left clicking positions the in point, and the right mouse button sets the out point. The project window playback range above the first track is linked to the playback range of the preview monitor. They cannot be changed independent of each other.
- To move the start and end markers to the beginning or the end of the film again, click "Optimize movie view" in the "Window" menu.



**Handles:** All objects can be shortened by moving the mouse to one of the lower corners of the object until the mouse pointer turns into a double arrow. You can now shorten the object as much as you like. At the top corners of every object you will find two fade handles that can be adjusted to fade an object in or out. The handle at the top center can be used to adjust the volume of audio objects and the transparency of video objects.



**Object selection:** For advanced effects editing, the objects must be selected first. Individual objects can be selected with the mouse. Objects will change color to show that they have been selected. Multiple objects can be selected by holding down the Shift key. If you click next to an object, you can drag out a rectangle with the mouse button pressed down. All objects contained in this rectangle will be selected.

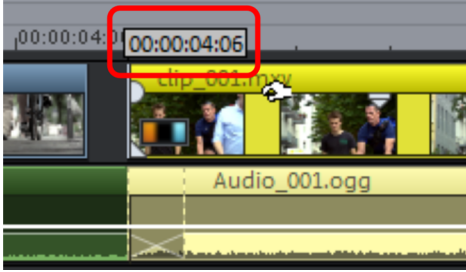
## Grid

The project window features a frame-exact snap grid. This ensures that video and image objects snap exactly to the borders of a frame.

The step size depends on the frame rate specified in the movie settings ("File > Settings > Movie"). Choose between Europe's conventional frame rate for PAL (25 frames per second) and America's and Japan's conventional frame rate NTSC (29.97 frames per second) or any other manually set frame rate.



When moving an object, the position display indicates at which frame the first image of the object is shown.



The position is displayed in the form of a tooltip when moving the object.

This information is displayed in the form "Hours:Minutes:Seconds:Frame".

In addition to the constantly active frame grid, an object grid can also be activated. This ensures that two consecutive objects will seamlessly snap together even if they are on different tracks. This avoids undesired gaps or overlaps.



The object grid can be activated/deactivated using the magnet symbol in the lower toolbar.

## Removing unusable scenes

One of the most important steps during import of your footage is cutting out unusable scenes from the material. There are two options in this case:

- **Option 1:** First, the complete material is loaded into your project and the unusable scenes are cut out.
- **Option 2:** You can cut the material already in the Media Pool, i.e. BEFORE you import it, and then proceed to import only the scenes you need. This process is recommended for long movies with a lot of editing.

## Cut videos in the project

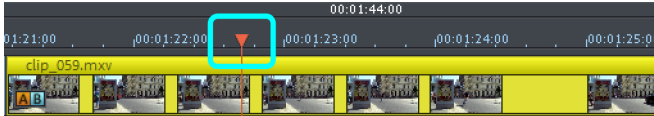
Let's assume that you have already imported your film material into a project and would now like to edit it.

1. Play your video by clicking on the up arrow on your keyboard.
2. Pause playback at the position where the scene is found by pressing the downward arrow. The playback marker stays near the start of the scene to be removed.

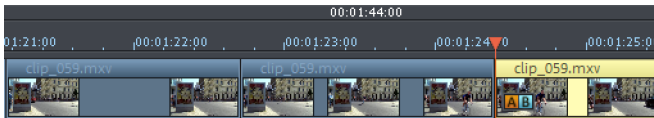
**Note:** You can also use the space bar or the play button on the transport bar to start and stop playback. However, in order to move the playback marker to the position where you stop the playback, you must first go to program settings (File > Settings > Program) in the "Playback" tab under "Space bar behavior" and select the "Spacebar stops at current playback position" function.

**Tip:** In case of long films or to speed up search, you can also fast forward the video following the action on the preview monitor. To do so, pull the playback marker across the timeline (but not too fast!) while holding down the mouse key.

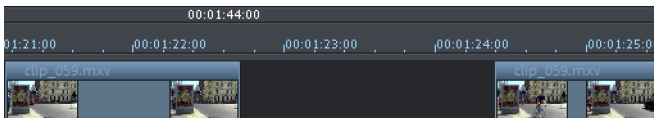
3. Set the playback marker exactly at the start of the unusable material. The zoom function is recommended to get a better view of longer videos (the +/- buttons in the bottom right corner).



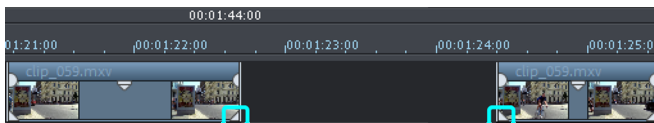
4. Press "T" on the keyboard. This will split the current scene into two sections at the position of the playback marker.
5. Repeat these steps for the end of the unusable scene. Find the end of the unusable scene, place the play marker as close as possible to the end point, and then press the "T" key on the keyboard again.



6. Now you have "isolated" the unusable scene and may delete it from the movie using the "Del" key on the keyboard. Before this, the scene must be selected by clicking it with the mouse.



7. If you didn't work accurately during cutting, then don't worry; you can use the object handles to stretch or shorten the remaining objects to recover or exclude material from the deleted section.



8. After deletion a gap will appear in the film sequence at the position of the removed material. How do you remove gaps from the movie? It's easy: Simply drag the later scenes up to the earlier scenes until they "dock" with each other. Remember to drag all objects that are further behind, otherwise the gap will just be passed on down the line. To pull up later objects, use the "All tracks" mouse mode, since this automatically takes all the objects found later on the timeline along with the object being pulled.



**Note:** If your project has an audio track in addition to the image track, it is usually necessary to cut audio and video tracks synchronously. After import from the camera, video and sound tracks are automatically grouped, which is why all cutting and moving actions have an effect on video and sound tracks simultaneously. However, if you have added a separate sound track which has not yet been grouped with the video sequence, then you should group them before you start editing.



To do this, select the video object and the audio object with "Ctrl" + click, and in the "Edit" menu select the "Group" option (or click the Group Tool).

Go ahead and experiment with the cutting functions. When cutting and performing any other editing functions, the original material on your hard drive remains unchanged.

## Importing individual scenes from longer movies

If you have saved a longer video as a file on your hard disk and only want to use a section of it for your project, you can proceed as follows:

1. Select the file in the Media Pool and click on the Trim icon in the middle of the features that appear above the file.

Now you can play the selected file in the Media Pool using the transport control.

2. Find the starting point of the range to be imported. Position the play marker above the transport control at the starting position of the range.
3. Click on the "Set In-Point" button (Shortcut: I).



The start of the range will be placed at the current position of the start marker.

4. Position the playback marker at the end of the section.
5. Click on the "Set Outpoint" button (Shortcut: O)



The end of the range will be placed at the current position of the start marker.

The currently selected range will appear as a blue bar in the range display.

6. You can play back this range separately with the "Range playback" button.



**Note:** All range limits can be moved by holding down the mouse button and dragging.

7. Once the range matches the section that you want to import, click on the preview image in the monitor and drag it onto the track. An object will appear, corresponding to the selected area.

**Tip:** Use the Insert modes (view page 323) to quickly and efficiently apply individual ranges to the movie.

## Regroup scenes

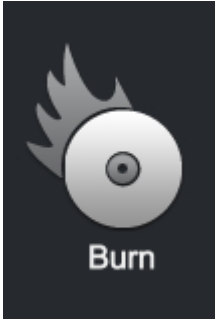
It will often be the case that you will want to move whole scenes or even groups of scenes to a different place within a film. This happens completely intuitively: Single scenes can be selected in any view ("Timeline", "Storyboard" or "Overview" modes) using just a mouse-click, and then moved to the desired spot with the mouse button held down. In the "Timeline" and "Overview" modes you can also create scene groups which can be moved together: "Ctrl + mouse-click" lets you select more than one scene, "Shift + mouse-click" selects the scenes that lie in between.

Three final tips for advanced video arranging:

- Using "Intelligent mouse" mode, which is available in the "Timeline" mode, you can move not just the selected scene, but also all elements directly bordering it (e.g. transitions, fades, and scenes following the selected scene and those on neighboring tracks).
- The commands "Group (view page 284)" and "Ungroup (view page 284)" let you join any scene into groups which can then be moved together as a block.
- If editing and moving scenes left your project looking like a junkyard, then you can also work in the opposite direction by selecting the scenes you want to use and saving them to the Media Pool directory. Collect scenes that you want to use, place them into the "Takes" folder, start a new project, take scenes from that folder, then place them in the second project in the order you want them. The "Takes" folder can be accessed in the Media Pool via the "Import -> My Media" button.

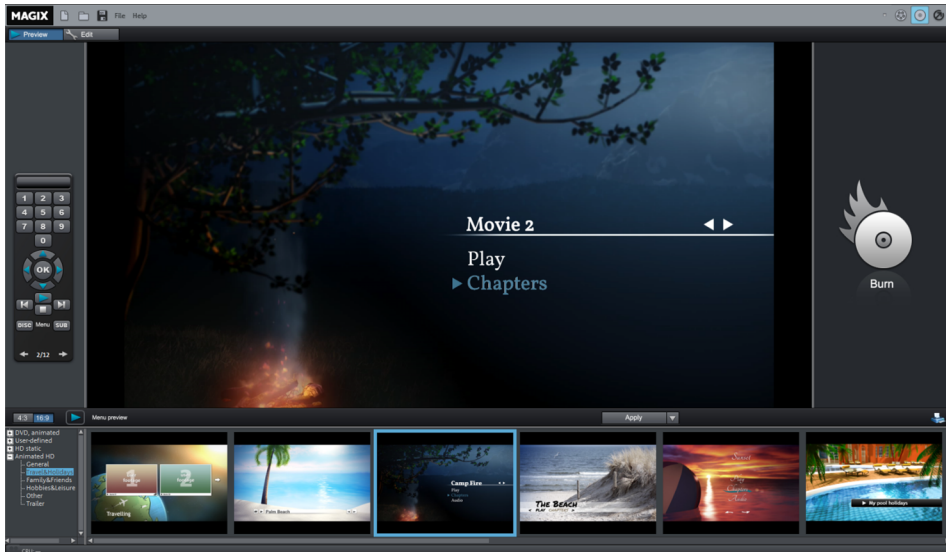
## Burn DVDs with interactive menus

Once you are satisfied with your video, move to the "Burn CD" screen to burn it with an interactive DVD menu onto a disc.



- If you simply want to burn a DVD the quickest way possible, then click the button to burn a DVD.

For multiple films that are subdivided into individual scenes or chapters, the DVD selection menu becomes even more important. This is because you require manageable navigation to be able to jump between each film and each scene.



The "Burn" screen has two views: "preview" and "Edit". Use the buttons located in the upper left to switch between them.

In both views, you will see a preview of the DVD menu. All movies appear as uppermost entries, and all scenes appear as sub-entries.

You can use the remote control to the right to test the function of the menus just like in a real DVD player.

In the "Edit" view you can access the structure of the selection menu in "Navigation". You can delete unnecessary scenes by clicking the corresponding box. The entry will be removed from the menu, but the scene will not be removed from the movie.

To make sensible chapter divisions in your movies, each movie must feature corresponding chapter markers in the "Edit" window. If you want to change the current scene splits, it is best to switch back to the "Edit" screen and then choose the movie which you would like to split. Place the Start marker where you'd like to have it and choose the option "Chapter marker" from the Edit menu (keyboard shortcut: Shift + Enter). If you select the option "Automatic Chapter markers", a Chapter marker is automatically placed at the beginning of every scene. Superfluous chapter markers may simply be clicked and deleted.

If you are satisfied with the subdivision of the movies and chapters, you can devote yourself to the layout of the selection menu.

At the bottom of the screen, you'll see an array of preset menu templates. Use the scroll bar to view each template. There are plenty to choose from:

- If you wish to fully apply a template, first click on "Layout" in the template bar and double-click on the template of your choice. The complete template will then be applied.
- In the "Edit" view you can also combine various elements of individual templates with one another. For example, if you want to combine the text format of a template with the background of another one, then select "Font" first and double click the template with the text of your choice. Then select "Order" and double click the order you like. The preview in the middle shows you the results immediately.
- Double click the preview picture or a menu entry to change the film or chapter name and select a different preview picture.

When all videos and chapters (scenes) are logically arranged and you are satisfied with the selection menu, you can go ahead and burn.

# Workspaces

## Projects, movies and objects

In MAGIX Movie Edit Pro 2016 you will be working with "projects", "movies" and "objects". In order to work quickly and intuitively, it is important to know the differences between these three hierarchically-ordered terms.

- Project** A "Project" includes everything that you want to include on a disc. Normally this means one or more movies and a menu structure for selecting movies for playback. Projects can be saved as "MVP" files on your hard drive and can be loaded later to do further editing to the movies.
- Movie** A "Movie" can be one single video clip or a combination of clips and photos. It can also include music, titles, transitions and much more. Each movie can be exported individually as a video. The "project" can be considered a type of drawer into which you can put multiple movies that will be edited together and burned to the same disc.
- Objects** "Objects" are the individual units of the movie. There are different types of objects (view page 106): videos, photos, titles, transitions, decorative elements, audio (sound).

**Summary:** „Projects“ contain „Movies“ and „Movies“ contain „Objects“.



## "Edit" screen



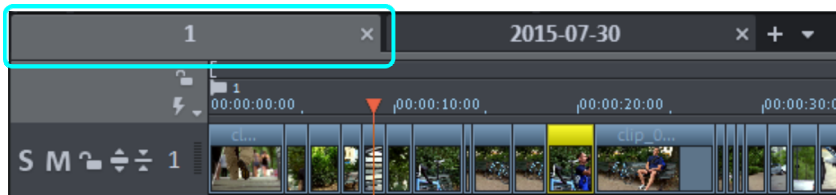
- 1 **Upper toolbar:** These are the buttons for quick access to important commands.
- 2 **Menu bar:** This contains important MAGIX Movie Edit Pro 2016 functions.
- 3 **Preview monitor:** Video and image objects are displayed and files from the Media Pool can be previewed here.
- 4 **Media Pool:** Here you'll find your hard drive content and the areas for transitions, titles and effects. Using the "Import" navigation buttons you can access all of the folders on your PC.
- 5 **Content:** Various content will be displayed depending on which area of the Media Pool you are in. You can preview templates or import media to your project. In the "Effects" area you can fade in the effects to create effect curves.
- 6 **Modes:**
  - The **Storyboard mode** displays the scenes in the current movie in a panel so that they can be easily arranged and edited.
  - The **Timeline mode** is for more complex detailed work. It provides a multi-track view.
  - **Overview mode** displays all the scenes in tabular form and enables quick sorting.
  - The right button activates **Multicam mode** in the Plus/Premium version.

- 7 **Scroll bars:** The lower scroll bars can be dragged apart and pushed together for zooming with the mouse. The right scroll bar zooms into the tracks vertically. Click on the edge of the scroll bars while holding the mouse button to change the visible part in the arrangement window.
- 8 **Project window in timeline mode:** Drag& drop files from the Media Pool, then arrange and edit files in detail here.
- 9 **Timeline with range markers:** Defines the range that will be played. It is equipped with a time scale.
- 10 **Lower toolbar:** Select the timeline or various different mouse modes for diverse editing functions.

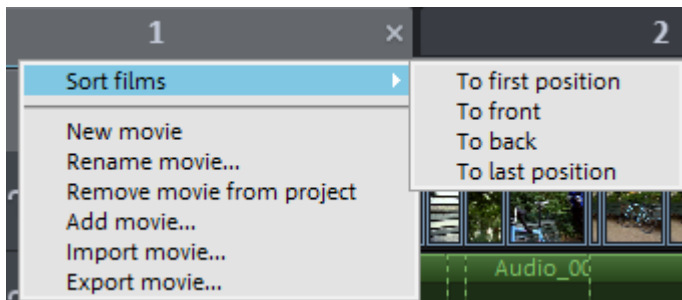
## Project management

The "Edit" area can be used for editing films and also for managing your projects, i. e. here you can sort the order of the movies, add new movies, remove existing movies from the project or rename the movies.

Each film in a current project can be controlled through its own tab above the tracks.



To rename, sort, load or delete movies, the easiest way is to right-click on one of the tabs. You can then select the action you want from the context menu that appears.



## Preview monitor

The preview monitor shows the content of the current movie. In some cases the preview monitor is also used for editing certain effects. Examples of this are:

- Title Editor (view page 130)
- various Movement effects (view page 144)

The preview monitor additionally shows the time position of the playback marker as well as the length of the movie.

### Setup



- |  |                                   |
|--|-----------------------------------|
| <b>1</b> Preview monitor menu (view page 42)           | <b>2</b> Playback marker position |
| <b>3</b> Title bar, shows the name of the current film | <b>4</b> Length of current film   |
| <b>5</b> Full-screen mode button                       | <b>6</b> Area to view             |
| <b>7</b> Transport Console (view page 45)              |                                   |

## Function

In addition to showing the current film, the preview monitor also performs the following functions:

- Preview of video and image files (view page 107)
- Inserting sections of video files into the movie (view page 109)
- Movie overview (view page 297)
- Full-screen mode (view page 44)

## Options

- 3D display (view page 205)
- Set size (resolution) (view page 43)
- Move position (with time bar)

## Preview monitor menu



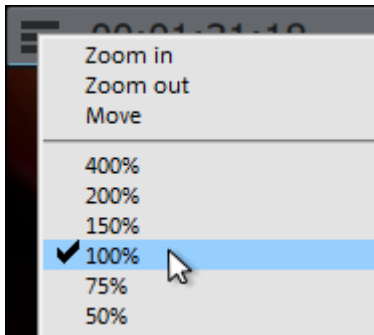
The preview monitor menu is opened with the menu button.

The preview monitor menu contains the following functions:

- Define zoom factor (view page 42)
- Specify image position for preview
- Activate movie overview (view page 297)
- Fade jog and shuttle in and out.
- Activate 3D playback (view page 205)
- Access to the performance menu (also in the context menu for the preview quality switch (view page 46))

## Zoom

You can even make the **preview monitor** bigger or smaller (view page 43).



- The **video image** in the preview monitor can be minimized and maximized with the help of the menu entry. This comes into use (view page 166) especially during effect animation.

**Note:** This zoom applies only to the current view in the preview monitor and will not be applied as a video effect.

Tip: The preview monitor also features a full-screen mode (view page 44).

## Set size

**Tip:** Tip: Useful presets for the arranger and video monitor can be found in the tab "Display templates" in the program settings.

### Set desired size

You can set the preview monitor to any size you want:

1. Move the mouse cursor to the edge of the preview monitor.  
This turns the mouse pointer into a double arrow.
2. Click and hold the left mouse button over the edge of the preview monitor.
3. Drag the preview monitor to the desired size.
4. Release the mouse button.

**Note:** Setting the size of the preview monitor is easier when you set the height and width one after the other.

### Set size through the context menu

1. Right click to open the context menu in the preview monitor display area.
2. Select the desired size in the context menu:
  - By default: Choose an entry in the "Default resolution" submenu.
  - Manually: Select the entry "Other resolution" and enter the desired resolution in the dialog.

### Use movie to define size

You can also determine the size according to the size of the movie or an individual video clip in the movie.

1. In the project window, select the video object you want to use to determine the size of the preview monitor.
2. Right click to open the context menu in the preview monitor display area (6).
3. Select the entry "Adjust preview monitor to selected video".  
MAGIX Movie Edit Pro 2016 will adjust the size of the preview monitor to fit the resolution of the selected video object.

### Use movie settings to define size


1. Right click to open the context menu in the preview monitor display area (6).
2. Select the entry "Adjust preview monitor to movie settings"  
MAGIX Movie Edit Pro 2016 sets the resolution in the movie settings as the new preview monitor size.

**Note:** If the preview monitor resolution is bigger than the screen being used, you will receive a warning message from MAGIX Movie Edit Pro 2016 and will be given the option to cancel or continue the operation.

## Full-screen mode

The preview monitor can be expanded to full-screen size.

### Activate full-screen mode

- Double-click in the preview monitor display area,
- press the key combination "Alt + Enter" or
- press the button  located at the upper right edge of the preview monitor.
- Pressing escape (Esc) exits full-screen mode.

**Note:** The preview monitor can also be moved in full-screen mode. A special context menu (right mouse button) is also available. The transport control can be faded out.

### Show/hide transport control

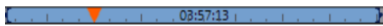
- Requirement: Full-screen mode must be active
1. Right click to open the context menu in the preview monitor display area.  
You can see the current status of this setting in the check box before the menu entry "Show transport control".
  2. Select the entry "Show transport control".  
The transport control will be shown or hidden accordingly.

## Transport console

Transport controls on the preview monitor enable you to play back video and image material in the project window or as a preview in the Media Pool.



### Transport control buttons



**Range:** Above the playback functions you can select the range between the in and out points using the mouse.



**Playback marker:** This marker indicates the position of the image currently displayed in the preview monitor.



**Set in/out points:** Defines the start and end of the playback range.



**To range start:** This button sets the playback marker to the start of the current range.



**Jump to movie start:** Sets the playback marker to the start of the movie.



**Play/Stop (pause):** The playback button in the middle starts playback. A second click stops playback.

**Tip:** In the menu "File -> Settings -> Program -> Playback", you can set whether the playback marker will go back to the start position (stop) after the second click or following the appropriate shortcut (space bar), or if it should stay at the current position (pause function).



**Range playback:** This button plays the current range.



**To range end:** This button sets the playback marker to the end of the current range.



**Audio or video recording:** Quickly jumps to Recording selection.



**Jog wheel:** Using this wheel, you can move by single frames within the video and zoom in for precise positioning of the playback marker.



**Shuttle control:** The further the slider control is moved to the side, the quicker the arrangement is played in the corresponding direction. This way a specific position can be reached quickly.



**Preview quality switch:** Activate Smooth playback (view page 46) if playback becomes choppy.

## Preview quality switch

You can "activate" a smoother preview if playback performance begins to suffer. This setting does not have any effect on the quality of video files when exporting or burning to DVD.

Poor playback performance can be caused by the following:

- Under-performing hardware
- High-resolution source material (HD or higher)
- A very complex project



In the context menu for the preview quality switch, you can set which options you would like to use for the optimized preview.

The options are:

- Reduce resolution
- Reduce frame rate  
Reduces the number of frames per second
- Deactivate plugins  
Deactivates all video effect plug-ins (view page 158).
- Deactivate effects
- Use proxy objects

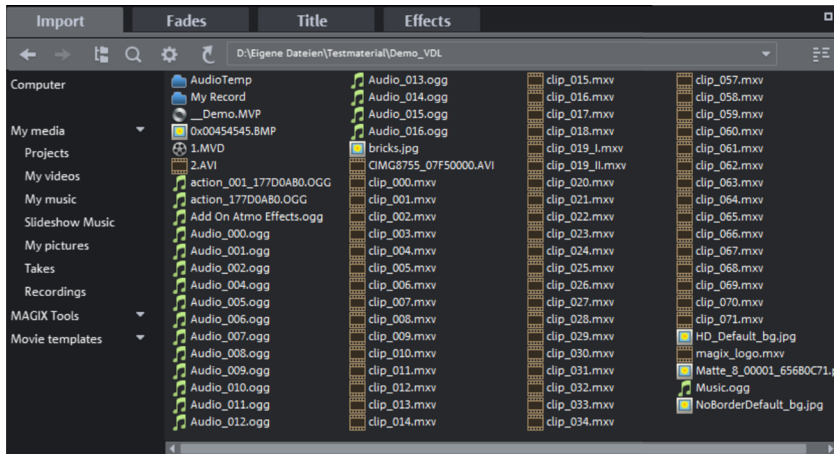
This option only appears when you activate "Create proxy file automatically" in the start dialog in the movie settings.

**Note:** "Reduce resolution" and "Reduce frame rate" are preset.



## Media Pool

The structure and functioning of the Media Pool is similar to Windows Explorer. The only difference is that the Media Pool only displays files that can be used in the slideshow. This is used to access and load multimedia files of all kinds: photos and other image files, video files, audio files, transitions, effects, and also complete projects.



**Note:** The Media Pool displays the files on your hard drive. Files that are deleted here cannot be recovered in Windows Explorer.

If you hover the mouse pointer over a media file, two icons for the options will appear: playback (preview) and import.

- **Preview:** All available media can be previewed using the preview function. If you click on the playback icon, the file will be played back in the preview monitor. Video and image files are displayed and audio files are played back through the sound card. There are previews for the templates and effects included to make it clear how they will function.
- **Import:** All media files from local drives or the Internet can be dragged and dropped into the project or loaded through the Import icon.

You can also load files from the Media Pool by double-clicking. Selected entries (including entire folders) can be selected by holding down the left mouse button and dragging them into the slideshow (drag & drop). If you want to load several files simultaneously, you first have to select them in the Media Pool.

- Click on the selected entries one after the other while holding down "Ctrl".
- If you want to load a sequence of files, hold the "Shift" key and click on the first entry and then on the last. All entries in between will be selected.

- By holding down the left mouse button you can drag out a selection box over multiple image files to select them. "Ctrl + A" selects every entry contained in a Media Pool folder.

**Tip:** Improve access to your media folder by creating a link in the "Import" area of the Media Pool. You can do this by right-clicking on one of the entries and selecting "Create link". Select the media folder and click "OK" to confirm.

**Note:** All links are automatically deleted if the function "Reset standard program settings" ("Edit" menu > "Settings") is used.

## Importing

### Navigation buttons

The navigation buttons let you navigate through your computer's drives and folders.



**Forwards/Backwards:** These buttons access the previously viewed folders.



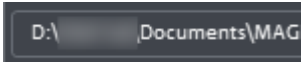
**Up:** This button brings you to the next highest folder level.



**Folder tree:** Here you can activate a folder tree to navigate through your computer system.



**Search:** The search function allows you to find specific files quickly. You may specify your search according to file type, date, or certain folders.



**Browse history list and Path details:** In the top center you will see the path of the current folder. Use the arrow button to open the menu to find the folders you previously visited.



**Options:** All functions of the context menu (switch views, rename, or delete files, etc.) can also be accessed using the options button.



**Display options:** Settings for how detailed the entries should be listed may be made here.



**Zoom:** A zoom slide can be used to set the number and size of visible symbols in the "Large symbols" view.

### Search



The Media Pool has an easy search function for finding files on the computer. It may be activated and turned off again with the shown button.

**File name:** Enter any part of the name of the file you are looking for in the "File name" field. The X symbol deletes the entry. A "?" may be used as a placeholder for a single character, and "\*" for any number of characters.

**File type:** Here you can enter a file name extension. Multiple entries are separated using a semicolon. Below the entry field, various presets may be selected for often-used file name extensions.

**Date:** Here, you can set time period limits on your search. Choose an entry from the list.

**Folder:** If you don't want to search the entire computer, but only look on certain drives or in a single folder, you can define a certain search path.

**Search depth:** Here you have various options that determine whether additional locations should be searched.

- Search indexed locations and the selected folder
- Search indexed locations, the selected folder and personal files.
- Search indexed locations, the selected folder, personal files and the project file.

"Indexed locations" are folders, which are searched and cataloged in Windows via the index list. If the index list is activated, the files in the indicated folders will be indexed while the computer is idling, so that the user's search query may be completed faster.

**Note:** In Microsoft Windows XP, the indexing service is usually deactivated by default. The search functions in Windows Vista® may be installed with the current version of "Windows Search". They make it possible to easily add to the indexing service. Please refer to the installation instructions from Microsoft.

## Computer

The link button "Computer" displays the drives in the Media Pool. All drives will be listed along with their drive letters and can be opened with a double click.

## User directory

The second button featuring the user's name opens their personal folder in the Media Pool.

## My media

**Projects:** Here you can switch to the folder where your projects and films are usually stored.

You will find the "Show project contents" function in the context menu of a project. Using this function, you can display all objects of a project and copy them into the current project, retaining the editing and effect state of the object. This means that you don't have to edit the objects again to keep the status of the "old" project. But you can certainly continue editing the transferred object. These changes will be then saved in the current project.

**My Videos:** Displays all usable files found in "My Documents\My Videos."

**My Music:** Displays the contents of the "My Files\My Music" folder.

**My Pictures:** Switches to the "My Documents\My Pictures" folder. This folder is often used by digital cameras and scanners by default to store transferred images.

**Recordings:** MAGIX Movie Edit Pro 2016 specifies standards for all recordings.

## MAGIX Tools

The "MAGIX tools" link enables the "XAR animations", "Downloads", "Database", "Online Album", and "Internet Media" links to be selected.

**XAR animations:** Here you can find animations in Xara Xtreme Pro format.

**Downloads:** Use this button to access the media files that you downloaded with Catooh.

**Databank:** The programs MAGIX Music Manager and MAGIX Photo Manager, sold separately, generate a databank which contains videos, photos and music pieces. These programs can be used to manage and maintain the databank. MAGIX Movie Edit Pro 2016 enables direct import from the databank.

**Online Album:** This buttons opens MAGIX Online Album. This provides a shortcut for uploading and deleting data. To do this, you must first register on MAGIX Online Album.

There are many ways to upload data:

1. While holding "Ctrl" down, select the data to be uploaded in the Media Pool, and select "Copy" in the context menu (opened by right clicking). Switch to the MAGIX Online Album screen, open the desired folder, and select "Paste" in the context menu.
2. In the Media Pool, click on "Online Album", and go to the desired directory. Open the Windows Explorer, select the desired data with "Ctrl" held down, and drag it into the Media Pool.

Both options will result in your data being uploaded to your MAGIX Online Album.

**Note:** This function requires an Internet connection. Make sure you have your login details (email address and password) ready.

**Internet media:** This opens the integrated browser (view page 331) in MAGIX Movie Edit Pro 2016. This allows you to collect media directly from the Internet, e. g. images for a current film project etc.

**Travel route:** Click here if you would like to create a travel route (view page 219).

## Movie templates

Here you will find various movie templates, which can be customized as you wish (view page 216).

## Transitions

Here you can find all transitions from MAGIX Movie Edit Pro 2016, sorted into various categories. One click on a category displays all of the transitions that are contained.

To load a transition, drag it with a held-down mouse key onto an object.

You can find additional information in the "Transitions" section of the "Objects (view page 116)" chapter.

## Title

This displays the title settings and the title editor (view page 130). These presets are sorted into different categories and may be loaded by double-clicking or drag & drop. The 3D title templates are also located here.

The text featured by title objects may be changed directly in the program monitor by double-clicking.

## Effects

This provides access to the effects that are sorted into the various categories. Read more about this in the chapter "Effects" (view page 135).

## Video effect templates

Here you can find pre-configured effect templates that can be dragged-and-dropped onto a video or image object. These effect templates consist of a combination of various effect settings which you can adjust in the appropriate effect dialogs.

In the "Video mix effects" subfolder you will find templates for mixing two video or image objects. To do so, two video or image objects have to lie on two tracks directly above or below the other. To use a mix effect template, drag on the lower object.

## Video effects

Here you can find adjustable effects for video and photo objects. The effects can be set only after selecting an object in the respective effects dialog. For more information, go to the "Video effects in the Media Pool" (view page 136) section in the "Effects" chapter.

## Movement effects

These are movement effects you can use to animate the frame by using zoom or camera movements. For more information go to the "Effects" chapter, section "Movement effects in Media Pool" (view page 144).

## Stereo3D

This accesses the program's Stereo 3D functionality. Please read the corresponding chapter "Stereo 3D". (view page 205)

**Note:** This function is available only in the Plus/Premium version.

## Audio effects

Here you will find many audio effect templates such as echo, reverb, equalizer, compressor, etc. Read the "Audio editing" (view page 172) for more information.

## Design elements

**Picture-in-picture:** These are various effect templates for image stacking.

**Collages:** These work similarly to normal picture-in-picture effects but more objects are used. Depending on the collage, arrange the selected objects one after the other and drag the collage onto the first object.

**Test images:** These are professional test images for calibrating your system. You can also use the colored backgrounds for your own color transitions, for instance. The special "User" template opens a color selection dialog where you can choose the desired color.

**Backgrounds:** Here you can find static and animated photo and video backgrounds. Video backgrounds are capable of being looped, meaning that their length can be extended by duplication.

**Image objects:** Here you will find various image objects like black bars, thought bubbles for cartoons, etc.

**Intros/Outros:** These are beginning and end scenes for films with various themes.

You can find additional information in the "Effects (view page 153)" chapter, in the section "Design element in Media Pool".

### Snap marker (only in the Plus/Premium versions)

Select a location **directly in the video object** with a snap marker (view page 124) to indicate where another object should snap in. This snap marker will stay in place even if the object is moved into the Timeline.

Snap markers are helpful for trimming, moving and synchronizing objects, for instance, when you want a title to fade in at a specific position in a video object. Snap markers can also be applied to playback and stop positions, and to and between object edges.

They can also be aligned to transients (signal peaks) in order to select these signal peaks as snap points in audio material.

### My Presets

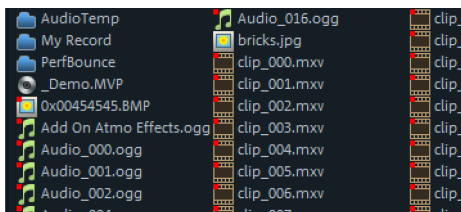
Here you will find the folder for your own effect templates. For more details, please read the "My Presets in Media Pool" section in the "Effects" chapter (view page 153).

### Additional Effects

Here you will find all available effect plug-ins. Please read the "Additional effects in the Media Pool" section in the "Effects" chapter (view page 158).

## Various file list view modes

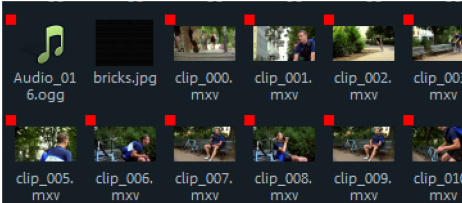
All supported multimedia files and subfolders of the currently selected folder are displayed in the **file list**. Three different views (list, detail, large symbols) can be set by right-clicking on the Media Pool context menu.



**List:** Only file names are listed. This view mode displays the most files simultaneously.

Name	Type	Size
AudioTemp	Folder	
My Record	Folder	
PerfBounce	Folder	
_Demo	.MVP	879,452
0x00454545	.BMP	15,606
Add On Atmo Effects	.ogg	2,203,176
Audio_000	.ogg	196,400
Audio_001	.ogg	72,421

**Details:** For each media file, its type, size and date of last change will be displayed next to its name.



**Large symbols** can be quite useful because they show a preview frame for each movie and picture file. This allows you to sort through the material quicker.

As soon as you activate this display, the **zoom function** will appear. With it, you can additionally magnify thumbnail images.

## Preview function

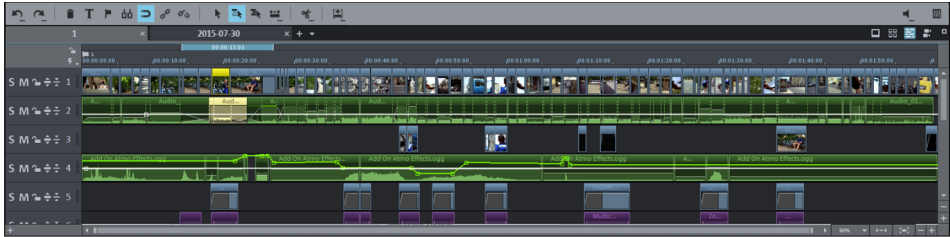
This is a preview function for all files in the Media Pool which can be started by dragging & dropping onto the video monitor or by pressing the play button.

There are also previews for effects that illustrate their functionality.

The "Extras" button or the enhanced transport control function provides a selection of sections from a longer video file in the Media Pool. Please refer to the "Inserting objects into the project" chapter.



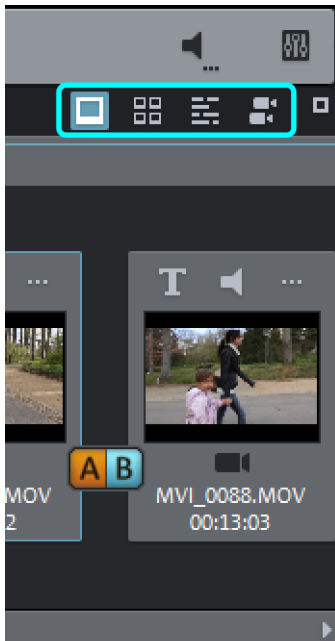
## Project window



MAGIX Movie Edit Pro 2016 offers an editing interface for advanced editing: audio dubbing, professional editing, plus precise transitions and effects editing.

## Editing mode

With the help of the button in the center of the toolbar, you can switch between the "Timeline-", "Storyboard" and "Scene overview" modes. Another button for the multicam mode is available in the Plus/Premium version.



**Storyboard mode** (view page 29) (first button) is the preset view. This view offers an easy, streamlined interface to simplify the editing process. All scenes from your film are listed sequentially in the "Storyboard" mode. Every scene is displayed with a preview picture in the storyboard.

The **scene overview** (view page 28) (second button) provides a scaleable overview of the scenes. You can use this to comfortably view, sort, and delete unnecessary scenes.

In **Timeline-mode** (view page 30) (third button), your movies are displayed as "objects" on the "timeline". This means: The longer the object, the longer the corresponding film.

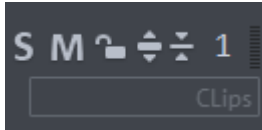
You can display all modes in full screen using the button at the top right.

**Multicam mode** is found under the fourth button in the Plus/Premium version of MAGIX Movie Edit Pro 2016. Multicam editing enables easy cutting of various recordings of the same scene from different camera perspectives.

## Tracks

The project window is divided into tracks where the multimedia material can be positioned and edited. The number of tracks that are displayed can be specified in the file menu under "Movie settings".

In principle, any object type can be placed on any of the tracks. Video and image objects can also be combined with audio objects within a track. The maximum length of a movie is restricted to six hours.



At the left edge of each track is a track box where you can mute (**M**ute) the track or play it back **S**olo.

Clicking the "Lock" symbol protects all objects in a track against unwanted editing.

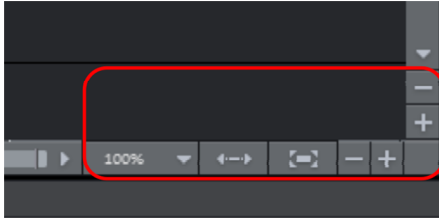
The two double arrow symbols can be used to minimize or maximize the the height of the track.

When a track has exceeded a certain height, a text field for the track name can be seen in the track box. The track name can be edited by double-clicking this text field.

A right-click on the track box opens the context menu:

- Multicam > Source track: Here you can activate/deactivate a track as a source track (view page 126).
- Multicam > Master audio track: Here you can designate the master audio track for Multicam editing (view page 127).
- Track height: Set whether the selected track or all tracks should be displayed as small, large or in standard size.  
You can also adjust the size using your mouse. To do so, drag the lower border of a track box downward using a mouse.

## Zoom



The vertical zoom function sets the number of visible tracks. On many tracks zooming is useful for selectively editing a track or an object in full view.

Use the horizontal zoom functions to set up the visible section of the project on the timeline.

Clicking and dragging on the bottom border of a track allows you to adjust the height of the display.



**Object zoom:** Vertical and horizontal zoom stages are enlarged so that all of the selected objects are displayed at maximum size.



**Optimize view:** Displays the full project. Zoom will be set to 100%.

When the function is turned off, the old zoom level will be reactivated.

## Preview rendering



You can reach the preview rendering (view page 214) features by pressing this button, located next to the timeline.

## Toolbars

### Upper tool bar



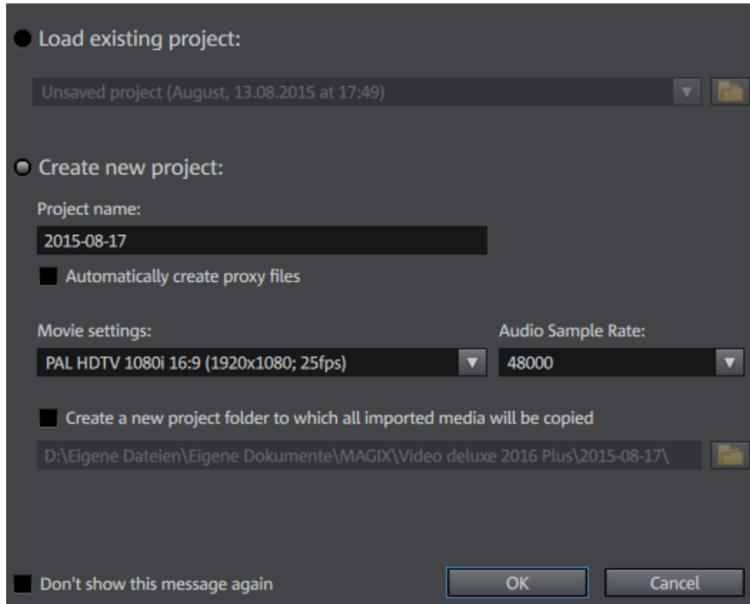
The upper tool bar can be found in the monitor to the top left. It has the following functions:

#### New project



A new MAGIX Movie Edit Pro 2016 project is created. The Start dialog opens.

A start dialog will open when the program is launched or a new project is loaded. Here you can make important presets for the project. You can change these settings at any time by going to "File" > "Settings".



**Create new project:** Here you can assign a name to your new project.

**Options:** This button lets you open and close the options area of the start dialog.

**Watch the intro video:** Here you can launch the introductory video with information about workflows in MAGIX Movie Edit Pro 2016.

**Project file:** Here you can set the path for the project directory where all project files should be saved.

**Movie settings:** Here you can set the movie's target format (display norm, resolution, frame rate). This setting has no effect on the internal processing quality and can be changed at any time by going to "File > Settings > Movie" (view page 69).

**Audio sample rate:** Here you can set the audio track's audio sample rate.

**Load existing project:** Here you can select and load a previously saved project.

**Use movie template:** Here you can choose an included movie template for a new project. Read the "Using movie templates" (view page 216) section for more details.

## Load project



With this option you can load a project or a media file. Please note that all media files associated with it must be loaded along with a project.

MAGIX Movie Edit Pro 2016 will search for all used sounds and video files in the folders in which they were located when the move was saved.

Keyboard shortcut: Ctrl + O

## Save project



The current disc project is saved with the name displayed in the project window. If you have not yet specified a name for your project, a dialog will open wherein MAGIX Movie Edit Pro 2016 asks you to do so.

**Please note:** In the project file (\*.MVP), all information about the used media files, cuts, effects, and titles are saved, but not the picture and sound material itself. This is found in the recorded or imported media files that remain unchanged during the entire MAGIX Movie Edit Pro 2016 editing process. To save the full movie into a dedicated directory, for instance to continue editing on a different PC, please use the command "Copy movie and media into folder".

Shortcut: Ctrl + S

## MAGIX News Center

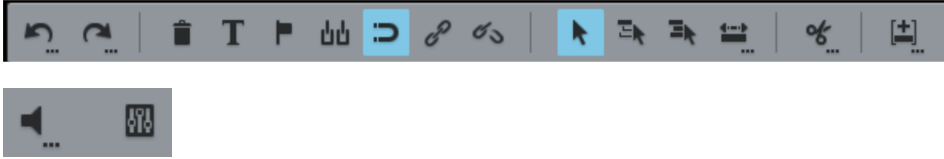
The MAGIX News Center features links to current online tutorials and tips & tricks on the software application examples. The "News" is indicated by color according to content:

- Green indicates practical tips & tricks for the software
- Yellow reports the availability of new patches and updates
- Red for special offers, contests and questionnaires

If no new messages are present, the button will appear gray. When the MAGIX News Center is clicked, all of the available information will be displayed. Click the messages to reach the corresponding website.

## Lower toolbar

The following toolbars are displayed in Storyboard Mode:



### Undo



This command allows you to undo the last changes made. This way, it's no problem if you want to try out critical operations. If you don't like the result, you can always revert to the previous state using "Undo".

Clicking on the arrow next to the button opens a list of changes made until now, allowing you to undo several changes made in sequence.

**Note:** You can adjust the length of the list to your needs in program settings (view page 72). A general rule: The longer the list, the more RAM is used.

### Redo



This function undoes the previous "Undo" function.

Clicking on the arrow next to the button opens a list of revoked changes made until now, allowing you to restore several "undo steps".

### Delete objects



This command deletes the selected scene (or the selected object in Timeline-mode).

Shortcut: Del

### Title Editor



Opens the Title editor for the selected photo, video, or title object.

Keyboard shortcut: Ctrl + T

## Set chapter marker



Places a chapter marker at the position of the playback marker. This creates a chapter entry in the disc menu in case the movie is being burned to disc.

You can rename the chapter markers by right clicking and selecting "Rename" in the context menu. The new name will also appear in the chapter menu (view page 242).

## Set snap marker



To set a snap marker, select an object and place the playback marker at the position where you want to place the snap marker.

You can move a snap marker with the mouse using drag & drop.

You can set as many snap markers as you like per object.

## Object grid



Use this button to switch the object grid (view page 31) on and off. When the object grid is switched on, the objects snap into place beside one another so that everything fits in seamlessly.

## Form group



Orders all selected objects into groups. As soon as an object from the group is selected, all other objects in the group will be highlighted as well so that you can work on them collectively.

Keyboard shortcut: G

## Ungroup objects



This turns all selected objects into free-standing objects again.

Keyboard shortcut: Shift + G

## Mouse mode for individual objects



This is the preset mouse mode where most work is performed.

Select objects by left-clicking them. You can move an object by holding down the mouse over it while dragging it to the desired position.

Keyboard shortcut: 6

## Move everything on the track



Basically, this mouse mode behaves like the mouse mode for individual objects, but moving one object will also move all other objects located behind it on the same track.

This is practical if space is needed at the start of a track, since all objects can be moved together without moving them underneath each other.

Shortcut: 8

## Move everything



This mouse mode in principal behaves like the "Single object mouse mode". All objects that have the same or a later starting point will be moved.

This is useful if something should be inserted in the middle of an arrangement, but there is not enough space, meaning that all contents have to be moved down.

Shortcut: 7

## Additional mouse modes



MAGIX Movie Edit Pro 2016 offers additional mouse modes for different kinds of editing. They can be opened by holding down the mouse button or through the context menu of the last button.

## Stretch mouse mode



This special mode is for customizing the length of objects.

With timestretching, audio objects can be expanded or compressed using the handles at the bottom. The duration of the audio material is therefore lengthened without changing the pitch. Playback of the video objects is accelerated/decelerated with the help of the handles at the bottom.

**Warning!** If the object to be stretched or compressed is going to be animated with an effects curve, then the option "Connect curve length with object length (view page 164)" should be set for the effects curve.

Keyboard shortcut: 0



## Curve mouse mode



This mouse mode is used especially for drawing effects curves.

The effects curve controls the intensity of the effect: The more higher the curve point, the more intense the respective effects parameter at this location. The curves can be used for video and image objects on the image tracks and also for audio objects on the audio tracks.

More information about this can be found in the chapter "Animate objects", section "Editing object effects curves".

Keyboard shortcut: 9

## Preview audio



This mode allows you to preview audio objects (as long as the mouse button is held down).

In this mode, objects cannot be moved or changed.

Shortcut: Alt + 6

## Cut button



MAGIX Movie Edit Pro 2016 offers various editing functions. They can be opened using the small arrow next to the button.

**Hint:** If the commands "Split" and "Remove beginning/end" are applied without a selection, all objects at the position of the playback marker are cut.

## Split



This command cuts a scene at the point where the playback marker is positioned. This way, two free-standing objects are created.

Keyboard shortcut: T

## Remove start



This command cuts a selected scene in two at the point where the playback marker is positioned and removes the first part.

Shortcut: Z

**Hint:** If the commands "Split" and "Remove beginning/end" are applied without a selection, all objects at the position of the playback marker are cut.

## Remove end



This command cuts a selected scene in two at the point where the playback marker is positioned and removes the second part.

Shortcut: U

**Hint:** If the commands "Split" and "Remove beginning/end" are applied without a selection, all objects at the position of the playback marker are cut.

## Remove scene



This command allows you to completely remove selected objects. The parts that follow will be automatically moved to the end of the object in front of the object to be removed.

Keyboard shortcut: Ctrl + Del

## Split movie



This command divides the movie into two individual movies at the position of the playback marker.

The current project window retains the portion that is located in front of the playback marker. The latter part will be removed from the current project window and placed as a new film. You can find this movie by going to the "Window" menu.

Shortcut: Alt + Y

## Special functions to insert new objects

MAGIX Movie Edit Pro 2016 offers various possibilities how an object selected in the Media Pool will be pasted into the project.

## Automatic application



Inserts the selection on the monitor or in the Media Pool into the project window. Video and image objects will always be placed behind the last object into the first track, audio and text objects are separated into different tracks.

Shortcut (is applied directly): 1

## Single-track ripple



This adds the currently selected object from the Media Pool or project temp folder and/or from the selected area of the source monitor to the position where the playback marker is located while moving the objects located behind it on the track.

- In contrast to automatic insertion, in a single-track ripple all objects are inserted at the position of the playback marker. The objects on the target track are automatically moved back on the track behind the inserted object. Bordering tracks are unchanged.
- Videos and images are placed on the first track. If another object is found at the playback marker position, then it will be cut and continued at the end of the inserted object (so that the inserted object can start exactly at the point of insertion).

Keyboard shortcut (is applied directly): 2

## Multitrack ripple



This adds the currently selected object from the Media Pool or the project temp folder and/or from the selected area in the source monitor to the position of the playback marker. All objects found at the playback marker position will be split and moved down the length of the inserted object. All subsequent objects on all tracks will also be moved.

- Objects located further along on all tracks will also be moved further down.
- In contrast to automatic insertion, the object will be inserted at the position of the playback marker.
- Videos and images are placed on the first track. If another object is found at the playback marker position, then it will be cut and continued at the end of the inserted object (so that the inserted object can start exactly at the point of insertion).
- If other objects are located at the playback marker position, these will also be separated and moved further along the track.

Keyboard shortcut (is applied directly): 3

## Exchange



This replaces the object selected in the project with the currently selected object from the Media Pool or the project temp folder and/or from the selected area in the source monitor. Length adjustment moves the objects following it correspondingly.

Keyboard shortcut (is applied directly): 4

## Overwrite



This overwrites the object at the position of the playback marker with the currently selected object from the Media Pool or the project temp folder and/or from the selected area in the source monitor...

**Note:** In contrast to Replace, no length adjustment takes place here. The "Replace" functions moves subsequent objects, whereas "Overwrite" overwrites subsequent objects as well (sometimes only partially), depending on the length of the object being inserted in comparison to the object being overwritten.

Keyboard shortcut (is applied directly):

5

## Audio functions

Below to the right of the Media Pool, you will find two more buttons for important audio functions.



### Mute



You can use the speaker button to mute the arrangement.



A muted arrangement is characterized by a crossed through speaker symbol.

### Scrubbing



The small arrow next to the mute button opens a menu where you can select the scrubbing functions (view page 200).

### Mixer



This button opens the audio mixer (view page 192).

## Adjusting the workspace

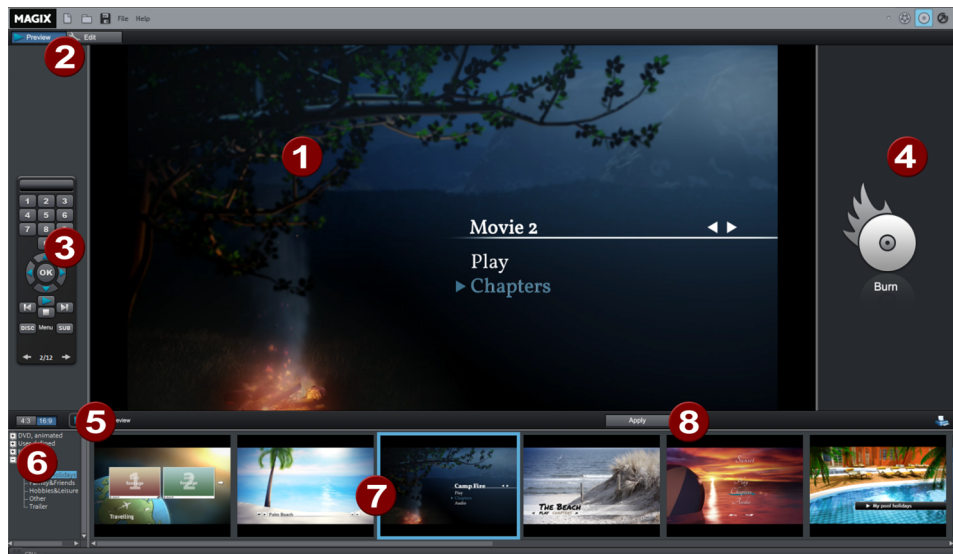
The project window, video monitor and Media Pool can be positioned anywhere on the screen or completely hidden. Personal settings are automatically saved when MAGIX Movie Edit Pro 2016 is closed and remain when the program is reopened.

For larger arrangements, the program monitor can be used to show an overview of the project window (Window -> Movie overview (view page 297)).

**Note:** If lose track of the settings, you can use "Window -> Reset window arrangement" or the keyboard shortcut "F9" to reset the basic settings.

**Tip:** If you are working with two monitors, you can use one to display the preview monitor as a full screen. To do this, move the cursor to the upper border of the preview monitor and click and drag it to the other screen. Then click on the small rectangle in the upper right. The preview monitor will now be displayed in fullscreen mode.

## The "Burn" screen



- 1 **Menu preview:** Here you can see a selection menu preview. For more information, read the "Edit disc menu" chapter.
- 2 **Switch views:** Here you can switch between preview and edit views.

- 3 **Remote control:** Here you can check how your future disc will react when you press the buttons of your player's remote control (view page 241).
- 4 **Output:** Before burning the project, select the desired format (view page 252).
- 5 **Play preview:** Play the preview menu and test how it works with the remote control.
- 6 **Template category:** Select the desired section from various categories with different menus.
- 7 **Menu templates:** Switch between different templates for designing your menus.
- 8 **Use templates:** Here you can select whether a template should be assigned to a page, the menu or all menus on a disc.

You will find more information in the "Burning" (view page 241) section.

# Settings

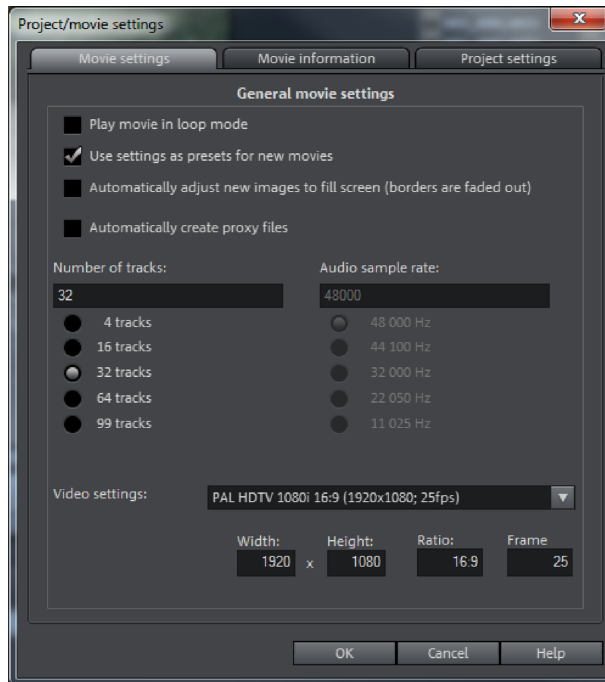
All settings dialogs can be accessed through "File -> Settings".

## Project and movie settings

You can reach these settings through "File > Settings > Movie". Here you can determine the settings that can be individually adjusted for every movie and project.

**Note:** A project can include multiple movies.

## Settings



**Play film in loop mode:** The movie is played over and over again, i.e. when the movie reaches the end marker, it starts again from the beginning.

**Use as presets for new projects:** The settings specified in the dialog are used as the standard settings for newly created projects.

**Automatically adjust new images to fill screen (borders are faded out):** This option is especially useful for photos that are part of the arrangement but have a different format. When the option is activated, there are no bothersome black bars; however, parts of the image along the edge will be hidden.

**Automatically create proxy files (Plus/Premium version):** The proxy and preview rendering function enables smooth preview playback by rendering complicated passages in the project in advance. You can start this function in the context menu of the marker bar. More about this is available in the "Proxy editing" (view page 213) section.

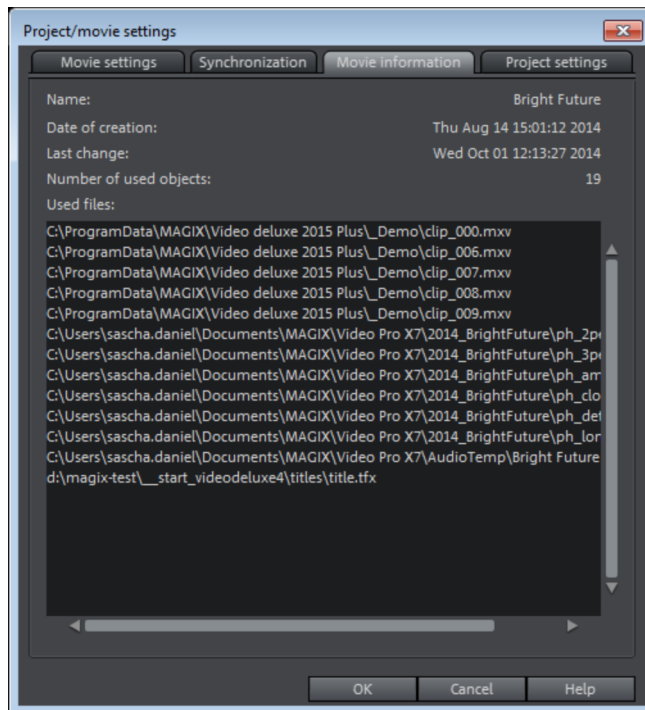
**Number of tracks:** Here you can change the number of tracks.

**Audio sample rate:** The preset sample rate is 48 kHz. This sample rate is used for all recordings and is also the standard setting for DVD audio tracks. This setting guarantees optimal sound quality. Audio material at different sample rates (e. g. CD Audio with 44 kHz) is automatically adapted when loaded (resampling). Only change this value if you want to use audio with a different sample rate or if your sound card does not support this sample rate.

**Video settings:** This is where you set the standard settings for the picture format and frame rate for PAL or NTSC TV pictures or for your own format.



## Movie information



This option opens an information window:

**Name:** Here you can enter the name of the current movie.

**Date of creation:** Displays the time the movie was created.

**Last changed:** Displays the time of the last save.

**Number of objects used:** Displays the number of all objects in the movie.

**Used files:** All files used in the movie are listed here.

## Project settings

You can change project settings here. A project can consist of multiple movies and is saved as an MVP file.

**Name and path:** Displays the name of the movie and the location where it is stored on the computer.

**Description:** Here you can give your project a description - perhaps a few statements about the state of the editing progress, etc. This is something like a notepad function.

**Date:** Here you can assign your project a specific date. You can choose between a date - e. g. "Dec. 25, 2010" - or a written description - e. g. "Christmas 2010".

**Preview:** This is the preview in a file manager such as Windows Explorer. You can use the automatic selection for the preview image or choose an image from your hard drive. You can also use a preview image from movie project.

**Select preview image automatically:** MAGIX Movie Edit Pro 2016 uses an automatically-selected preview image.

### Use image file

Clicking the folder button opens a dialog to load image files. In this dialog, you can navigate to the directory where the image file is found and select it by double clicking.

### Use preview image from movie

Use the controller to select a frame from the corresponding directory.

## Program Settings

All basic settings for MAGIX Movie Edit Pro 2016 are made in this window.

### Open

"File" > "Settings" > "Program"

Shortcut: Y

## Playback

### Audio playback

**Driver selection** Here you can specify whether the Windows Wave driver or the DirectSound driver will be used for audio playback. DirectSound is a component of DirectX and, if necessary, is installed together with MAGIX Movie Edit Pro 2016. DirectSound has the advantage that the sound output (for all modern sound cards or onboard soundchips) can also be used by other programs open simultaneously. WAV drivers are recommended if the CPU load is higher, as the larger buffers allow better handling of the load peaks (otherwise this would cause crackling).

**Note:** "DirectSound" must be activated to work with 5.1 Surround Sound.

**Output device:** Use this option to specify which sound card plays the wave audio objects. This is especially important if you have multiple sound cards installed on your computer, e.g. "onboard sound" as well as an additional sound card.

**Audio buffer:** In order to allow smooth playback of a complex arrangement, MAGIX Movie Edit Pro 2016 creates a RAM data buffer into which the current data is loaded. This allows for step-by-step preprocessing instead of preprocessing for the entire arrangement.

**Number of buffers:** Here you can specify how many buffers should be used. More buffers increase reliability and improve playback performance, but they also increase the memory requirements. If played via DirectSound (see settings in the "Playback parameter" dialog), only one buffer is used automatically.

**Note:** If response and loading times are too slow, reduce the buffer size; otherwise increase the buffer size if the audio playback is choppy or if real-time errors occur. Since error-free playback is usually more important than fast reaction times, the buffer size should be raised to 16384 or 32768 to avoid drop-outs. The possible number of used buffer updates is between 2 and 10.

**Multitrack size/Preview size:** Specify the buffer size used to play the entire arrangement or for previewing waves in the file manager.

## Video playback

**Overload optimization for real-time playback:** Here you can activate or deactivate overload optimizing during realtime playback of the arrangement. This feature is particularly suitable for lower performance PCs.

**Instant Cache Refresh in Multicam Mode:** Activate this mode to empty the cache in short intervals which will make the preview for multicam editing immediately visible in the preview monitor. This may result in juddering during playback.

**Track number for parallel track optimization:** This is an option, which is useful for projects with an especially high track number which leads to problems when saving the project. If you get errors, try using a value of "2" here. If you continue having problems, try using "1".

**Note:** This option influences program function only when MPEG and AVCHD material is being edited. However, performance declines to reduce disk space usage with increasing values.

## Project window

**Autoscroll during playback:** If autoscroll is activated, the screen view automatically shifts when the playback marker reaches the right edge of the screen, which is useful for longer arrangements. You can select the size of the scrolling steps from either "Fast" (whole pages) or "Slow" (half pages).

**Attention:** Scrolling requires constant recalculation of the screen view which may lead to interrupted playback if system RAM is too low. If this happens, simply deactivate the autoscroll feature.

**Display:** Display of objects in timeline mode can be simplified to improve performance. You can decide whether to display preview frames for video objects across the entire object, or just for the first and last frames. For audio objects you can hide the wave form display. This is particularly recommended for MPEG data streams.

**Update in background:** The update of the object display after move and zoom operations in the project window is performed in the background in order to let you work smoothly.

**Spacebar behavior:** Here you can determine whether pressing the spacebar during playback resets (deactivated) the playback marker or leaves it at the current playback position (activated).

## Image playback

**Resizing high-quality image material:** Use this feature to improve the quality during resizing, particularly when downsizing to less than half of the original size (e.g. for picture-in-picture effects). Keep in mind that this function requires more processing power.

**Load image material in background:** Activate this option in order to load inserted image material already before playback in background.

## Folder

Here you can set the path where

- you want to save your projects (**Projects**)
- files are exported (**Export**) or imported (**Import**), and recordings (**Recordings**) are saved,
- **Disc Images** are saved
- and where EXE files for the external **audio** and **picture editor** are located so that they can be launched via the Effects or Prepare menu (only Plus/Premium-Version)

**Note:** Folders placed here are fundamental for the entire program. Newly created projects are stored in a separate subfolder, which you can define in the "Program start" (view page 22) screen.

## Video/Audio

In this tab you will find all settings concerning video and audio files.

### Video standard

Normally the right video standard is set up automatically. PAL is used in Europe; the United States and Japan use NTSC.

### Timeline

**Simple display of video objects (first and last image):** Activate this function if you are having performance problems. The preview images of a video in the project window will only be displayed at the beginning and end of the video.

**Half waveform display:** Half of the waveform display (upper part) is enough for audio editing. This is the default setting. If you want to do more detailed, professional audio editing, you can display the complete waveform.

**Video/Audio on one track:** Activate this option if you want imported video footage to be displayed as one object with video and audio on one track. You can always use the options in the object menu to put the video and audio on separate tracks later to edit them individually.

**Display guidelines:** If needed, you can display guidelines in the project window. The spacing between guidelines is adjusted to the zoom factor set in the project window.

**Audio -6 dB on import:** When you load a file containing audio material (sound), the loudness of the generated object will be set to -6 dB. This is particularly useful when playing back several objects that contain audio material at the same time. This reduces the risk of undesirable clipping. Object loudness can be edited (view page 111) at any time.

### Import

**Automatically create frame table during import** Sometimes, rebuilding a frame table can get rid of problems in certain MPEG files. For example, such problems can be present if the navigation (positioning of the playback marker, transport) is bumpy or doesn't function at all.

Normally, when loading MPEG video, a frame table is not created in order to speed up

the loading process. If you do create one anyway, MPEG files are normally noticeably faster and easier to edit.

**Automatically create waveform when importing:** Select this option to automatically create a waveform display for the audio track. This can also be created at any time via the context menu.

**Import videos with audio:** If a video file contains video and audio data, the audio track of the video will also be imported if this option is activated. It will be displayed as an audio object in the project below the video object. Both are automatically grouped together. If the audio track has to be edited or replaced later, you first have to ungroup it ("Ungroup" button in the tool bar or in the "Edit" menu).

**Allow user-defined names for sound extracted from VOBs:** Specifies whether a warning will be displayed for each imported file during VOB (Video Object Block) import (VTS\_01\_1.vob) allowing you to enter a name for your movie (check box "checked") or whether you would like an automatically generated name to be assigned (check box "unchecked").

**Standard display time:** Specify how long an image in the project should be displayed before moving to the next object.

**Note:** Adding transitions between the objects will reduce the actual display time. If you plan on using transitions, it is best not to set the display time too short.

**Trim videos:** Sometimes video clips have damaged frames at the beginning or end. Most often these are green, black or incomplete. Here you have the option of automatically trimming your videos during import if your footage constantly has damaged frames. Specify how many images (frames) should be trimmed at the beginning and the end of the video.

**Note:** The frames are not lost due to the shortening. By adjusting the object length in the project window you can make the trimmed frames reappear.

## Other

**Reduce bitmap resolution for preview:** The resolution of image files is reduced during playback to decrease required memory. This requires less computing power than playback in full resolution; full resolution is always calculated during export.

**Relocate memory for bitmaps to other process:** Activating this option will improve handling of bitmaps as they will be processed differently. This function can lead to delays in 32 bit systems. If this happens, you can deactivate the function.

**GPU acceleration for standard transitions:** Here you can (de)activate hardware acceleration of your graphics card for 3D effects. More information about this topic is available in the 3D transitions (view page 118) chapter.

**Automatic interlace processing:** MAGIX Movie Edit Pro 2016 normally detects whether the loaded video files were recorded with the interlace or progressive processes automatically, and half-image format is detected for interlaced movies. If automatic detection fails, you can deactivate it here and set the object properties (view page 305) of video objects to the correct process.

## System

### Program interface

**Reactivate warning dialogs:** In its newly installed state, MAGIX Movie Edit Pro 2016 displays a number of security queries at various parts of the program. Each of them can be switched off by clicking the small box at the bottom that says "Don't show this message again". To display these warning messages, select the "Reactivate dialogs" option.

**Text size and for touch:** The default text size is "Smaller". The option also determines the sizes text used for buttons, menus etc. Change text size to "Medium" or "Large" if you find it easier to read.

**Begin online configuration:** If you have an Internet connection and use MAGIX Online Services, you can configure your services here.

### Undo/Redo

Here you can set the maximum number of undo commands. The higher the value, the higher the CPU load on the computer.

### Save automatically

Auto Save projects allow you to set a time interval at which the project will be automatically saved. If the program crashes, this feature will restore the project to the state it was in when last saved.

### Other

**Automatic preview when changing transitions:** When this option is activated, a short preview of the transition effect will be quickly played between the two objects you selected.

**High output quality for dynamic zoom and combination effects:** The Title Editor is used in high resolution by default. The display quality of titles is improved, but this also results in longer loading times for movies.

**Move playback marker when selecting objects:** This option automatically moves the playback marker to the beginning of the selected object.

**Activate mobile sync:** Mobile sync is necessary for transferring Movie Edit Touch projects to MAGIX Movie Edit Pro 2016 (view page 103). When this option is activated, you can transfer projects created with Movie Edit Touch directly to MAGIX Movie Edit Pro 2016 to continue editing them.

**Double-click properties:** Specify whether a double-click plays back files in the Media Pool or imports them to the project window.

**Preferred codec for import and export of MPEG-2/MPEG-4:** This option is only available after you have installed the MainConcept encoder for MPEG-2 and MPEG-4 and defined whether the standard encoder or the MainConcept encoder will be used for the corresponding file format.

## Import formats

File formats that you never use can be deselected here. Once deselected they won't be imported anymore. Please keep in mind that several import modules exist for some file types (AVI, WMA). MAGIX Movie Edit Pro 2016 uses the fastest one in each case. If you experience problems when importing certain files, you can experiment with deactivation of certain import modules, forcing the program to use the slower but more compatible import module.

## Display options

### Activate video output

With this option, you can display your project window on an additionally connected monitor. Without additional hardware, you can play a preview in any mode in order to see how the final material looks.

### Preview in the project window/preview window and playback in video recorder/analog recording

You can set the playback mode separately for the project window (including all preview windows and effects dialogs) and the preview monitors during recording and in the video recorder.



**Always use DirectX9:** Normally DirectX11 is activated for the preview in the project window. DirectX9 can be activated for Windows XP and graphics cards that don't support DirectX11. You can also activate it if you are having general problems.

## Video mode

Hardware acceleration (Direct3D) is the default setting and as a rule should not be changed, since it delivers the best results. If you notice problems, such as the image turning black, you can try to see if picking another mode helps. The Compatibility mode (VideoForWindows) completely turns hardware acceleration off, which should deliver the best results. However, it is also the slowest mode and can result in choppy playback. These options are irrelevant for data export or disc burning.

**Note:** Only change the video mode when there are problems with the presets, e.g. choppiness or lengthy screen distortion.

**Compatibility mode (Video for Windows):** This is the standard mode that functions on all systems.

**Standard mode (hardware acceleration, Direct 3D):** This mode offers an extreme speed advantage by letting the graphics card directly calculate mixing, many effects and various transitions. Depending on the graphics card, performance can increase by 300%. The graphics card will not be used during export. If you activate this mode and have multiple graphics cards installed, you can also select which graphics card should be used.

**Important:** To use this mode the graphics card must have at least 128 MB memory available. You will need to install Direct 3D 9 or higher, and the graphics card driver must support "High Level Pixel Shader Language 2.0". MAGIX Movie Edit Pro 2016 checks the corresponding properties when this mode is selected, and switches it off if necessary.

**Alternative mode 2 (Video Mixing Renderer 9):** This mode uses the hardware de-interlacing function of modern graphics cards together with DirectX 9. Make sure that you are using the most recent version of your graphics card driver, which must be compatible with DirectX 9 to function properly. This mode works better than the standard mode (Overlay Mixer) for only a few graphics card models.

## Image formation in Vertical Blank Intervals (VBI)

The image formation takes place in the vertical blank intervals of the monitor signal (or the connected TV signal). This helps avoid image interruptions. Warning: Because of the necessary waiting time on the next VBI, this process adds significant computation time!

You can deactivate this option for digital displays such as TFT monitors. In "Overlay" mode, image formation occurs exclusively via VBI.

## De-interlacing

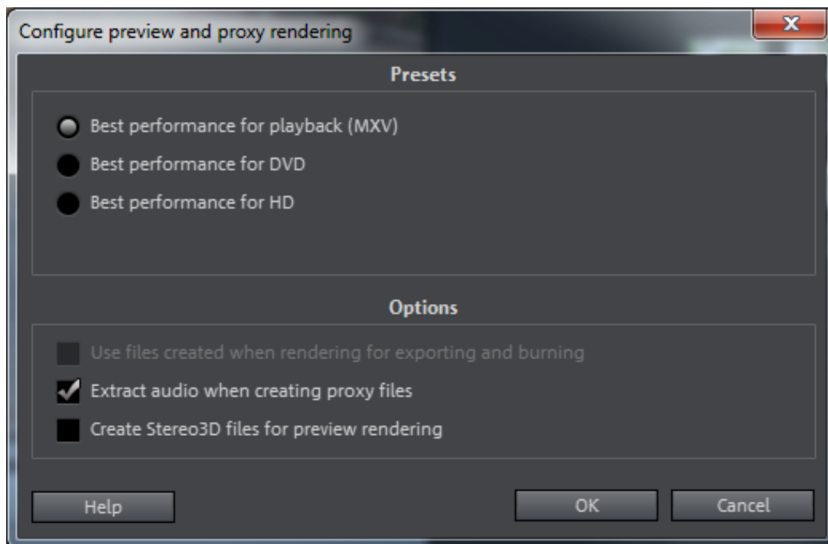
The DirectShow modes "Overlay mixer" and "Video mixing renderer 9" enable activation of hardware de-interlacing for the graphics card. For general information about de-interlacing and the options "Top/bottom field first", please read the corresponding article "De-interlacing (view page 370)" in the manual.

## Proxy and preview rendering (Plus/Premium version)

The proxy/preview rendering settings concern the way in which MAGIX Movie Edit Pro 2016 creates (view page 213) proxy files when importing or renders selected areas in the project window. This dialog can be accessed through "File" -> "Settings" -> "Proxy and preview rendering".

Keyboard shortcut: Alt + R

**Info:** The proxy and preview rendering function enables smooth preview playback by rendering complicated passages in the project in advance. You can start this function in the context menu of the marker bar. More details are available in the "Preview rendering" (view page 214) section.



**Presets:** Choose a preset that is suitable for your project. The rendered files will have a correspondingly higher or lower quality, and the quality of the preview will be determined.

- **Playback:** The lowest quality. Preview rendering should only be used for improved performance during playback in the program and not during export or burning. This is the default setting.
- **DVD export:** Playback in the program will be smoother and writing standard video DVDs will be faster.
- **HD export:** Playback in the program will be smoother and writing Blu-ray/AVCHD will be faster.

### Options

- **Use files created during rendering for export and burning:** If the resolution of the rendered files is sufficient for the finished movie, you can use them for the final export. This shortens the time required for creating the movie.  
This function is set as default when you select presets for DVD or HD export, since quality is also optimized for export.  
You cannot select this setting if you have activated the option "Best Performance during Playback".
- **Extract audio when creating proxy files:** In addition to the proxy files for videos, separate audio files (\*.wav) are created in order to improve playback performance.
- **Create Stereo3D files for preview rendering:** You can also view the preview in 3D.

**Note:** Rendering may take longer depending on the selected format and size of the set range.

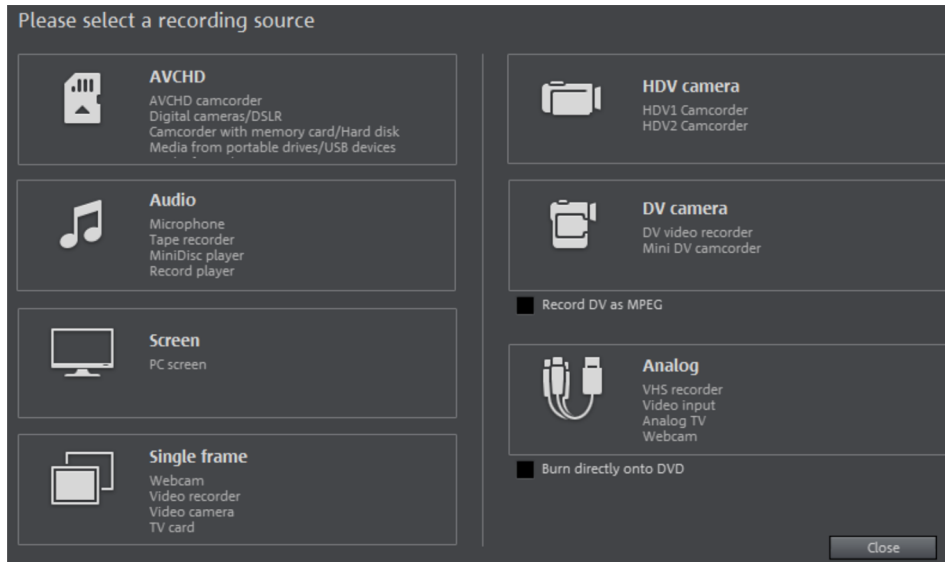
## Video recording

### Select the recording method



To start recording, click on the red "Record" button below the preview monitor.

The following selections are possible:



- **Import from AVCHD/SD card/USB** For importing from AVCHD cameras, removable storage devices and MTP devices.
- **HDV camera:** For HDV cameras
- **DV cameras:** For mini DV cameras and DV video recorders
- **Video:** For analog video cameras TV, analog TV, VHS recorders, webcams and others
- **Audio:** For microphones, cassette recorders, MiniDisc players, turntables, etc.
- **Screenshot:** Records directly from the computer monitor.
- **Single frame:** For single and series images from analog cameras, analog TV, or VHS recorders, webcams, etc.

## Recording AVCHD

When importing from AVCHD/SD card/USB, files created by the camera will be copied to the computer.

In addition to normal removable storage devices, so called "MTP devices" are also supported. "MTP" is short for "Media Transfer Protocol" and refers to the transfer protocol of media devices such as photo cameras, video cameras and MP3 players.

On older systems it is sometimes helpful to convert AVCHD files into MPEG-2 format when importing. A corresponding query appears during importing of these files.

**Note:** When importing AVCHD videos it is necessary to activate (view page 338) the MPEG-4 codec and download an audio package upgrade if necessary. MAGIX Movie Edit Pro 2016 offers this option as soon as a codec is required.

## Connect camera

Suitable cameras are essentially available in three varieties:

- **Cameras featuring removable data storage:** These cameras have a slot for a memory card. Your computer should have a card reader for the corresponding memory card, which you can then remove from the camera and insert into the card reader. Different camera models can also be connected via USB.
- **Cameras which burn DVDs directly** (usually 80 mm diameter instead of the regular 120 mm): The DVD can simply be taken out of the camera and inserted into the computer. For so-called "Slot in DVD" drives, look beforehand in the operational manual whether or not 80 mm DVDs (also called 3" DVDs or MiniDVDs) are acceptable.
- **Cameras with built-in hard drives:** The camera will respond as a drive as soon as it is connected via a USB cable to the PC. This additional drive will appear in Media Pool.

**Hint:** The listed options and procedures reflect our experience with what works. Still, we recommend you read the camera's manual for the exact sequence of actions and contact the manufacturer in case of problems.

## AVCHD/SD card/USB

After selecting the import, the following dialogue will open:



- 1 **Video source:** Here you specify the hard drive that will be used to access the storage medium or connected AVCHD camera.
- 2 **Save in following folder:** Create a target folder for the files to be imported.
- 3 **Advanced settings:** Adjust various settings for the name and date of the files to be created.
- 4 **Select:** This offers self-explanatory options for file display ("all", "only new", or "none").
- 5 **Preview monitor and transport control** Here you can play back, rewind or fast forward clips in the file list.
- 6 **Medium/general:** An info area for the files is provided to the right next to the preview monitor.
- 7 **Options** for displaying files, here you can also specify the criteria which will be used to sort the files.
- 8 **File list:** The contents of the selected drive are shown here. Use the display filters (10) to reduce the types of files shown.  
You can select every file separately using the little check boxes in order to import them later.

**Note:** The files are color-coded. The same colors indicate roughly the same recording times, so that you can quickly recognize which recordings were made at the same time. Color assignments come with a certain "intelligence", which means they take into account how far apart the displayed recordings are chronologically.

**9 Import:** Imports the selected file to the target folder.

**Cancel:** Closes the dialogue without importing.

**10 Display filter:** The display filter can be used to define if certain files should be hidden.

When you **uncheck** a box, the corresponding files will be hidden.

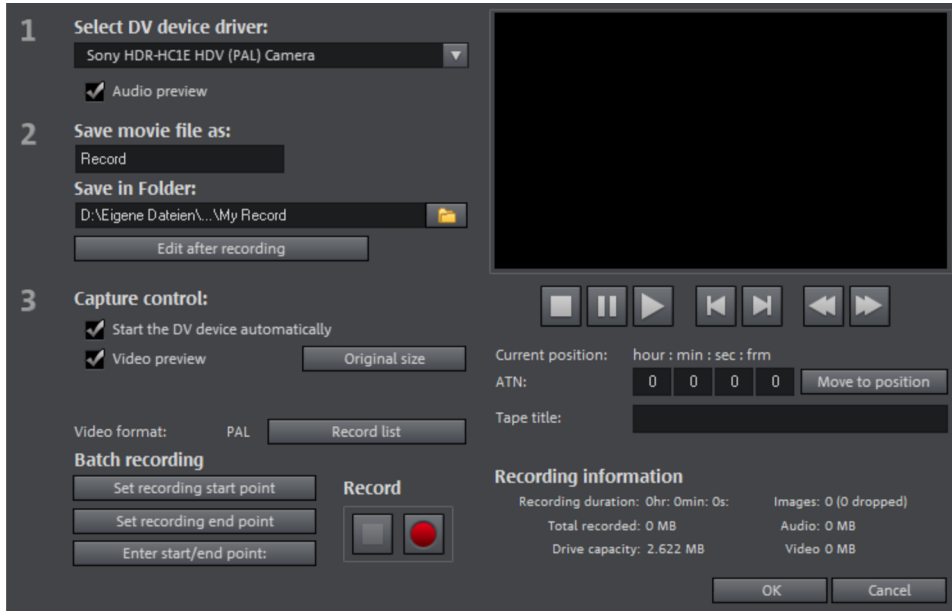
- **Videos:** Hides all video files.
- **Photos:** Hides all photo files.
- **Selected files:** All files selected for import will be hidden. Only the **files which have not been selected** will be displayed.
- **Not selected files:** All files which have not been selected will be hidden. This is useful if you want to check your selection before importing.
- **Imported files:** All files which have already been imported by MAGIX Movie Edit Pro 2016 from the specified device will be hidden.

**11 Import options:** Here you can define what happens after import.

- **Insert into movie:** The media will be directly inserted as an object into the open movie. When inactive, they will be simply copied into the target folder and can be selected from the Media Pool at any time.
- **Delete all media after camera import:** This option deletes the selected media after importing from the camera.
- **Close dialogue after import:** The dialogue closes as soon as the import has finished.

## HDV camera

Use this option to open the HDV camcorder record dialog. To do this, you have to connect an HDV camcorder.



The options in this dialog can also be found above in DV recording.

## DV camera

### DV devices

MAGIX Movie Edit Pro 2016 supports continuous editing of DV (digital video) files. A DV recorder or camcorder and a computer with a FireWire interface are required.

To record digitally, the digital output of the Mini-DV camcorder or DV video recorder must be connected to the DV interface of the PC, yet switched off. You must also have Microsoft's DirectX8a (or higher) installed on your PC. Now switch your camcorder to "video recorder" or "playback" mode (depending on your particular device) and open the DV capture dialog.

### Connect a DV or HDV camera

- Connect the digital output of the switched-off camera with the computer's DV interface (also called FireWire or iLink).
- Insert a DV cassette or the storage device into the camera.



- Switch your camera's operating mode to "Video recorder" or "Playback".

The camera is now ready to transfer video to the computer.

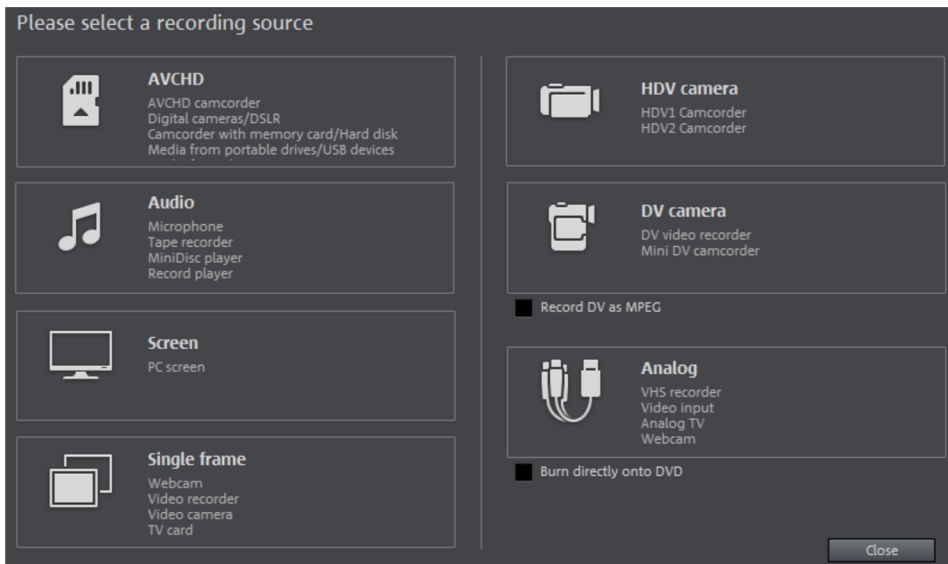
**Note:** You may also use a HDV camera in DV mode to, for example, transfer recordings in the old DV format. We have noted problems with this mode in many cameras, and therefore recommend that the **Record mode** of the camera is also switched to DV, switching the camera off and then on again.

## Capturing DV recorders or cameras



To start recording, click the "Record" button below the source monitor.

- Select "DV camera" from the recording dialog. Uncompressed DV capture requires approx. 220 MB per minute of video. If you would instead like to record using the more space-saving MPEG format, then you should first activate the "Record DV as MPEG" option.

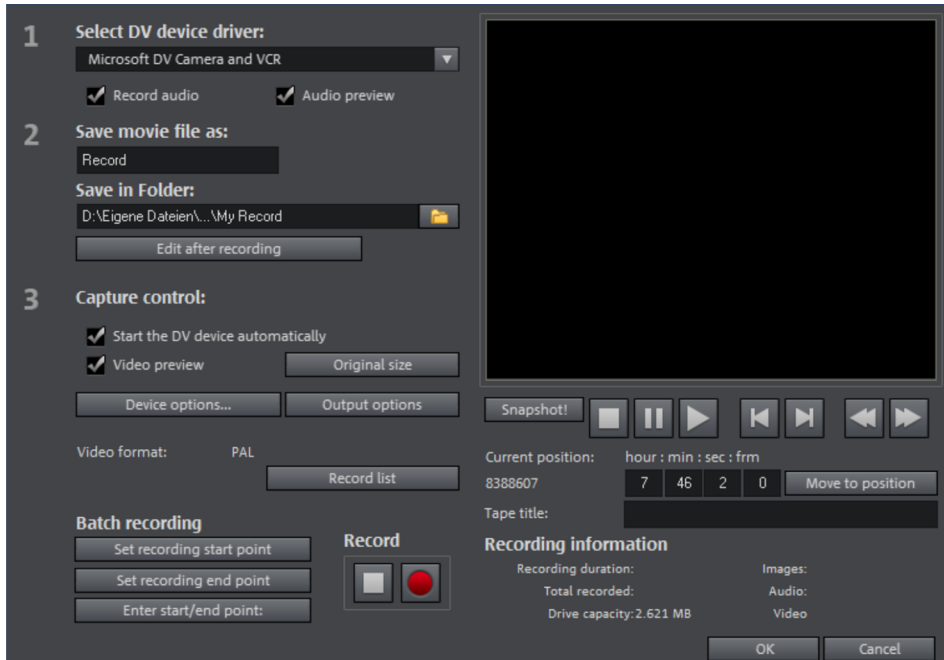


- This opens the actual recording dialog. Check to see if a DV camera driver has been selected.
- Name your recording. It's worth choosing a logical name which will allow you to find it easily again on the hard drive.
- You can access the appropriate place on the camcorder tape by using the remote control buttons: shuttle forwards, backwards, and start/stop playback. To start recording, click on the "Record" button. Keep an eye on the remaining hard drive space.

- Cease capturing with the "Stop" button and exit the record dialog. You can see the recording in the film-strip in the lower third of the screen.

**Tip:** In the DV recording dialog, you can set clips from the DV video which then will be recorded one after the other (batch capturing). Read more on this in the chapter "Batch processing" (view page 91).

## "DV capturing" dialog



**Note:** Keep an eye on the available hard drive space before each recording. DV capture requires approx. 220 MB per minute of video!

Select DV device driver: The device driver for your DV device should be listed here. If "Record audio" is deactivated, then video without sound is recorded only. "Audio preview" activates the audio output of the recording.

**Note:** The audio preview is deactivated at first, since DV cameras usually include built-in speakers.

**Save movie file as/save in folder:** Enter the name of the movie to be recorded. You can also select the folder where you wish to store your video file. The default

recording directory is set by default, but you can change the Path settings (view page 74) under menu item "File -> Program settings -> Path settings".

**Edit after recording:** This provides access to the automatic editing options.

**Start the DV device automatically:** Starts the DV recorder or DV camera automatically when the "Record" button is pressed. This does not function with all digital cards/video devices.

**Video preview:** On the preview monitor you can see a preview of your movie.

**Original size:** This option allows you to preview the video in the original size. To return to the dialog use the "Esc" key.

**Batch recording:** Here the start and end points can be set for the capturing. This allows you to search the entire video for all captures to be used and list them for planned batch capture. This is then processed in sequence when the recording starts (via the red button). That way you don't need to record each scene individually. You simply determine recording time points, and the computer takes care of the rest. To set the start and end points precisely, click "Enter start/end point (view page 90)"

**Record list:** Use this button to view the available list of already recorded videos and scheduled recordings. All entries from the list can be selected and deleted.

**Record:** Starts the recording process. Also contains the list of scheduled recordings. These are processed step-by-step (batch capturing).

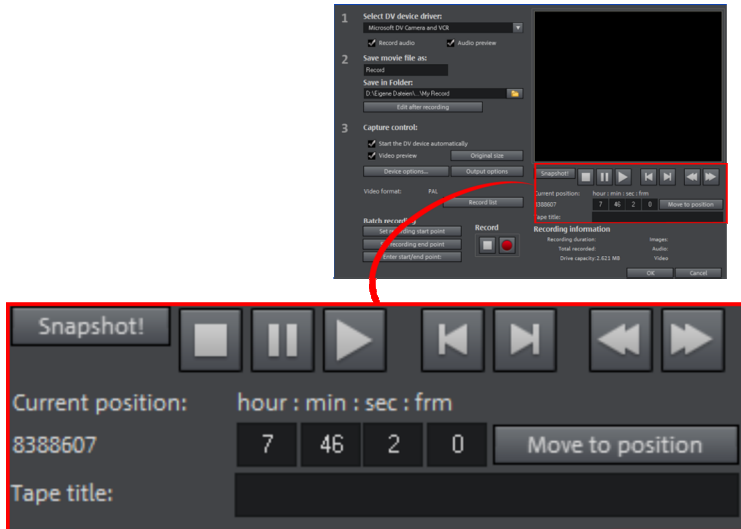
**Stop:** Stops the recording process.

**Snapshot!** With the Snapshot! button, you can create a frozen image directly from the preview monitor. Start the camcorder and watch the preview window. When the image you want appears, click "Snapshot". Or you can navigate using the remote control to the position you want, and stop there in **Pause mode**. Stopped playback on the DV camera will not deliver an image! The images are saved in the record directory as graphics files in the set resolution.

## Remote control

MAGIX Movie Edit Pro 2016 also supports remote controls for most digital camcorders. This does not function with all digital cards/video devices. If your hardware does not support the remote control function, the buttons will not be usable.

The transport controls required for this are featured in the DV or HDV recording dialog.

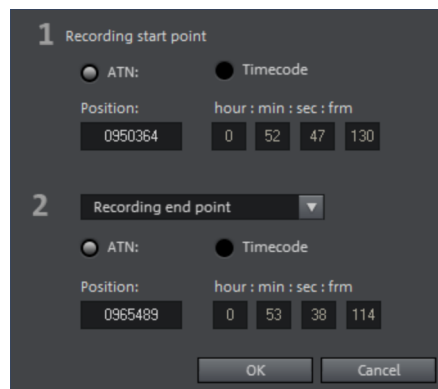


**Tape title:** Enter a name for your tape here. MAGIX Movie Edit Pro 2016 requires this name for the DV logging feature.

**Recording information:** Displays various information about your recordings.

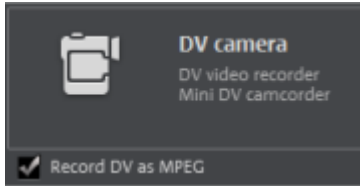
**Set recording start/end point:** Enter the exact start and end point or the recording length for a scene.

Both values can be entered as ATN (absolute track number) or as a timecode in hours:minutes:seconds:frames.



## DV as MPEG

This recording selection dialog option allows you to transfer DV recordings directly into the space-saving MPEG format on the harddisk.

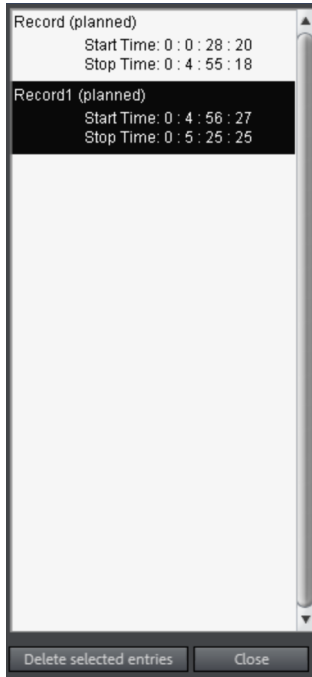


From the "DV as MPEG" dialog window you can find MPEG encoder settings options under "Advanced".

You can also burn your DV material direct to disc without any intermediate steps.

## Recording list

Set the start and end points for the capture here. This allows you to search the entire video for all captures to be used and list them for planned batch capture. This is then processed in sequence when the recording starts (via the red button). That way, you don't need to record each scene individually. Simply specify the recording time points and the computer takes care of the rest. To set precise start and end points, click "Enter start/end point (view page 90)"



**Record list:** Press this button to view the available list of already recorded videos and scheduled recordings. All entries from the list may be selected and deleted.

Every batch recording is automatically logged. Conversely, every "manual" DV and HDV recording is transferred into the recording list in order to restore lost recordings without much effort.

## Logging

Logging means that MAGIX Movie Edit Pro 2016 also saves the original save location, position and additional information (metadata, e.g. scene, take, rating, comments, etc.) about DV video and audio files.

Everything copied using DV recording, DV to MPEG recording and HDV recording appears in the recording lists of the corresponding recording dialog. Recordings for which the corresponding video material is no longer on the hard disk will appear as "planned recordings".

If MAGIX Movie Edit Pro 2016 does not find the corresponding DV and WAV files during the loading of a video, it will ask that the corresponding DV tape is inserted into the connected camcorder again for automatic scene import.

You no longer have to save DV AVI and audio files (which can be very large). If at a later time you would like to work on a film again, but do not have the space to keep the material for it on your hard disk, then you can simply delete the bulky DV AVI and audio files.

## Analog video recording

### Connect analog video source

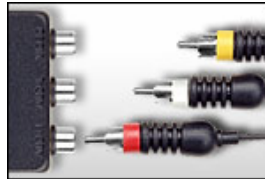
Connect the video out of your video camera, DVD player or VCR to the video in (TV, video, or video-in graphics card) of your computer, and the audio out to the line in of your sound card.

Due to the variety of device configurations, it is difficult to say which cable will function best with your setup. If you're not sure, check the manual of your VCR or your TV-, video- or graphics cards.

**Example:** Many VCRs have a SCART output and most DVD players have three RCA outputs (two for the stereo track, one for the image). In such cases, you will need a SCART to RCA adapter, a cable with 3 RCA plugs at each end.



SCART/RCA adapter



Scart/RCA adapter with 3 RCA jacks

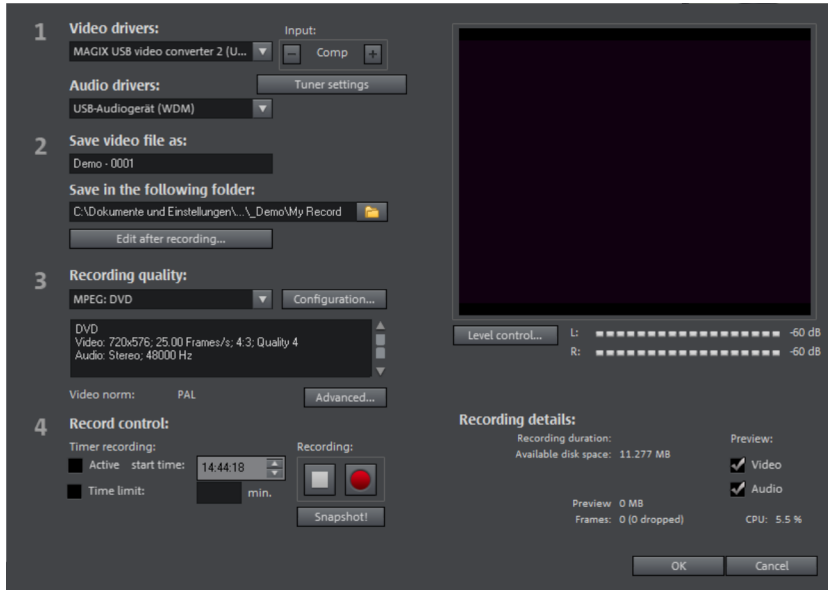


Stereo RCA/mini phone jack adapter

Most sound card inputs are mini stereo jacks. To connect the audio out of your VHS recorder to the sound card audio in, you will need a stereo RCA/ mini phone plug adapter.

You will have to purchase a cable with three RCA plugs and a stereo RCA/mini phone plug adapter.

## Analog video recording



**Video/Audio driver:** Here you can set up the video card or sound card for recording. In practically every case the driver software supplied with the hardware must be installed.

**Hint:** Under "video driver" you will find a "screen capture" entry in the Plus/Premium version. You can read about how it functions in the "Record screen contents (Plus/Premium version)" (view page 100) section.

**Input/Tuner settings:** If your video capture card supports multiple sources, i.e. your card also has a TV tuner or multiple inputs (SVHS, composite, etc.), then you can select the proper recording source and the TV channel to be recorded here.

**Save movie file as/Save in folder:** Enter the name of the movie to be recorded. You can also select the folder where you wish to store your video file. The standard recording folder is set as default. The location of this folder can be changed in "Path settings (view page 74)" under "File -> Program settings -> Folders".

**Edit after recording:** Use this to access the automatic editing options.

**Record quality:** You can choose between various predefined recording qualities in the list box according to your computer's processing power and how you wish to use the picture material. They are sorted according to picture quality. Use **Configuration** to fine-tune the quality for the preset.



Presets displayed with MPEG record directly in MPEG format.

**Tip:** Use the presets marked MPEG if you want to burn your recordings straight away, since smart encoding can omit laborious encoding after recording.

**Advanced...:** Opens the video driver settings dialog (view page 95).

**Capture control:** Here you'll find the "Red" record and "Stop" buttons. With them, you can start and stop recording.

**Timer recordings active/time limit:** Here you can specify a recording start time and length, and thus turn your PC into a fully functioning VCR.

**Snapshot!:** With the "Snapshot" button, you can create a still image directly from the preview monitor. The images are saved in the recordings folder as graphics files in the resolution you have set.

**Recording details:** This shows statistical information such as the recording time, available space on the hard-drive, the recorded frames, and the "dropped" frames. Dropped frames are frames that have been left out because the computer processor is too slow for the selected image format and cannot accept all incoming frames.

**Preview:** Some graphics adapters allow you to reduce the system lead by deactivating the video preview. If you hear an "echo", deactivate the audio preview.

## Advanced configurations in the video capturing dialog

Here you can adjust certain settings for the video recording driver.

These dialog boxes, so-called "property sheets," come with the video card drivers. These driver-specific performance properties may deviate depending on the cards. We also have a very limited influence on the behavior of these drivers. If you encounter any difficulties, please contact the video card manufacturer for the latest driver updates.

**Source:** Sets the crossbar of the video card.

The crossbar determines which video and audio input signal will be recorded. The crossbars are connected in series to the video recording chip itself. In the output field, the video **output** (for the crossbars) is the **input** for the recording chip (video or audio decoder-in) of the video card. In the "Input" field, select the signal source that will be used by the video card to capture for this input. Many video cards have separate crossbars for audio and video. If you have a problem, try out the different configurations until the right sound matches the right image.

Composite-in = the normal video input (typically a cinch jack)

S-video = S-video input (mini-din jack)

SVHS-in = SVHS input (special cable)

Tuner-in = TV signal of the integrated tuner

## Display

**Video decoder:** If the picture only appears in black & white or it flickers, the video standard may be set incorrectly. In mainland Europe, **PAL\_B** is used.

**VideoProcAmp:** Fine-adjustment of colors, brightness, contrast etc. We recommend against changing any of the manufacturer's settings.

**Format:** Please do not change anything here. The capturing format is set in the "Recording quality" option in the video recording dialog.

## Station selection

This option is only available if a TV tuner is integrated into your video card.

## Audio

Songs, noises, or instruments can be easily recorded in MAGIX Movie Edit Pro 2016 using the audio recording function. A hooked-up microphone or various audio devices (especially a stereo system) can be used as recording sources.

## Connecting the recording sources

First, the recording source must be connected to the computer. There are several possibilities depending on the equipment you are using:

- If you would like to import music from a stereo system, use your sound card's line-in input. If the stereo system amplifier comes with separate line-out or AUX out connectors, they should be used. In this case, they have to be connected to the computer's line-in. Hi-Fi amplifiers usually have RCA (composite) connectors and the computer has mini stereo connectors. You need to then get a suitable cable with two small RCA (composite) connectors and a mini stereo jack.
- If the amplifier comes without separate outputs (other than the speaker connectors), you can also use the headphone jack for recording. Normally, you will require a cable with stereo or mini stereo jacks. This type of connection has the advantage of a separate volume control to set the headphone input signal level. However, headphone jacks are often not very high-quality. For this reason, you should use line-out outputs whenever possible.

- To record cassettes from a tape deck, connect the tape deck's line-outs directly to the computer's line-in.
- When recording LPs, the record player's outputs should not be connected directly to the computer because the phono signal has to be pre-amplified. In this case, connecting through the headphone jack or an external preamp is recommended. Some record players also have normal line-out connections.
- If you would like to make recordings with a microphone, connect it to the computer using the microphone input (usually a red jack).

## Adjusting the Signal Level

Adjusting the signal level to the sound card is also recommended to get the best sound quality during digital recording.

Once a recording source is connected to the sound card, the "Record" button opens the recording dialog and starts the recording source.

You can now adjust the recording level with the help of the LED display in the recording dialog. For this, you must first check off "Show Levels".

If the adjustment is set too high, distortion occurs and the incoming signal must be reduced. If you have connected the source through either an amplifier or tape deck output to the sound card, you can only reduce the signal level in your sound card's software mixer interface. You can access the mixer directly from within the recording dialog via the "Recording Level" button.

If you reduce input sensitivity by using the input fader, the resolution at which the analog signal is digitized is also reduced. Try to set these automatic controllers to the loudest sound level possible.

The maximum setting for an optimal level is the loudest part of the material. The loudest part should be adjusted to be the maximum. The actual recording begins when you press the "Record" button. At the end of the the recording you will be asked if you want to use the recording. Upon confirmation, the newly-recorded material will be placed at the next free position of the start marker in the arrangement.

## Audio record dialog



**Audio driver:** Selects the sound card for the recording.

**Save audio file as/ Save in folder:** Here you can select the title of the audio file you wish to record. You can also select the folder where you wish to store the file.

**Recording quality:** Sets the sound quality of the recording. In the preset menu you can choose between medium wave radio ("AM tuner"), UKW ("FM Radio"), DAT (Digital Audio Tape) and CD quality.

**Display Volume control:** Using the peakmeter, you can monitor the level of the incoming signal. Please read more on this in the chapter "Adjusting levels" (view page 97)

**Record:** This button starts the actual recording.

**Stop:** Click this button to stop recording

**Normalize after recording:** With this option activated, your material's volume is raised to a proper level after recording is completed. In order to achieve good results, you should try to record the source as loud as possible without overmodulating it. To do so, refer to the peak meter reader in the recording dialog.

**Play while recording:** This option is particularly important for spoken commentary, etc. If activated, the selected movie (or selected scene if recorded in the "Edit" screen) is played while recording. This acts as orientation for the movie.

**Advanced:** Use this button to open a window where you can select from special features:

## Advanced settings for audio recordings

- **Mono recording:** Activate to record in mono. This reduces the required memory space in half. Mono recordings are recommended for voice recordings made using only one standard mono microphone.
- **Real-time resample to project's current sample rate:** Automatically matches the sample rate of a new file to be recorded with the sample rate of the current movie's sound track (set in the video recording).
- **Automatic volume reduction of other audio tracks ("ducking"):** To add narration or other sound material to a video that already has sound volume levels set, activate the option "Automatic reduction of sound volume of remaining audio tracks". This automatically reduces the volume of audio objects in the arrangement during the recording session ("ducking"). This is achieved using an automatically configured volume curve: Before and after the recording, other tracks will be faded in or out, resulting in a homogeneous total volume level. (Lowering of volume level during spoken comments is also called "Ducking".)

## Single frame

Single frame recording may be used to record snapshots from the connected video source. This requires a DirectShow compatible video recording or TV card or a corresponding USB device (e.g. a webcam).

The time control function allows you to automatically take snapshots. This is useful for the following applications:

- to create slideshows using videos
- for animation films (stop-motion recording)
- for video surveillance
- or in time-lapse photography

The recorded images are added to the current arrangement.

## Timer-controlled recording

**Recording interval:** When active, starting recording produces a sequence of images. Snapshots are saved according to the selected time interval and numbered sequentially. For example, if snapshots are taken every two seconds and then inserted

every five frames into the slideshow, then a ten times accelerated time lapse recording will result.

**Photo length in frames:** Specifies how long the photos appear in the slideshow.

## Enhanced single-frame recording dialog settings

You can adjust certain settings for the video recording driver.

These dialog boxes, so-called "property sheets", come with the video card drivers. The driver-specific features may slightly vary from driver to driver. The MAGIX team has little direct influence on the performance of the various drivers. If you encounter any difficulties, then please contact the video card manufacturer for the latest driver updates.

**Input:** Sets the crossbar switch of the video card. This lets you define what video and audio signal is used in the recording. The crossbars are connected in series to the video recording chip itself.

**Output:** In the "Output" field, the video output (for the crossbars) is the input for the recording chip (video or audio decoder in) of the video card. In the "Input" field, you select the signal source to be used for this input by the video card during recording.

Composite in = the normal video input (typically a cinch jack)

S-VHS in = S-VHS input (special cable)

Tuner in = the TV signal of the built-in tuner

**Video decoder:** If the picture only appears in black & white or it flickers, then the video standard may be set incorrectly. PAL\_B is used in Germany and most European countries (France: SECAM; US/CAN: NTSC).

**VideoProcAmp:** For fine tuning of colors, brightness, contrast, etc. We recommend against changing any of the manufacturer's settings.

**Format:** Do not change anything here! The capture format settings can be changed under "Resolution" in the "Recording" dialog box.

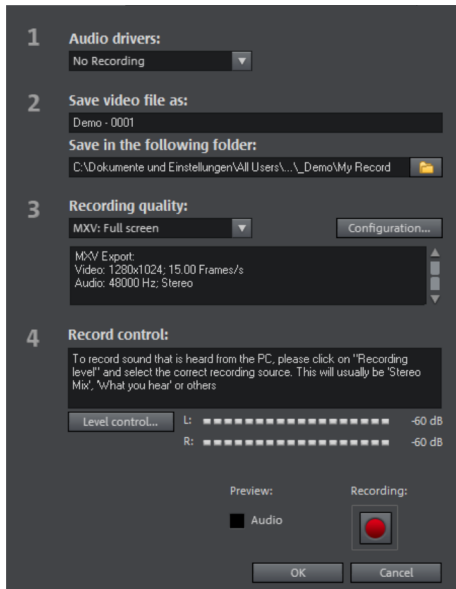
## Screen Capturing

Use this feature to record everything that moves on your monitor. This process is called "screen capturing".

**Note:** This function is available only in the Plus/Premium version.

## Step-by-step screen capture

Use this feature to record your screen content. This process is called "screen capturing".



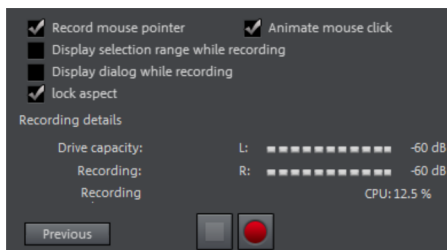
- Under **Recording quality**, you will find various presets for different applications. You can either record the entire monitor ("fullscreen"), a frame of variable size (e.g. to film the Windows Media Player display), or a different video player. Click "Configuration" to make custom size adjustments.

**Hint:** Because many video players work with overlay, it is recommended to open each player **before** starting the capture! This way switching into "Overlay" mode can be prevented.

- Select the "Screen" option in the recording selection dialog.

An additional dialog with a red record button, a black stop button as well as a frame with dashed bordering appears.

- Activate the option "Record mouse pointer" to record the movements of the mouse pointer.

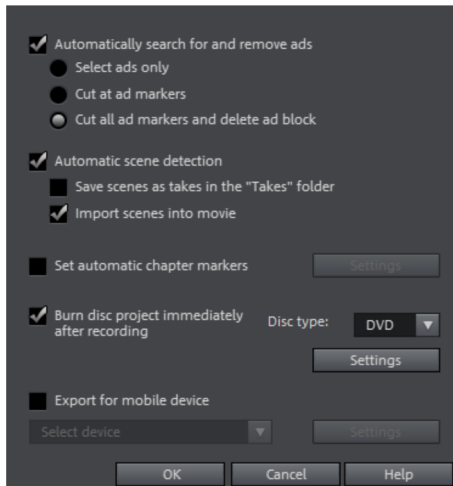


- Now select the screen area you wish to record, i.e. the screen of the video player in which the video is playing. Drag the frame over the area you wish to record and adjust its size as required by dragging the edges and corners.

**Note:** If you previously selected "Fullscreen", the window will be hidden.

- To start recording, press the red record button. The recording starts; the record symbol appears in the task bar (tray).
- If you are finished with everything, click on the record button or the stop button to stop recording. Recording ends and the recording dialog is visible once again.

## Edit after recording



The "Edit after recording" dialog can be opened from the "HDV Camera", "DV Camera" and "Video" recording dialogs.

This dialog offers the these options:

- **Automatic scene recognition:** This divides the footage into scenes. Please also read the section "Automatic scene recognition" (view page 218).
- **Automatically set chapter markers:** Please also read the section "Set chapter marker automatically (view page 286)" in the chapter "Edit" in the PDF manual (press "F1").

**Burn project immediately after recording:** You can use this option to record and burn to a disc in a single step. Simply select the format you would like to burn, insert a suitable blank disc into the drive, and press record.

**Note:** Make sure that the selected recording quality corresponds with the disc type (for DVDs the preset "MPEG DVD").



If you use your own settings for MPEG encoding (e.g. half image resolution for long-play DVDs) make sure that settings for recording and later for burning are the same so that no new encoding is necessary (Smart encoding).

After recording, the program automatically switches to the "Burn" screen, the burn window opens and the disc is burned. The last set layout is used for the menu layout for the DVD.

**Tip:** This function is particularly suitable for handling lengthy projects in one go. You can start recording in the evening and have the finished DVD by morning.

**Export for mobile device:** The recorded movie is immediately converted into the format of the selected mobile device and transferred. The preset in the list field is the device which has been selected in the Export video/audio (view page 274) dialog.

**Settings:** Opens the Export settings (view page 267) for the selected target device.

## Transferring a Movie Edit Touch Project from Android

Projects from Movie Edit Touch for Android can easily be transferred to MAGIX Movie Edit Pro 2016. While MAGIX Movie Edit Pro 2016 is running, the Movie Edit Touch project is transferred from an Android tablet to MAGIX Movie Edit Pro 2016 where it can be edited in more detail as a separate movie.



**Tip:** Scan the displayed QR code with your Android tablet to open the Movie Edit Touch product page in the Google Play Store  
<https://play.google.com/store/apps/details?id=com.magix.android.met>.

### Example Application

You've recorded, sorted and roughly edited some video footage with your tablet and Movie Edit Touch. Now you want to transfer the Movie Edit Touch project to MAGIX Movie Edit Pro 2016 and finish it there.

Movie Edit Touch projects that have already been transferred can be transferred again to update them. Keep in mind that this will overwrite the corresponding project file in MAGIX Movie Edit Pro 2016. For this reason it is a good idea to save the movie in MAGIX Movie Edit Pro 2016 under a different name.

## Requirements

- The Android tablet and the PC with MAGIX Movie Edit Pro 2016 are on the same network
- Movie Edit Touch is installed on the Android tablet
- Android version 4.3 or higher

## Instructions

1. Start MAGIX Movie Edit Pro 2016.
2. Start Movie Edit Touch on your Android tablet.
3. Open the Movie Edit Touch project.
4. Activate the Edit View in Movie Edit Touch.
5. Press the following button in Movie Edit Touch:



6. Confirm the project transfer by clicking the "Start" button.

### Result:

4. Movie Edit Touch searches for MAGIX Movie Edit Pro 2016 on the same network.
5. When Movie Edit Touch finds MAGIX Movie Edit Pro 2016 on the same network, MAGIX Movie Edit Pro 2016 displays a corresponding query.
7. Confirm the transfer of the project to MAGIX Movie Edit Pro 2016.

**Result:** The Movie Edit Touch project will be transferred to MAGIX Movie Edit Pro 2016 and opened as a separate movie.

If another project is currently open, MAGIX Movie Edit Pro 2016 will ask whether the new movie should be added to it or saved as a separate movie.

## Notices

- If you have edited the Movie Edit Touch project on your tablet since transferring it and want to transfer it again, make sure that this project is not currently open in MAGIX Movie Edit Pro 2016, otherwise it might be overwritten.
- Changes you have made to the project in MAGIX Movie Edit Pro 2016 will be lost when the Movie Edit Touch project is transferred again.

## Problems and Solutions

Movie Edit Touch cannot find MAGIX Movie Edit Pro 2016.

- Check the network connections on the Android device and the PC. Both devices must be on the same network.
- Make sure that the following ports in the network are accessible:
  - UDP-Port 6666
  - The HTTP Port can be dynamically assigned through the Android device.

The project cannot be transferred again.

- The project might still be open in MAGIX Movie Edit Pro 2016. Close the project in MAGIX Movie Edit Pro 2016 and repeat the transfer of the Movie Edit Touch project.

## Import a non-copy-protected DVD

Click in the Media Pool under "Import" on "Computer" and select by double clicking the DVD drive where the DVD to be imported is located.

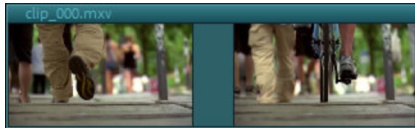
Now you can load the listed VOB files into the project as described in the "Add objects into the project" chapter. MAGIX Movie Edit Pro 2016 recognizes which files belong together, so that you only have to load one file.

## Objects

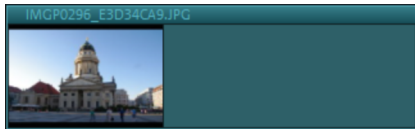
In the MAGIX Movie Edit Pro 2016 "Timeline" mode you are dealing with objects. The general term "object" includes all media types that are present on the tracks in the project window. The following object types are found in MAGIX Movie Edit Pro 2016:



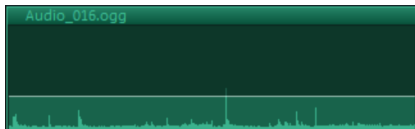
**Combination objects:** Combination objects are video objects with an image track and an audio track. In the context menu, you can add the waveform representation of the audio track or add the sound as an independent audio object.



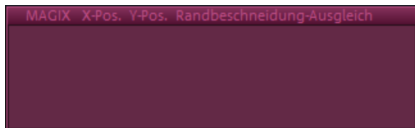
**Video objects:** Video objects include a file extension typical for videos (e. g. \*.mpg, \*.avi, \*.mxy). Depending on the length of the video object, you will see several frames representing various positions in your video.



**Image objects:** Image objects are photos or other static images. They have a file extension typical for an image (e. g. \*.jpg, \*.png, \*.bmp). In contrast to video objects, you'll always see only one frame.



**Audio objects:** All objects that contain only sound are considered audio objects. They have an extension typical for audio (e. g. \*.ogg, \*.mp3, \*.wav). With a right-click you can add a waveform display to any audio object.



**Title objects:** Title objects are created using the title editor (view page 130) and contain the text that appears in your projects. They have no file extensions.

In the following chapter you can read about working with objects. The workflow for all object types is the same. In the following chapter you can read about what you can do with these objects. The workflow for all object types is the same.

**Tip:** You will find many functions in the object context menu (view page 301), which can be opened by right clicking on the corresponding object. There, you will also find the "Object properties" dialog, where in addition to current settings you can also change interlace settings for the object.

## Insert object into the project

### Data selection using the preview monitor

You can view and cut your footage in the preview monitor before importing. There are various buttons on the transport console (view page 45) for this. There is a preview function for most of the files in the Media Pool.

- Use the playback button to start the preview of video or image objects in Media Pool. A preview is also provided for special objects like titles or transitions.
- Audio files from the Media Pool can also be previewed via the playback button.

### Full-page view of image

- The option "full screen" in the context menu maximizes the preview monitor. Alternatively, a double click on the monitor or press "A + Enter" to maximize the window. The fullscreen view is especially recommended for working with two screens; one screen for the film preview, and the other for the project window.
- You can also shift the monitor into full screen mode and access it via the context menu (right mouse button). There, you can also hide and display the basic transport controls.
- With "Esc" you will go back to the normal view (or click on "smaller" button to the right in the fullscreen mode).

### Show movie overview

The option "Film overview" in the "Window" menu enables an overview of the entire project window. All objects in the project window will be displayed in the program monitor. The overview display is especially recommended for work with long movies because the reduced overview in the program monitor and the zoomed detailed view in the project window present a good combination.

The film overview can be used for moving around in the movie and for editing certain parts:

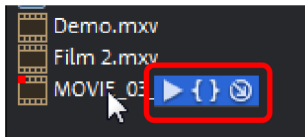
- When you click on a certain object in the video monitor, the project window will zoom on that object.
- Using the mouse, you can draw a frame in the video monitor – and the corresponding range will be zoomed in the project window.
- When you move the playback marker in the video monitor, the project window playback marker will also move correspondingly.

**Tip:** If you use this option very often, you can use the keyboard shortcut (Shift + A).

## Load files

Media files can be loaded into the project window from the Media Pool in several different ways:

- **The fastest way:** Drag the desired file from the Media Pool into the desired track. If an object is already present at this position, the file is inserted at the desired time position on the next empty track below.
- **Load several files:** If you want to load several files, hold down the "Ctrl" key while clicking on the entries you want to use. If you want to load a sequence of files, hold the "Shift" key and click on the first entry and then on the last. All entries in between will be selected. Then you can drag all of the selected files into the project window with the mouse button held down.
- **Insert by command:** You can also use the commands of the "Insert modes" (view page 64).
- **Pop-up symbol:** For each entry in the Media Pool there is a two to three-part pop-up symbol. It appears when the mouse pointer is positioned over an entry.



**Preview:** Click on the playback icon to play back the medium: Video and image files are displayed in the preview monitor, and audio files through the sound card. There is also only a preview for the provided templates.



**Trim:** If you only want to import a certain part of a video clip into your project, click on the Trim icon with the curved brackets. The video clip will then appear in the preview monitor. Now use the brackets to mark the area you want to import on the timeline. Finally drag & drop the video from the preview monitor into the project by clicking on it and holding down the mouse button. Only the area previously marked by the brackets will be imported (view page 109) as a video object.



**Import:** Click on the Import icon to load the selected medium to the project window.


## Files with multiple audio tracks

MAGIX Movie Edit Pro 2016 also loads VOB files that contain multiple audio tracks. After the VOB file has been loaded, simply click the audio object created and select the desired audio track.

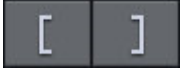
**Note:** To view and select audio objects in the arrangement, Timeline mode (view page 30) must be active.

## Loading parts of movie files

Videos can be trimmed in the preview monitor before being imported. To do this, proceed as follows:

1. Select the desired file:
  - by double-clicking in the Media Pool,
  - clicking the middle icon in the Media Pool  
 or
  - drag and drop files from the Media Pool into the preview monitor.
2. If you want to have an overview of the video material, first locate the edges of the range. Play back the selected file in the preview monitor and determine the range you want to use in the project.
3. Set the range edges (In Point and Out Point):

**Tip:** You can also set the range edges with the keyboard during playback. This keyboard shortcut is especially useful when setting precise positions with the "Shuttle and jog" wheel.

- Move the range edges by holding down the mouse button,
  - set the range edges with the button  
 or
  - set the range edges with the keyboard shortcuts I (= In Point) and O (= Out Point).
4. Apply the range to the movie:
    - Click on the image in the preview monitor and drag it into the project window by holding down the mouse button.
    - Use the Insert modes (view page 323) to apply the selection to the project window.  
 You can also use the Insert modes keyboard shortcuts (view page 323)!

**Result:** An object corresponding to the selected area will appear on the track.
  5. If you want to load several ranges from the same video file, repeat steps 3 and 4 until all desired ranges have been applied.

## Select and group objects

To edit or delete objects using menus, you must first select them. To do so, simply click on the object you wish to select. Objects will change color to show that they have been selected.

When the Shift key is pressed, multiple objects are selected. You can open up a rectangle positioning the mouse over the object, then holding down the mouse button and marking all objects within the rectangle ("elastic band selection") by left-click-dragging.

Any object can be combined with others to make up a group, to avoid the objects being unintentionally moved out of relation to each other. Once they are combined, clicking on one object of a group will select the entire group. To group or ungroup objects, use the buttons in the tool bar or the corresponding commands in the "Edit" menu.

## Move Objects

Hold down the mouse button to move selected objects to any tracks and positions via drag and drop. It is recommended to place objects that belong together on neighboring tracks and to create separate tracks for audio and video objects. For this reason, videos that should overlay each other should usually be placed on the same track.

If the Shift key is pressed, objects can be moved from one track to another, without the time position being changed.

## Cutting objects

All objects can be split. Each object section then becomes an independent object:



1. Select the object to be cut.
2. Position the playback marker at the position where the movie is to be cut.
3. Click on "Cut" (view page 63) button or select the "Cut" option in the "Edit" > "Split scene" menu.

**Note:** If the commands "Split scene" and "Remove beginning/end" are applied without a selection, all objects at the position of the playback marker are cut.

**Tip:** You can find detailed step-by-step instructions on how to remove (view page 32) unusable scenes from video material in the "Quick start" chapter of the print manual.



There are three options for joining split objects:

- Click on the undo button in the lower toolbar (view page 60). This will work only directly after applying the split command.
- In order to rejoin these split objects at a later stage, simply highlight the individual parts and select the command "group" to join the selected objects together into one group.
- Remove the back object and move the front object forward and with the bottom right handle put it back to the original length.

## Duplicate objects

Objects may be duplicated very easily. Click on the object to be copied with the mouse while holding down the "Ctrl" key. This generates a copy, which you can immediately drag to the desired position or cut separately.

## Object handles

All objects can be re-sized with their lower edge "object handles". Move the mouse over one of the lower corners of the object until the mouse pointer becomes a double arrow. Move the mouse over one of the lower corners of the object until the mouse pointer becomes a stretch symbol.



5 "handles": Length, fade, transparency (volume)

An object can be faded in or out with the handles to the left and right upper corners of the object. Cross-fades between different objects can be created by overlapped positioning of objects that are fading in and out. The length of the cross-fade can be adjusted with the handles.

Using the transparency/volume handle located centrally at the top of the object, adjusts the transparency of video and Bitmap objects, or the volume of audio and image objects.

If you adjust the middle handle of a video object all the way down, the object will become transparent. If a second object is located on a track above it, a black color will appear from below it, so that brightness will be reduced.

## Trim Objects

Trimming provides exact placement of object borders or transitions. MAGIX Movie Edit Pro 2016 has two different trimmers, and these can be opened using the context menu for a video or image object.

### General advice for operating both trim editors

**Play functions:** The trim window contains its own play functions that allow the object to be played individually or in relation to the arrangement.

The **right play button** plays the arrangement normally. Replays can sometimes appear shaky because the processor may be over-worked. Those frames that the processor cannot calculate quickly enough are left out.

The **middle play button** plays the arrangement “frame by frame”, which means no frames are left out. Depending on the processor load, playback may thus be slower, but still smooth.

The **left play button** renders material before playing, i.e. the current settings are calculated first and then exported. This method ensures a smoother playback.

With the **fast forward and rewind functions** you can change the range start in the timeline. This allows for complete control of transitions between two videos.

**Increments:** A click on the arrow buttons in both trim editors moves the handle or the material within an object exactly by one frame. With the Ctrl key you can increase the frame rate gradually to 5 frames per mouse-click.

## Trimmer for individual objects

A schematic display of the selected object and its handles can be found in the center of the trimming window.



**Fade in/out (4, 5):** These buttons adjust the upper fade handles of an object.

**Object content (3):** Here you can move the video material to be played without changing the object length.

**Position (2):** Moves the object on the track.

**First frame/End fade-in (7):** Toggles the left monitor between the first frame of the object and the end of the transition.

**Start fade-out/Last Frame (8):** Toggles the right monitor between the start of the transition and the last frame of the object.

**Left/right arrow buttons (1, 6):** Here you can adjust the lower object handles.

**Next object/cut (9, 10):** The buttons below and to the right skip to the next/previous object and/or cut in the project window. These buttons make it easy to move and trim objects in the arrangement without having to leave the trimmer.

Keyboard shortcut: Shift + N

## Cut trimmer



A schematic display of the selected transition and its handles can be found at the center of the trimming window.

**Left arrow buttons (1):** These buttons move the last frame of the first object while adjusting the second. The length of the transition remains. The display indicates the relative change in comparison with the starting situation when the trimmer was opened.

**Position (2):** Moves the second object. The length of the transition is changed. This corresponds with shifting an object in the project window.

**Object content (3):** Moves the movie under the second object. The length of the object and the object itself are not changed.

**Crossfade (4):** Changes the transition's length between both objects. The objects remain of equal length. The length can be numerically entered.

**Middle arrow buttons (5):** Shifts the existing transition. Both objects remain in their positions, but the transition's center point moves.

**Transition (6):** Displays the type of transition. A mouse click opens a popup window from which you can select a transition.

**Right arrow buttons (7):** Move the first frame of the second object. The first object and the transition remains. Only the length of the second object changes.

**Start fade-out/Last frame (8):** Switches the left monitor between the start of the transition and the last frame of the object.

**First frame/End fade-in (9):** Switches the right monitor between the first frame of the following object and the end of the transition.

**Next cut (10)/Next object (11):** The buttons below and to the right skip to the next/previous object and/or cut in the project window. These buttons make it easy to move and trim cuts in the arrangement without having to leave the trimmer.

Keyboard shortcut:        N

## Extract sound from videos

Video with sound material appears in the project window on two tracks as two objects (an audio object and a video object). The two objects automatically form a group.

To edit the video and audio material separately from one another, the objects can be separated with the Ungroup (view page 284) function in the "Edit" menu or button in the project window. Now you can replace the audio or the video track, or process each file separately. Rejoin/regroup the tracks with the "Export project" function.

## Save objects separately

Individual objects or object groups from the arranger can be saved separately in the project folder as a separate files. For example, cut out trailers, jingles, and so on that you need converted, and then save them for other projects for reuse as a take.

A take file (\*.tk2) contains a reference to a multimedia file or to a special object (videos, sound, visuals, etc.) including all additional properties that an object may possess (start and end time, fades, and effects including effects curves (view page 161)).

### Save take

1. If you want to save several objects in one take, proceed as follows:  
Select the objects in the arranger and group them.  
Shortcut:                G
2. Select the option "Save object as take" in the "Edit" menu or in the context menu of the object or group.  
Shortcut:        Shift + K
3. Rename the take (see below).

### Save take using drag & drop

1. In the Media Pool open the folder where the take will be saved (e. g. "My Media > Takes").
2. If you want to save several objects in one take, select the corresponding objects in the arranger and group them.  
Shortcut:                G

3. Click on the selection and drag it to the Media Pool while holding down the mouse button.  
MAGIX Movie Edit Pro 2016 creates a take file (\*.TK2) which is named after the object in the arranger. The objects are removed from the arranger.
4. Rename the take.

### Rename take

1. Select the take from the Media Pool.
2. Now open the context menu.
3. Select the option "Rename".  
Keyboard shortcut: Alt + R
4. Enter the new name. When you do this, make sure that the file ending ".TK2" remains intact, otherwise MAGIX Movie Edit Pro 2016 won't recognize the file as a take.
5. Press Enter to confirm the entry.

### Load take

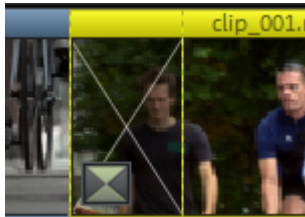
As with all objects, takes are loaded into the project.

## Transitions (fades)

When importing video files into the project window, individual objects usually follow directly after one another. This is called a "hard cut". However, you can make scenes blend or "transition" into each other.

This means that for the duration of a transition, two objects are shown at once and can be mixed "faded" together in different ways. You will find numerous blends in the Media Pool's transition directory.

### Simple dissolve



A simple transition can be created in the project window by dragging one object over another. A dissolve will be automatically created. During this standard transition, the brightness of both objects is increased, i.e. the first clip fades out while the second clip fades in. The duration of the dissolve is displayed in the project window by white

crossing lines. You can adjust the length of the dissolve by dragging the upper handle of the second object to the left or to the right.



To select a different fade click on the transition symbol displayed when an object is selected.

The transition menu opens. The transition icon will change, depending on your selection.

## Transitions from the Media Pool

1. To open the transition folder, click on the "Transitions" button.
2. A click enables a preview of the transition.
3. Simply drag the desired transition onto the border between the two transitioning objects. Only when the mouse pointer is placed over a scene change will it turn from a lock symbol into an object symbol, i. e. you can place the transition at that position. The object at the back will be shifted to the front to accommodate the duration of the transition.

The length of a transition is decided by you. If a transition is shortened, it means that the resulting effect is speeded up.

Some transitions can be adjusted even more precisely in the Media Pool (e. g. the strength of edge smoothing, or mirroring left or right). The settings that apply for the transitions at the beginning of the selected object are always shown in the Media Pool.

The so-called alpha transitions (in the subfolders "Iris", "Objects", "Random", etc.) are actually pre-produced black and white videos that are combined with the alpha keying effect to be used as transitions.

Other transitions use sound effects and various blurring effects are available under effect transitions (only in Plus and Premium versions). Try out different transitions to get an idea of what you can use in your projects.

**Tip:** Use transitions sparingly! Look closely when you are watching movies in the theater or on TV. You will notice that hard cuts are used as a rule and transitions are used less frequently. Videos appear unprofessional and too ornate if transition effects are added to every change of scene.

## Exporting own transitions

Alpha keying extends the range of transition effects used in MAGIX Movie Edit Pro 2016 to produce black & white movie transitions or selected color fade-ins and

fade-outs. You can create such a video from any video material (also color) by exporting it as a transition (File -> Export movie -> Export as transition).

The loaded movie is then exported as a black and white video in mxv format and stored in the transition directory. Afterwards, it will be available in the Media Pool and the transition menu.

## 3D transitions

3D effects offer exciting and varied opportunities to create transitions between two videos. You can find the 3D effects in the Media Pool under "Transitions" > "3D".

The following transition settings are available:

**Anti-aliasing:** An undesirable step effect is usually created at the borders of 3D objects. Anti-aliasing reduces this effect, but also requires more computer power. The setting applies globally to all 3D fades, switching on anti-aliasing during 3D fades has the effect that all other 3D fades are also affected by this setting.

**Horizontal / Vertical Mirror:** Use these options to influence the path of the 3D objects within the fades. "Horizontal" mirrors the movement of the object horizontally, i.e. along the X-axis. "Vertical" mirrors the movement of the object vertically, i.e. along the Y-axis.

## 3D series

The 3D series are a further development of 3D transition (view page 118), where the transitions are thematically sorted. For instance, you can let photos pop up and disappear on a notice board or make it look as if the photos were hung on the walls of a gallery.

You have the following options to open 3D sequences for photos or scene transitions:

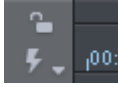
- In Media Pool, click on "Transitions" > "Spatial Transitions" > "3D Sequences". Select the desired 3D series and drag it onto the first scene or image transition where the 3D series should start.

You can select how many of the subsequent transitions should be replaced by the 3D series in the dialog.



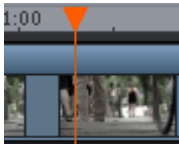
# Markers

In MAGIX Movie Edit Pro 2016 you can set various types of markers within your project.



The **Lock button** (at the very front, next to the time ruler) lets you lock all markers (jump markers, chapter markers) against accidental moving or deleting.

## Playback marker



The playback marker indicates the point from which the material – either the arrangement or a selected file from the Media Pool – will be played back. There is a playback marker below each preview monitor and an additional one above the timeline in the project window.

The playback marker is displayed as a red triangle below the monitors. In the project window it is displayed as a red triangle.

In order to move the playback marker, simply double click on the desired area below the monitor. Alternatively, you can click on the playback marker and move it by dragging it with the mouse. While being moved, the current image will appear on the monitor, letting you see exactly where in the material you are located.

The playback marker in the video monitor can also be moved by clicking on the lower section of the time scale in the project window. The playback marker will also be moved on the program monitor, as both markers are coupled to each other.

The exact position of the playback marker can be seen in the time display at the top left, below the corresponding monitor. There, you can change the displayed values (Hour:Minute:Second:Frame) per mouse click to reach a certain point in time. Simply enter the desired value and the playback marker will jump to the corresponding position.

**Tip:** In the "Playback" tab under "File -> Settings -> Program", you can set whether repeatedly pressing the space bar resets the playback marker to the current position or moves it to the original position.

## Project markers

The "Edit" menu or the keyboard shortcut "Shift + numerical keys 1-0 (0 for the tenth marker) allow you to set a project marker (view page 286) at the current position of

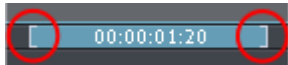
the playback marker. They function as a mental marker or indicate certain positions or events within the project.

After selecting the menu item, a dialog appears to input a name for the marker to be created. The first ten project markers may be accessed via Ctrl + number keys 1-0. This allows you to jump to a particular position of a longer video immediately, without scrolling and searching.

Project markers may be deleted or renamed via the context menu at any time. This does not provide direct influence on the result, but they do make the workflow much easier.

## Area marker (in and out points)

Area markers are the start markers (in-points) and end markers (out-points). They serve to mark a certain area, which will be played back by pressing the "area playback" button at the bottom of the corresponding monitor.



*To the left, you see a start marker, and to the right, an end marker.*

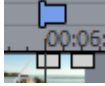
The area markers in the arrangement serve to indicate the paste position of new video or sound material.

**Hint:** The value between both markers shows the length of the selected area following the pattern of Hours:Minutes:Seconds:Frames.

There are various options for changing the playback range, and with it the project start and end markers.

- Set the playback marker at the desired position and press "Set start of range (in-point)" or "Set end of range (out-point)" underneath the monitor to set the in and out points of the range.
- Click on one of the markers below the preview monitor and move it with the held-down mouse key to the desired position.
- Click one of the markers in the upper-most bar in the project window and drag it.
- A right click on the bar moves the range end to the position of the mouse cursor. A left click moves the start of the range. The area grows or shrinks in size correspondingly.
- You can adjust the position of the entire range by clicking the blue bar between the markers and moving it by dragging while holding down the Ctrl button.

## Chapter markers



The chapter marker defines the start of a new chapter. Chapters serve to improve navigation when burning the project to disc.

The following options are provided via "Edit -> Marker" or by right-clicking on the playback marker.

### Marker > Set chapter marker



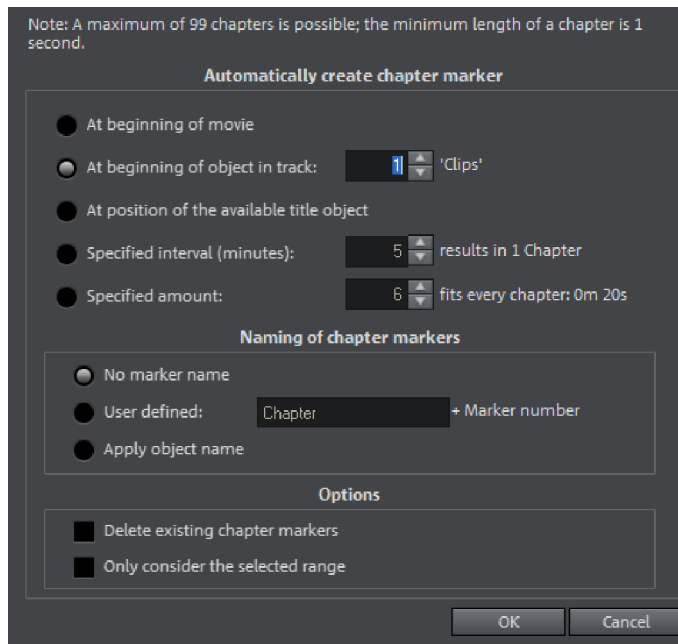
Places a chapter marker at the position of the playback marker. This creates a chapter entry in the disc menu in case the movie is being burned to disc.

You can rename the chapter markers by right clicking and selecting "Rename" in the context menu. The new name will also appear in the chapter menu (view page 242).

### Marker > Automatic chapter markers

This option automatically sets chapter markers in the project according to specific rules that will then appear as chapters in the film menu of a disc. This is useful if you need to burn a disc immediately after recording.

Keyboard shortcut: Shift + Alt + Return



### Automatically create chapter marker

- **At the beginning of a movie:** The movie contains only one chapter
- **At object starts in a track:** Every object in a track creates a chapter, Track 1 is preset.
- **At the position of existing title objects:** Subtitles, for instance, as faded-in subheadings, give the position of the chapter markers.
- **Provide interval (in minutes)/provide quantity:** If the chapters are separated without any particular method and are just needed for quicker navigation, chapter markers may also be inserted in pre-defined intervals or as a pre-defined number of chapter markers.

### Naming chapter markers

- **No marker name:** Marker name and marker number are not specified.
- **Custom:** You can use a custom name. A sequential marker number will be attached to it.
- **Apply object name:** The marker name is taken from the object name and the text in the text object. **No sequential marker number** is specified.

### Options

- **Delete existing chapter markers:** Deletes chapter markers that have already been set.
- **Only take the selected area into account:** The chapter marker is automatically set to the area between the start and end markers only.

## Marker > Delete (all) chapter markers

Delete one or all chapter markers. This removes chapter entries in the disc menu if the film is burned to disc.

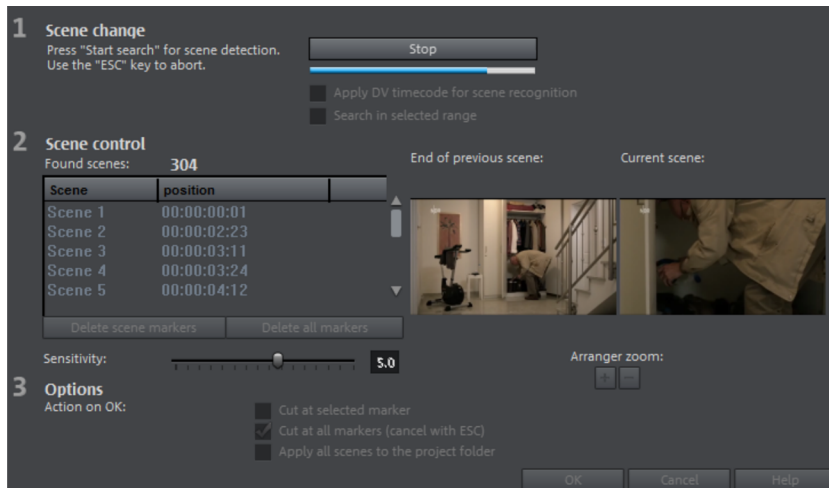
Keyboard shortcut:

Ctrl + Alt + Enter

## Scene markers

Scene markers separate a complete video into scenes. You can load any video into MAGIX Movie Edit Pro 2016 and have it divided into scenes.

Load the desired video into the project window. Then, right-click on the video and select "Scene detection". The following dialog appears:



After clicking "Start search", an overview of the detected scenes will be displayed underneath the scene control.

**Delete scene markers:** Here you can delete individual markers by selecting them from the list.

**Delete all markers:** Deletes all project markers.

**Action on OK:** You have three options. Either MAGIX Movie Edit Pro 2016 splits your video into individual scenes (cut at all markers), you select a scene and cut only at this position ("Cut at Selected Marker") or you can save the scenes as "Takes" (view page 115).

After deciding in favor of one of these options, red scene markers will appear on the timeline in the project window.



**Note:** An important difference between a scene and a chapter marker is that a scene marker can be set only within a continuous video, while a chapter marker can include several videos consecutive videos.

Additional information about scene recognition is provided in the chapter "Insert objects into the project" (view page 218).

Shortcut for scene recognition: Shift + Z

## Snap markers and transients (Plus/Premium versions)

Objects, object edges, markers or the playback marker will jump automatically to particular "Key positions" when you move them close enough with the mouse. This is called "snapping".

Select a location in the object with a snap marker to indicate where another object should snap in. This can be helpful, for instance, if you want a title to be shown at a specific position in a video object.

You can find the "Snap Marker" in the Media Pool under "Effects".

### Set snap marker

- To set a snap marker, select an object and place the playback marker at the position where you want to place the snap marker.
- Now click on the button "Set snap marker".
- You can move a snap marker with the mouse using drag & drop.

You can set as many snap markers as you like per object.

### Align snap marker with transients

Transients are signal peaks in audio material that can also appear in video footage; e. g. a door slamming shut.

Transients in video footage can be used as a starting point for editing - for instance, fading in a title or making a picture-in-picture effect appear.

The "Align snap marker to transients" feature analyzes the signal peaks of the selected object and sets snap markers to these locations. This moves snap markers that have already been put in place near the transients into the new locations.

**Note:** Combination objects must be displayed separately so that transients can be seen clearly. In the context menu of the combination object, select the command "Audio functions" > "Video/Audio on separate tracks". Snap markers are set independently of this setting.

## Multi-cam editing (Plus/Premium version)

Multicam editing enables easy cutting of various recordings of the same scene from different camera perspectives. The program monitor displays footage from up to 4 sources at the same time. This footage can be cut together in real time just like in a real studio.

**Tip:** MAGIX Movie Edit Pro 2016 conducts an audio analysis of multicam tracks and synchronizes them. For this reason, you should pay attention to the following notes:

- Deactivate your camera's dynamics editing (limiter, compressor and leveler)**before** you start recording, otherwise the quality of the effects in MAGIX Movie Edit Pro 2016 can be negatively affected. Footage that has been "adjusted" can also not be edited further in full width.
- Only use the audio effects in MAGIX Movie Edit Pro 2016 (view page 177) for audio editing beforehand.

**Note:** This function is available only in the Plus/Premium version.

## Preparation

Multicam editing is a special project window mode. The top two tracks serve as target tracks for copying sound and video from two different source tracks. The two top tracks must be empty when switching into the multicam mode, otherwise existing objects will be moved to a different track.

Next, load various video recordings of the same scene one under the other starting on track 3 in the project window.

It is important that the individual sources are synchronized to each other exactly. It is best to find a noticeable movement, or an "o" sound, if audio was recorded.

**Hint:** To localize the sound in the audio track exactly, you may have to create a wave display of the track. Right click on the sound track and choose "Create wave form display".

You can use a clapperboard during filming, since this offers both sound and motion; an actor's clapping in front of running camera before the start of the scene is also helpful. Set a grid point at this position in the object ("Alt + Shift + P"). You can now move the source objects over each other, so that the grid points are aligned.

Two video sources with sound tracks can be automatically synchronized using their audio material. Move the video and audio objects with the mouse to the right position, until the sound of both videos is exactly synchronous.

It is also important that you make all effect settings for the output material (e.g. video or audio cleaning) **before** the multicam edit on the objects on the source track and on the master audio track (view page 128). These effects will be transferred to the objects in the target track with the edit. Otherwise, you will have to apply the effects from every single object to the target track.



You can activate "Multicam" mode with this button or with the "Multicam" command in the "Edit" menu.

## Source tracks and preview images

The source tracks for multicam editing will be selected automatically. When the multicam mode is activated, the source tracks will be assigned to all tracks containing video objects starting from track 3.

You can also conduct or change the assignment manually. To do this, open the context menu of the corresponding track box to assign or unassign a track to be used as a source track. In this way, you can use more than two tracks for multicam editing, but no more than two simultaneously. The source tracks are marked using color.

A preview appears in the preview monitor for every assigned track, and the source track's color corresponds to the frames around the preview images in the program monitor so that you can quickly assign each preview image.

**Tip:** If your computer is powerful enough, perform multicam editing in full screen mode.



If the objects created using multicam editing are located on the target track, a preview image of the assigned source track highlighted with a yellow frame will be shown for the duration of playback.



## Multicam edit functions

You can edit various sources in the the target track during playback in real time or during stopped playback.

### Real-time Multicam editing

You can edit various sources together during playback in real time:

- Start playback.
- Click on the desired source in the preview monitor. The corresponding video is added into the target track starting from this time point.
- To switch the source, click in the source monitor on another source. A new object will be created using the new source from this point in the target track.

You can repeat this process as often as you like.

For precise editing in the target track, use the usual edit functions or the Trimmer (view page 112). Keep in mind that as long as you are in Multicam mode, only the object borders are moved, and not the objects themselves. Otherwise, gaps or image jumps could form while you use the Multicam edit function again later.

### Replacing an object's source

Replacing an object's video material in the target track with another source:

- Select the object for which the source is to be replaced in the target track.
- Click the source you want to replace the video material with in the source monitor object.

The video material will now be replaced by the new source. The project length is not changed.

### Insert cut

Insert material from one of the sources between any position on the target track and the next object.

- Place the playback marker at the desired position.
- Click on the desired source in the preview monitor.

The material from this source will now be inserted into the target track. The new object ends at the next object. The portion below an existing object is overwritten in the process.

## Overwrite range

You can overwrite a selected area of the target track with one of the source videos.

- At the upper edge of the project window, select an area to edit by determining the in point by clicking with the left mouse button and the out point by right clicking. Or use the corresponding buttons in the transport control.
- Click the desired source in the program monitor.

The target track will be overwritten with the video material from the selected source in the selected area.

## Master audio track

Normally, videos in the source track are edited together with their audio tracks. Since the original sound can differentiate from camera to camera due to different camera positions, you will probably prefer using either the soundtrack from only one camera for all settings, or to replace the soundtrack completely (for music videos, for example, you will use the studio version of the original track).

Right click on the track box of one of the source audio tracks or a different audio track and select "Multicam: Master audio track" from the context menu to assign a master audio track for multicam editing. The master audio track will be appear in a dark color.

Now, during every multicam cut, material from the master audio track will be inserted on track 2, independent of the source track used.

## Synchronize video objects using the audio track

Video objects can be synchronized using their audio tracks. This is done by comparing the audio tracks for similarities. If videos come from the same recording environment, the same acoustic events will be found on their audio tracks (e.g. the sound of the clapper board).

Synchronization of multiple objects on one track is possible.

1. On the reference track, select all audio objects that are to act as reference positions.
2. On another track, select all audio objects that should be moved.
3. Choose the "Align with other audio objects on this track" function from the audio object context menu.

**Note:** If the desired audio track is found in a combination object, you will find the "Align with other audio objects on this track" option in the "Audio functions" submenu.

MAGIX Movie Edit Pro 2016 attempts to locate the acoustic events in the reference objects of the second track and to move these to the corresponding position. Because the audio objects are grouped with their corresponding video objects or comprise a common object, videos are synchronized in the process.

# Title

Titles can be used for many applications: as a running text (ticker), subtitles, speech and thought bubbles, to display date and time, and much more.

## Creating titles using a template

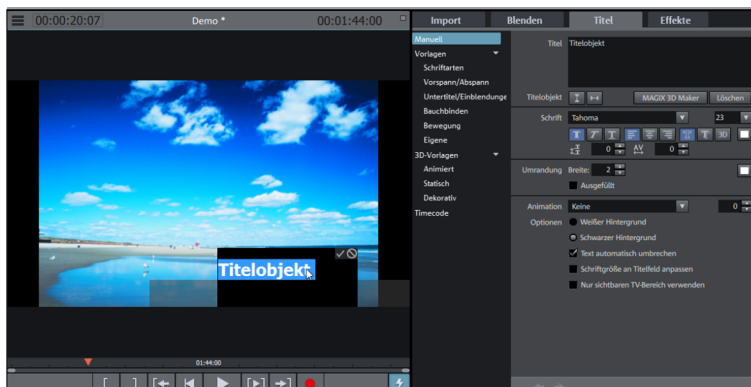
There are a wide range of title templates for fonts, opening and closing credits, captions etc. under "Templates" in the Media Pool (in the "Titles" tab).

- Open one of these entries and select any title template. Start a preview or add a title to a playback marker location using the quick access feature.

**Note:** Templates may be applied to an existing title object. Only the text will remain when the template is applied. All other formatting settings will be lost.

## Create titles without a template

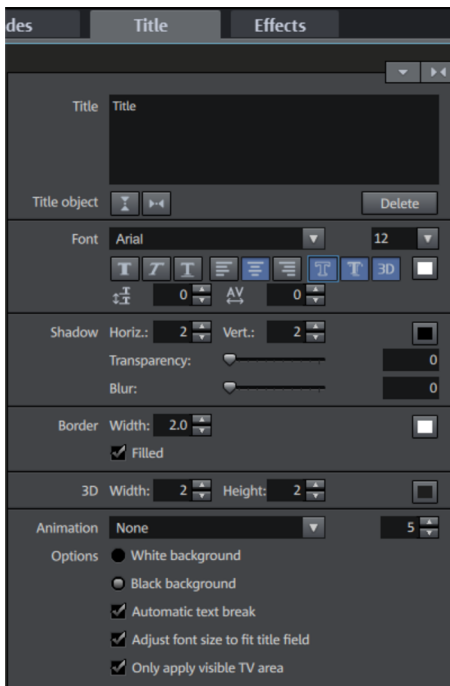
1. Position the start marker in the project window where you would like the title to be displayed. You can adjust this position later at any time.
2. Click on the "General" entry under "Title" in the Media Pool.
3. Create text fields:
  - If you want to create a text field where the text is automatically adjusted with breaks, drag a text field onto the preview monitor. The option "Automatically adjust text" is activated and cannot be changed.
  - If you would like to create a text field where the text can automatically be adjusted with breaks only where required, click on the preview monitor. The option "Automatically adjust text" is activated but can be deactivated at any time, e. g. if you want to let the text run through from right to left using animation.



4. Use the keyboard to enter the text and click on the checkmark in the preview monitor to confirm it. You can edit it any time you like in the text field.  
You can format your title later through the title editor in the Media Pool.

### Tips for working with text

- To adjust the text properties for several objects simultaneously, hold down the Ctrl key and select the text objects in the timeline. The settings will only be applied to the text objects you have selected. The individual properties of each text object remain unchanged.
- Use the slider to adjust the text size.
- Hold down the Shift key and drag the title field handles to switch from "Adjust text field to title field" mode and back.
- Use the arrow keys in the title editor to move from one title object to the other without having to search in the project window. Captions are not included in this.



Texts can be displayed in all kinds of fonts and colors.

If you want to format individual words or letters, select them with the mouse and choose a different format or color.

Without any selection, the entire text in the object will be formatted.

You can open the title editor by pressing "T". A title object will be created where you can immediately enter your text.

### Edit titles retroactively

- Double-click on the title in the preview monitor or the title object in the project window. Now change the text any way you like.

- You can also go to the Media Pool area "Titles" and enter your text in the input field there.

## Position titles

- Click once on the title in the preview monitor and a positioning frame will appear. Simply move the positioning frame using drag & drop.



- Click on the corners of the positioning frame and drag it to the desired size. When the "Adjust font size to title field" function is activated: The text size will be adjusted to fit the size of the positioning frame.
- Click once on the button located in the Media Pool under "Title > General > Title object" to center the title horizontally and vertically.



## Other text settings

You can edit titles precisely with different text effects: font, font size, justification, spacing etc.

**Transparency:** Controls foreground transparency levels.

**Soften:** Makes the edge of the shadow harder or softer.

**Width:** Enter the width of the frame in points.

**Filled in:** The text will be filled with the color selected in the Title Editor. If the option is deactivated, only the frame will be visible, and the background will appear instead of the color fill.

**Outline:** A border appears around the letters in the text.

**Shadow:** The position of the shadow may be set on the horizontal and vertical axes.

**3D:** The text appears with a 3D-style outline. The width and thickness of the 3D contour (H) can be set in points.

**Color:** Clicking on this button opens a color selection dialog, where you can set the frame color.

**Animation:** Make your credits scroll down the screen or select one of the many other text movements from the menu. You can also set the display duration for the title here.

**Background:** Specify here whether the text's background should appear black or white. This is only meaningful if no other video or image object is in the background.

**Wrap text automatically:** When activated a break will be inserted automatically after each line.

**Adjust font size to title field:** The text size will be adjusted to fit the size of the positioning frame.

**Only use visible TV area:** The text will be zoomed so that it will always be within the TV's screen area, which is specified in the Movie effect settings (view page 170).

## Fade in date as title

MAGIX Movie Edit Pro 2016 can add a time or date ("time code") to the picture material. To add a time code, right-click the video object and choose the "Fade in date as title" option from the context menu.

If you're using a DV-AVI file (a digital recording from a camcorder, for instance), the recording date will be used from the chosen place. If you're using a different file, the creation date will be used as the time code. The title editor is then opened in order to customize the entry.

In the preview monitor context menu you will also find the "Display play time" option. This will create a time code.

## Timecode

In the "Timecode" section you will find various presets that you can use for displaying the timecode. This function adds a special timecode object to a free track under the video object.

You can adjust the position of the timecode by moving the timecode object in the preview monitor. The handles on the borders can be used to adjust the size.

- Select the right template for your project. Try out a few to find the one that's right for you.

### The following times will be displayed in the various templates:

- **Movie time:** The time position in the MAGIX Movie Edit Pro 2016 project window.
- **Recording date/time:** The date and time when the footage was recorded. This timecode information must be saved in the video, otherwise the display will be empty.
- **Recording timecode:** The timecode for the video that is created by the camera. This timecode information must be saved in the video, otherwise the display will be empty.

**Note:** If the recording date/time and the timecode are not saved in the source material, only placeholders in the form of "-" will be displayed.



# Effects

MAGIX Movie Edit Pro 2016 offer a large palette of various video effects. The video effects used the most can be found directly in the Media Pool, while others can be found in the object context menu or in the "Effects" menu.

## Apply effects to objects

There are various approaches for applying effects:

- Video and audio effect presets are loaded into the corresponding object from the Media Pool using drag & drop.
- Effects that can be animated (in the Media Pool under "Effects -> Video effects / movement effects") will be applied directly to the objects selected beforehand as soon as changes are made in Media Pool.

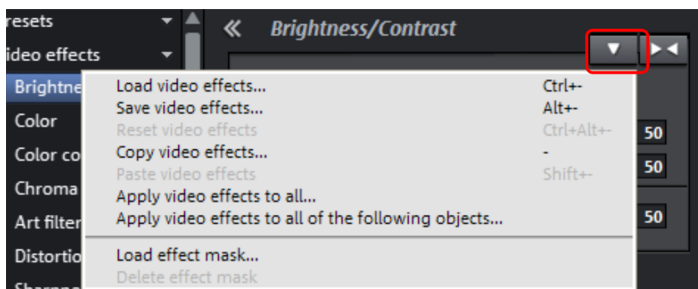


This button resets all of the current effect settings.

**Note:** If you animated the effect using keyframes, resetting will affect the entire animation. Individual keyframes may be deleted via click + Del (view page 163).

## Transfer effects settings

The items video effects (view page 136), movement effects (view page 144), and Stereo 3D (view page 205) on all effects pages provide the option to transfer the current effects settings to other objects or to load previously saved settings. Use the above right arrow button to open the video effects menu.



**Save/load video effects:** The current effects settings may be saved for later use in other projects or previously saved settings may be loaded. A dialog allows the effects to be selected.

**Reset video effects:** Resets the effects settings for the selected object.

**Copy/paste video effects:** Copies or inserts the current settings as a new object. Use the dialog to select which settings should be copied.

**Apply video effects to all:** Copies the current effects settings to all objects in the arrangement. Use the dialog to specify which settings should be copied.

**Apply video effects to all the following objects:** Copies the current effects settings to all of the following objects in the arrangement. Use the dialog to specify which settings should be copied.

**Load effects mask** (in the Plus version): An effects mask (view page 154) may be loaded for a selected object.

## Presets

You can drag & drop video effect templates directly from the Media Pool onto video or image objects. You will find the following categories in this item:

- **General:** Provides various distortion or optimization effects that can give your files a specific appearance, e.g. an antique image.
- **Video mixing effects:** Various presets for chroma key effects (view page 139). Depending on the background that is to be hidden, select "Black box", "Blue box", "Green box", or "White box".
- **Film looks:** Specifically for the appearance of certain types of film presets

## Video effects in the Media Pool

Video effects in the Media Pool can always remain open independently from the selection of an object.

The image is always displayed at the position of the playback marker in the program monitor. To see the impact of the effect settings, you must always set the playback marker to the position where the selected object is located. The playback marker also enables you to jump to a specific position in the video object in order to check the results of the effects by starting and stopping playback.

## Brightness & Contrast



**Auto exposure:** With this button you can automatically optimize brightness and contrast with a click. Use the fader in the dialog for finer adjustments.

**Brightness/contrast:** Use the sliders to increase or reduce the brightness and the contrast of the picture.

**Gamma:** "Gamma" determines the mean gray value that can be calculated from the various color ranges. In the preset list, select various areas to edit only the dark, median, or brightest areas of the image. Using the fader you can also set the power of the brightness/darkness adjustments.

**HDR Gamma:** Unlike "Gamma", very dark areas are selectively lightened.

**HDR blur:** This changes the transition between light and dark areas together with "HDR Gamma".

## Color

**White point:** An incorrect white balance can lead to an unnatural blue or red hue. Instructions: To use the white balance, click on the button to the right of the label "White balance" and then select a point which represents white or a neutral gray to the "outside world". The color temperature is then corrected automatically.

**Tip:** Interesting color effects can be achieved by setting a color other than white. There is definitely room for experimentation!

**Red Eye Removal:** Using this photo function you can remove unnatural red eyes that are the result of using a flash. Click on the eye symbol and then select the red pupils in the preview monitor using the mouse.

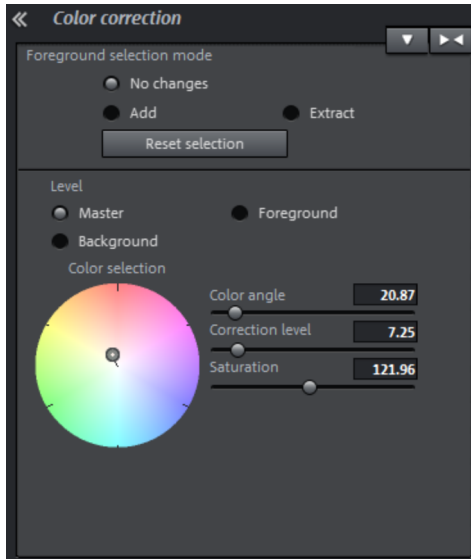
**Saturation:** Use the saturation slider to increase or reduce the hue proportions in the image. A newly developed algorithm is applied which makes color changes related to other parameters (for example contrast settings) in order to achieve the most natural

coloration possible. With some experimenting, you can achieve some amazing results – such as turning summer images into autumnal pictures, or creating funky pop art...

**Hue:** Select a color for coloring the image from the color chart.

**Red/Green/Blue:** Changes the color portion mix using the slide controller.

## Color correction



Secondary color correction allows individual colors in video and image objects to be adjusted. The two layers, the front and background, are separated from each other using a mask. Both can be edited separately. The master layer may also be used to influence the overall image.

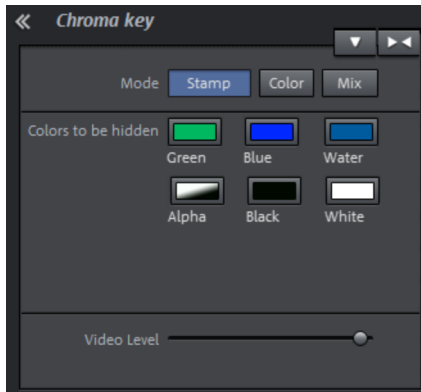
The foreground layer corresponds with the mask created, and editing in the background changes all of the areas outside of this mask.

This is how you can create a mask for the background:

1. Activate "Add".
2. Place the mouse over the preview monitor. The mouse pointer turns into a pipette.
3. Click with the pipette tool on the color in the program monitor that you would like to assign to the mask. Unwanted colors can be removed from the selection again by selecting "Remove" and clicking the corresponding color.  
MAGIX Movie Edit Pro 2016 displays the mask in black and white stripes to highlight the current selection.
4. Adjust the color using the color selection slider until you like it.

**Note:** This function is available only in the Plus/Premium version.

## Chroma key



This section contains the effects for chroma keying used to mix together two videos into a foreground and background.

**Note:** The background video must be placed in the track above the foreground object.  
E. G.: Track 1: Background, Track 2: Foreground

### Mode

**Stamp:** The currently selected object is "stamped" onto the video on the track above the object. This is only possible if the bottom video takes up only a part of the image. Otherwise only the bottom (currently selected) video would be visible. Normally, the object should be reduced or moved first. This is done with the help of "Position/size" (view page 144) effect or via the submenu "Section" in "Effects -> Video object effects".

**Color:** In the preview monitor, drag the cursor over the color that should be transparent and select a section. The video is made transparent in the sections with this color and the video on the top track will show "through". You can use the "Threshold", "Fading range" and "Antispill" controls to fine-tune your results.

**Mix:** This button mixes the two videos together based on the brightness. Brighter areas accumulate and quickly appear white; darker areas have less of an effect on the result.

### Colors to be hidden

**Green/blue/black/white:** All green/blue/black/white areas of the video below appear transparent. This makes it possible to "place" a person who has been recorded in front of a blue background into any type of landscape.

**Water:** Only the contours of the upper video are mixed, which results in something like a water effect..

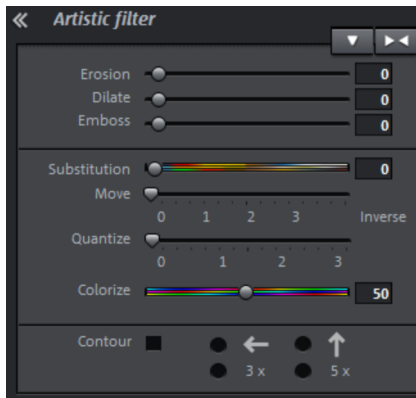
**Alpha:** This video effect uses the brightness of a video to control a transition effect between two other videos on neighboring tracks. The additional videos should be situated directly above and below the alpha-keying object.  
In all black parts of the alpha-keying object, the top video is faded in, while in all white

passages the bottom video is shown. Grey passages are permeable for both videos and create a mixture of the two. In the case of colored passages, the brightness of the color is used for control purposes.

## Video Level

Changes the brightness of the video before additional video effects are applied. This can have a serious influence on the effects, in particular on Chroma Keying. The level setting may be automated so that two videos can be mixed dynamically with each other. Read more about this in the chapter "Animating objects" (view page 161).

## Art filter



**Erosion**: The image is broken-up by means of small rectangles and resembles a "patchwork".

**Dilate**: This works like erosion, but uses light surfaces instead of dark ones to form the rectangle.

**Emboss** creates a relief of the image edges, in which case strong contrast differences are interpreted as edges.

**Substitution**: Using the rainbow scale red, green, and blue components are exchanged. Quickly create surreal landscapes or a green face!

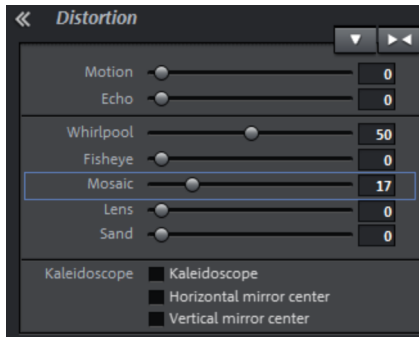
**Move**: The color values are inverted increasingly. Blue colors turn red, and green appears purple.

**Quantize**: Depending on the setting, colors are either rounded up or down so that the overall number of colors is reduced. This creates interesting grids and patterns.

**Colorize**: Using this slider, color in the video with red, green, and blue colors (the basic TV colors).

**Contour**: The image is reduced to its contours in two sizes (3 x 3 or 5 x 5). It is possible to select either vertical or horizontal contours.

## Distortion



**Motion:** Moving parts of the image are enhanced and warped.

**Echo:** The moving images create an optical "echo"; previous images stand still and gradually turn paler until they completely disappear.

**Whirlpool:** The image is twisted into an "S" shape.

**Fisheye:** The perspective is distorted as if the image were viewed through a fisheye lens.

**Mosaic:** The video is depicted as a mosaic.

**Lens:** The image is dynamically distorted at the edges.

**Sand:** The image is depicted in a granulated manner.

**Kaleidoscope:** The left upper corner is mirrored horizontally and vertically.

**Mirror horizontal/vertical center:** The object is mirrored vertically or horizontally – it appears on its side or upside down.

## Sharpness

**Sharpen:** The fader allows you to increase the sharpness of the image.

**Blur:** The fader allows you to reduce the sharpness of the image, making it blurry.

- **Apply to:** This allows you to set just how much the sharpness or blur should be applied to surfaces or edges. This enables you to effectively reduce ongoing image distortions (noise).

**Artificial blur:** Here you can blur the image in an alternative manner. The achieved effects are much stronger compared to simply sliding the fader under "Blur".

- **Quality:** The artificial blur is enhanced.

**Tip:** Artificial blur produces good effects when used for transitions. To do so, you can animate (view page 161) the first video so that it is strongly blurred and let the second video begin with blur and slowly return to normal focus.

**Note:** The higher the quality of the effect should be, the longer the calculation will take.

## Speed

The playing speed can be adjusted with the slider control. The range between 0 and 1 plays the video slowly; values above 1 accelerate playback. If the playing speed is increased, the object length in the project window is automatically shortened.

**Frame rate:** Here you can set the video's frame rate directly. Changing it directly affects the speed factor, while moving the slider conversely results in changing video frame rate.

**Algorithm:** Here you can determine how to adjust the soundtrack. "Timestretching" changes the playback speed, without influencing the pitch: "Resampling" changes the playback speed together with the pitch (the faster the playback, the higher the pitch).

**Reverse playback:** With this button the playback direction will be reversed (with the same tempo).

**Interpolate intermediate frames:** Activate this option if your video lags as a result of being slowed down. MAGIX Movie Edit Pro 2016 then automatically fills in missing frames so that your video can be played back more smoothly.

**Maintain length:** If you shorten an object in the arranger, you can play a video faster without reducing the object length. The shortened footage is used to maintain the object length.

## proDAD Mercalli 2.0

Remove shaking and jerking from your video recordings. Uneven panning and zooming shots can also be "calmed" and improved.

**Profile:** Select the right camera type for analyzing and correcting your video data. It is necessary to select the right camera here to get the results you want, regardless of how the original video was filmed. The universal camera profile will improve any video data, but try out different camera types to get the best result for your material.



**Run analysis...** : Analyzing your video data is always the first step before starting detailed improvements.

**Rolling shutter correction:** Balances any distortion (only with CMOS) that appears in moving images - in other words, videos.

**Note:** For this effect to work correctly, the correct field setting for the video must be used.

**View camera dynamics:** Activate this feature if camera movements have not been smoothed or stabilized.

**Enhance panning shots:** Entire panning movements in a video can be balanced,

**Smooth zoom:** This balances shaky zooms.

**Reduce tilting:** This can be used to reduce horizontal and vertical tilting of the camera when the recording was made.

**Border editing:** Through balancing unwanted movements in film footage, it's also possible to edit borders. Here, you can specify how to deal with borders:

- **Optimal stabilization:** A black border appears in the stabilized video. This border can differ in appearance from image to image, depending on the extent of shaking.
- **Without border:** No border appears in the stabilized video. A border can be avoided by zooming the video. This depends on the extent of shaking in the video and the desired level of correction.
- **Image area:** A static border appears in the stabilized video. The form of this border is characterized by the strongest shaking in the video.

**Zoom:** The border can be minimized by zooming in the video.

**Fill with edge color:** This option lets you fill an existing border. However, this means that the video content will look slightly blurred.

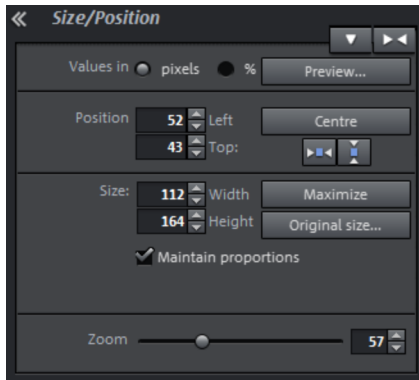
**Comparison view:** The stabilized video can be shown in the preview window.

- **End result:** Only stabilized video will be displayed in the preview.
- **Vertical split screen:** This vertical screen displays the source material and the stabilized video.
- **Horizontal split screen:** This horizontal screen displays the source material and the stabilized video.

**Show evaluation grid:** A grid to help you evaluate stabilization appears.

## Movement effects in the Media Pool

### Size/Position



**Values in:** Set whether the values are applied in percent or pixels.

#### Position

**Left:** Enter the start position from the left image border.

**Top:** Enter the start position from the top image border.

**Center:** Based on the current image size, the image starting points (left and top) will be positioned so that they are centered.

**Note:** Negative values can, of course, also be entered. The image borders will then be outside of the visible area.

#### Size

**Width:** Enter the width of the image here.

**Height:** Enter the height of the image here.

**Maximize:** The image is maximized to the resolution of the film.

**Set original size:** The image will be scaled to its original size.

**Fix proportions:** This option makes sure that the image will not be stretched or distorted. The ratio between width and height will always stay the same.

**Note:** In the preview monitor you can use the object handles on the sides of the decorative element to adjust its size. The additional handles for rotation located at the top can be used to tip the element and align it with a background object.

The size and the position of the image can be roughly entered in the program monitor by simply moving the image into it and dragging on the handles. The frame of the video monitor with handles can also be moved with the keyboard.

**Keyboard shortcuts for moving the edges of the frame that are visible in the video monitor:**

Nudge the screen 1 pixel:                      Arrow keys

Nudge the screen 5 percent:                  Shift + arrow keys

For animated movement effects, it often makes sense to zoom out of the video monitor and use the resulting workspace to, for example, let a minimized image or text object move through the picture.

**Keyboard shortcuts for the preview picture:**

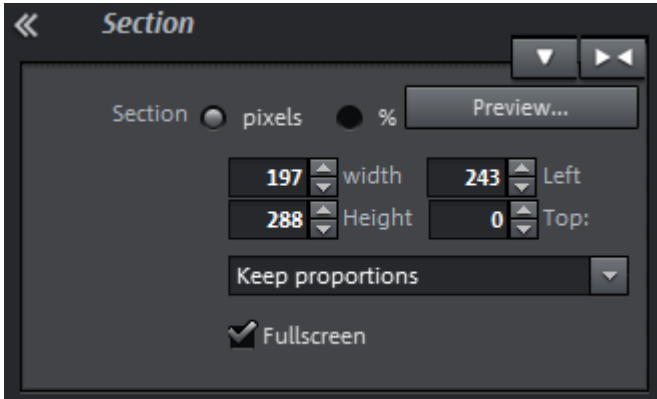
Thumbnail zoom in/out:                      Ctrl + mouse wheel

Move thumbnail:                              Ctrl + left mouse button + drag

See the "Animation from outside of the image" (view page 166) section for more detail.


# Section

**Note:** In order to move the section with a movement effect across the image, please refer to the following section "Camera/zoom" (view page 146).



Sections may be used to display only a portion of the image.

You can specify an image section in the preview monitor. Use the eight handles to reduce the frame displayed in the monitor and move it to the desired position.

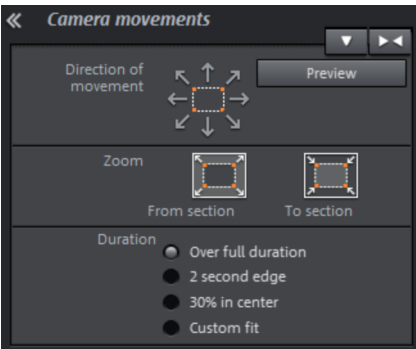


**Preview:** With this button you can preview how segment will look like in the movie. Click on this button a second time in order to keep editing this segment.

**Keep proportions:** In this menu, you can select the format for the section. The format of the original picture is used as the default.

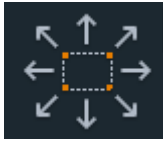
**Fullscreen:** If this check box is selected, the section will be zoomed to fullscreen. If this option is deactivated, only the section of the image within the frame will be displayed and the edge will remain black or filled with the object behind it.

# Camera/zoom



With this effect, you can move a previously selected frame inside the image, creating an impression of camera movement or zoom.

## Movement in direction



Determine the direction in which the selected section or image will move in the process during the time selected under "time period". In addition to horizontal and vertical movements, diagonal movements are also possible.

**Preview:** Displays a preview of the section at the playback marker location.

## Zooming



**Zoom out:** The selected picture section is displayed and is then zoomed out to display the entire picture according to the time set in "Length of movement". If no portion is previously set, a central portion of 50% of the picture is set.



**Zoom in:** The entire picture is displayed and then zoomed in to show only a smaller picture section according to the time set in "Length of movement". If no portion is previously set, a central portion of 50% of the picture is set.

## Duration

The option selected here sets the position where the keyframes of each movement effect are set by default. You determine the positions where a movements begins and ends.

**Note:** Automatically placed keyframes may be edited retroactively, and the option will then be set to "Use custom settings". Read the section "Retroactively editing an effect's keyframes" (view page 162) in the chapter "Objects".



**Reset:** This option applies a static zoom to show the selected section of the picture only.

The size and the position of the image can be roughly entered in the program monitor by simply moving the image into it and dragging on the handles. The frame of the video monitor with handles can also be moved with the keyboard.

## Keyboard shortcuts for moving the edges of the frame that are visible in the video monitor:

Nudge the screen 1 pixel:

Arrow keys

Nudge the screen 5 percent:

Shift + arrow keys

For animated movement effects, it often makes sense to zoom out of the video monitor and use the resulting workspace to, for example, let a minimized image or text object move through the picture.

### Keyboard shortcuts for the preview picture:

Thumbnail zoom in/out: Ctrl + mouse wheel

Move thumbnail: Ctrl + left mouse button + drag

See the "Animation from outside of the image" (view page 166) section for more detail.

## Rotation/Mirroring



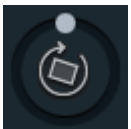
### Rotation



Rotates the image on the horizontal axis.



Rotates the image on the vertical axis.



Rotates the image around its center point.

## Straighten horizon

The image can be rotated around the axis using the slider. The image is automatically zoomed to avoid black edges.

**Show guidelines:** Activating this check box displays a grid in the program monitor for orientation during horizontal straightening.

**Zoom automatically:** This function is preset to active. Unwanted black borders that result from horizon straightening are eliminated by zooming in on the image.

**Note:** If the image format does not completely conform to the current movie format and already has black borders, these cannot be eliminated with the horizon straightening function.

## Mirror/Rotate



Mirrors the image on the vertical axis.



Mirrors the image on the horizontal axis.



Rotates the image 90° clockwise.



Rotates the image 90° counterclockwise.

## Lens correction

With the lens correction you can remove image distortions caused by certain lenses. Even so called "converging lines" can be easily straightened. Here is an example:



*Original image*



*Image after editing*

## Setup

- **Lense:** Affects the curvature of the image

- **Section//zoom:** Corrects the black edges that appear around the image when changes are made to the "lens" parameter.
- **Automatic:** Automatically sets the "Section/zoom" parameter to remove black edges caused by changes to the "lense" parameter.

**Note:** Manually changing the "Section/zoom" parameter will automatically deactivate this.

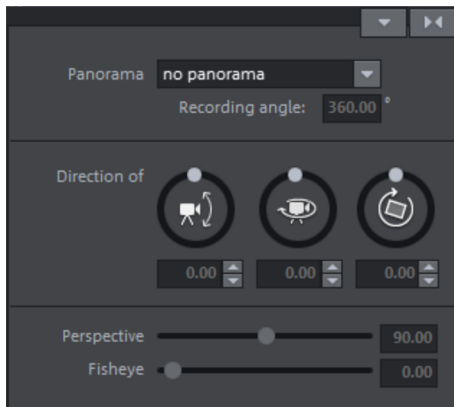
- **Perspective:** Strongly upward or downward facing image material often contains distortions which are unnatural for the human eye and causes so called "converging lines". This parameter balances out these distortions, allowing images with "converging lines" to appear more natural.

**Tip:** The lens correction parameter can be animated (view page 161). This is particularly useful in videos where the perspective changes, causing, for example, converging lines to also change over time.

## 360° Panorama (Plus/Premium versions)

You will find options for 360° panorama in the Media Pool under "Effects" > "View/Animation".

**Note for Ricoh Theta camera users:** Although 360° photos from this camera can be imported directly into MAGIX Movie Edit Pro 2016, videos need to be preprocessed before doing so. Convert 360° videos using the software included with the camera before importing them into MAGIX Movie Edit Pro 2016.



**Panorama image:** Select a type of panorama:

- **No panorama:** The panorama effect is not active and the image is not unified.



- **Sphere panorama:** An equirectangular panorama (or spherical panorama) , like one created with a Ricoh Theta camera, for instance, can be displayed as a sphere panorama.  
Imagine you are in a sphere and the panorama view is stretched around you. You can obtain an angle of up to  $360^\circ \times 180^\circ$ , for an all-round view.
- **Custom fit ...:** If you have created a panorama with a standard camera or have compiled a panorama (view page 227) from images, select this option.  
Imagine you are standing in a cylinder that is open above and below and the panorama view is stretched around you. You can obtain an angle of up to  $360^\circ \times 120^\circ$ .

**Recording angle:** You must set the recording angle yourself in the setting "Custom fit" yourself, as this cannot be calculated. Test out the "exact" value by simply evaluating the result visually and adjusting the degree angle to correspond to this.

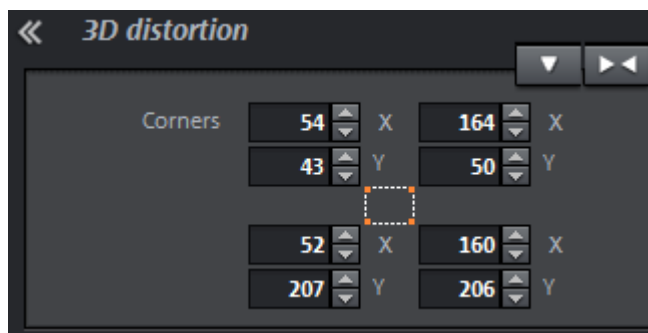
**Direction of view:** Set the direction of view in the sphere or in the cylinder - what do you want to see? If the recording is slightly crooked, you can balance this out.

In a panorama image, you can animate a movement with keyframes (view page 161). Step by step, you can view your "surroundings" and re-imagine your "space" the way you want.

**Perspective:** Specify how much to zoom in on details in the space or how much to zoom out so you can see as much as possible.

**Fisheye:** If you use a fisheye lens, the perspective appears distorted. If an image already contains distortion as a result of a wide-angle shot, the fisheye effect can be used to correct this. For instance, a curved horizon can be "straightened".

## 3D distortion



This enables the perspective of images to be distorted and moved. This produces a 3D impression by causing several components of the image to appear further in front of others.

Enter the individual corner points numerically or move them in the preview monitor using the mouse here.

**Note:** Unlike Stereo3D, this does not involve genuine 3D positioning. The image is only distorted so that it appears three-dimensional on a normal two-dimensional monitor.

## Stereo3D in the Media Pool

This accesses the program's Stereo 3D functionality. Please read the corresponding chapter "Stereo3D". (view page 205)

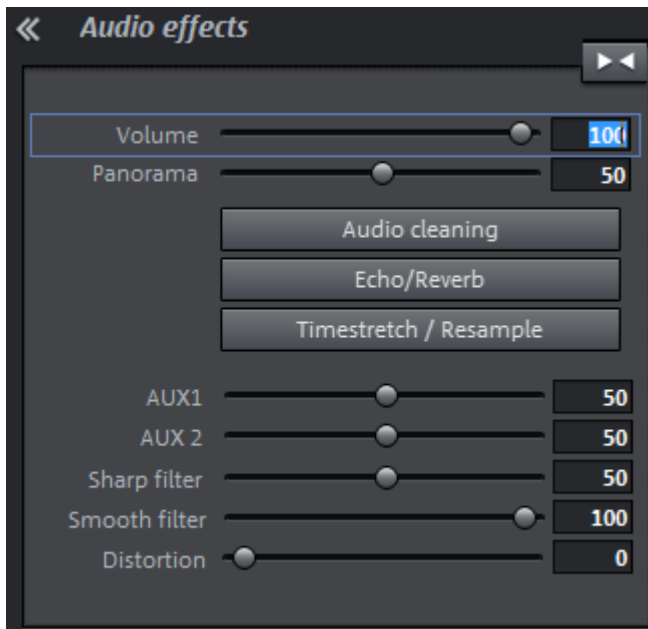
**Note:** This function is available only in the Plus/Premium version.

## Audio effects in the Media Pool

The Media Pool offers various opportunities to add effects to your audio objects. Another advantage of this so-called "object-oriented" working method is that automations are moved automatically with objects when they are moved, since they are attached to the object and not to the track itself.

See the "Audio effects" (view page 177) section below for more detail.

### General options



Under "Effects -> Audio effects -> General", you will find audio effects that can be animated using effects curves (view page 161). This means that certain effect settings can be changed during playback.

Effect curves are always object related, i.e. they only apply to one object and are moved or copied together with the object.

**Note:** The faders AUX 1 and AUX 2 control the volume at which the object's signal is sent to the corresponding FX tracks in the mixer.

Audio Cleaning (view page 178), Echo/Reverb (view page 182), and Timestrech/Resample (view page 184) can also be accessed here.

**Note:** Volume and balance curves are also present in the track. The set values in the curve are also active, respectively.

## Audio effect presets

In the Media Pool you will find a broad palette of effect settings which you can add to audio objects via drag & drop.

## Design elements in the Media Pool

In this category you will find a large selection of decorative elements: templates for image juxtapositions (multiple picture-in-picture) and collages, moving objects (balloons flying through the frame, trains moving across the picture, snowfall....), color fields for your own backgrounds, intro videos, outro videos, visuals...

You should first look through all the options and take stock of what there is.

- Open the categories one after the other to get a general impression. You can see a preview of all deco elements.

A simple example for use are the frames (Media Pool > Effects > Design elements > Image objects > Frames"). These are much like picture-frames that can be modified by video mix effects. Simply drag them directly on an object, which will then appear as if inside a picture frame.

The design elements create own objects on a different track. You can use the lower handles to adjust the size of the borders to fit any length of the video. You can also achieve interesting effects by inserting and discarding borders within a video.

## My Presets in the Media Pool

Your personal effects configurations in the Media Pool can be saved and applied again later. You can reach these customized configurations in the Media Pool folder "Effects > My Presets". They may be dragged onto objects as usual.

First, this folder will be empty, of course, because you still have to create your own configurations.

## Effects masks (Plus/Premium version)

Effects masks help you to apply effects in different areas of one video image with varying intensity. A specific image is used as a mask to determine the specific areas where the effect should be applied.

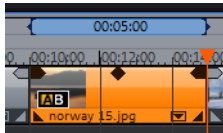
Typical applications include:

- Image optimizations. A typical example is a horizontal pan with a horizon, where the upper or lower area of the image is brightened or colored in.
- Eye-catching color gradients, colorations, etc.
- Special effects such as automatic license plate anonymization.

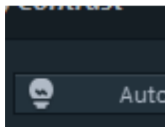
Effects masks are regular image objects, and as such may be animated or attached to a certain image position to use them as moving video images.

**Note:** This function is available only in the Plus/Premium version.

### Create an effect mask with MAGIX Movie Edit Pro 2016



- Select the object in the arrangement to apply the effects mask to.



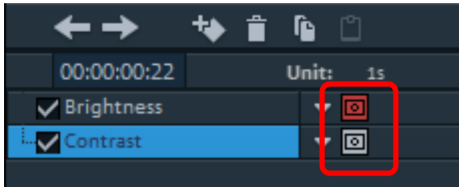
- Open the desired effects page in the Media Pool.
- Click on the down arrow button and select the "Load effect mask" entry from the menu.

When using color images, the brightness values are used. The lighter the area in effect mask is, the stronger will the effect be applied: black means no effect, white means full effect strength.

To apply the mask at a certain position in the video, you must edit it again. There are many options available for editing effects masks:

- You can define the size and the position of the effect mask in such a way, that the mask fits exactly over the image element to be edited. Please read more on this in the section "Position/size" (view page 144).
- You can attach the mask to the position in the video so that it moves together with the image element. To find out more, read "Attach to picture position in the video (view page 167)".

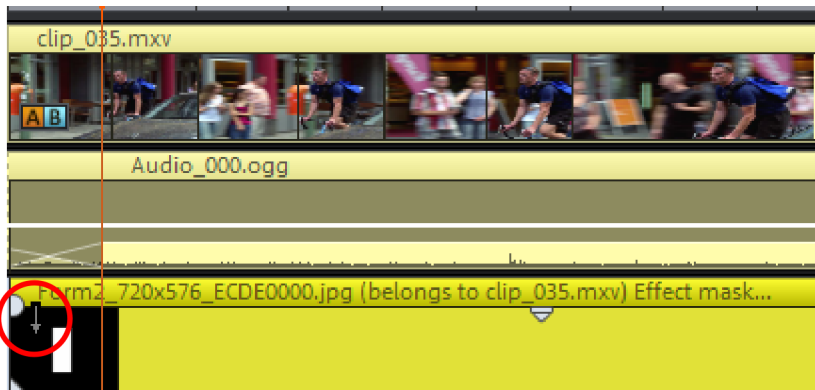
- Or animate the effect mask object directly. Read more about this in the chapter "Animate effects" (view page 161).



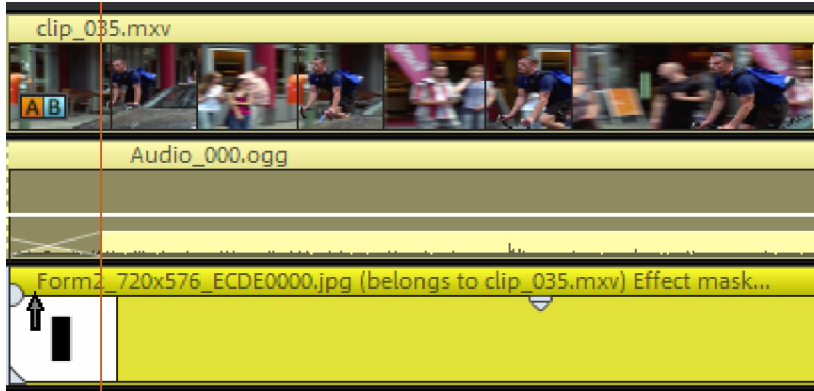
- In the effects overview, the effects mask can be deactivated for certain effects. The effects are applied to the whole image.
- Click on the down arrow button and select the "Delete effect mask" entry from the menu to remove the effect mask.

**Tip:** You can also use your own effect masks. Any image or photo in JPG format can be used. You can draw a fitting image in a graphics program, save it as a JPEG and load it using the "Load effects mask" option in Movie Edit Pro.

All effect masks can easily be inverted so that the light area becomes the dark area and vice versa. To do this, click on the arrow on the effect mask object.



This will invert the effect mask.

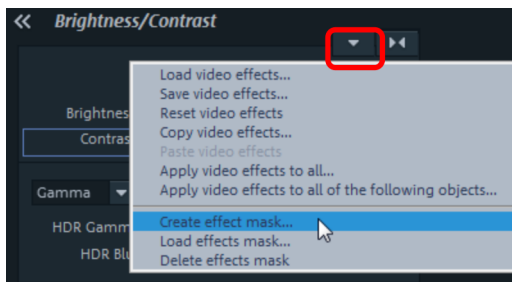


## Designing effect masks with Xara Designer

You can also create animated effect masks in Flash format to adjust the effect regulation to the moving video images. To do this you will need to have either Xara Photo & Graphics Designer 2013 (or newer) or Xara Designer Pro X (or newer) installed on your computer.

Please proceed as follows:

1. Select the image or video object for which you would like to create an effect mask.
2. Open the effects page in the Media Pool that will be used as the effect. Click on the down arrow button and select "Create effect mask".  
Here you will also see the option for deleting the effect mask if necessary.



MAGIX Photo Designer or Xara Xtreme Pro will start with the animation document and the opened frame gallery. The first frame will be added automatically and will display the selected image or video object from MAGIX Movie Edit Pro 2016.

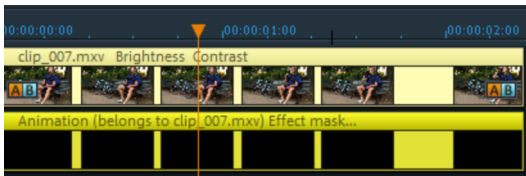
3. Create effect mask:

**Note:** Be aware that the lighter the effect mask, the stronger the effect will be later in MAGIX Movie Edit Pro 2016. Black indicates no effect, and white indicates full effect. The best option is to color the object that will be used as the effect mask white and to adjust the intensity of the effect yourself in MAGIX Movie Edit Pro 2016.

1. Use the tools in the editor to create the desired mask form. Add an object that marks the area where the effect should later be applied. It will automatically be assigned to the first frame.  
With the "Invert mask" function in MAGIX Movie Edit Pro 2016 you can use an object to indirectly select the precise area where the effect should not be applied.
2. Color the object white.
3. Give the object a name by clicking on "Names..." in the context menu. Enter the name under "Names" and click on "Add" and then "Close".
4. Create additional frames by clicking on "Copy" in the Frame Animation Gallery. The object that should move will automatically be added to the new frame.  
With each new frame the video moves to the corresponding position making it easier for you to adjust the objects directly on the video image by moving them to the right position.

**Tip:** More information about Flash animations is available in the documentation for the editor.

4. Close the document from the external editor. You do not need to save it because it is automatically transferred to MAGIX Movie Edit Pro 2016 when it is closed. It will then appear as a linked effect mask object under the image or video object.



If you would like to edit the effect mask retroactively, double-click on the effect mask object to start the external editor with the opened mask.

The next thing to do is set up the effect that will be regulated by the effect mask.

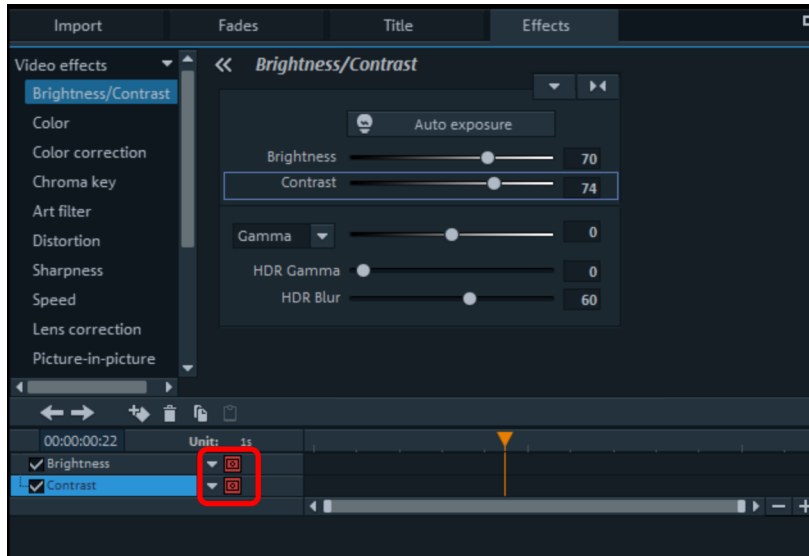
## 5. Set up effect:

1. Select the source object for which you just created the mask.
2. Set up the effect parameters in the Media Pool that should be regulated by the effect mask. These must be parameters from the "Video effects" area (without "speed" and "Chroma Key").  
The effect will be applied to the whole object.

## 6. Activate effect mask:

In the effect overview click on the mask icon in the bottom edge of the Media Pool for every effect the mask will be applied to.

You can invert the effect mask by clicking on the small arrow on the left of the effect mask object. The effects will then be applied to the rest of the image instead of the mask.



## Extra effects

Video effect plug-ins are additional programs from third-party manufacturers that can be used to apply additional video effects to video objects. MAGIX Movie Edit Pro 2016 supports the plug-in format of the freeware video editing software VirtualDub, as well as the "VitaScene" and "Adorage" programs by proDAD.

Important applications for plug-ins:

- Removal of broadcast logos
- Removal of interference
- Addition of special effects

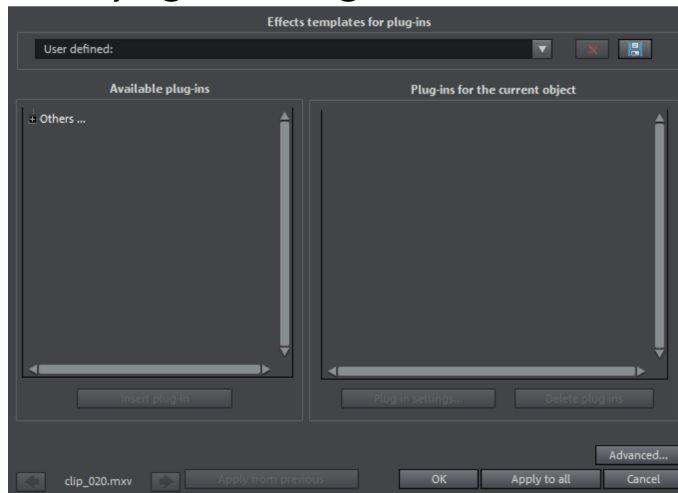
## Using video effect plug-ins

In order to be able to use plug-ins, they must be installed first. MAGIX Movie Edit Pro 2016 checks whether plug-ins are already available. If not, it will offer to download them from the Internet or to set the plug-in path manually.



In order to use a video effect plug-in, select the video or image object first, then open "Effects -> Extra effects -> Plug-in manager" in the Media Pool menu. This lists all available plug-ins on the right side of the dialog.

## Video plug-ins manager



**Effect templates for plug-ins:** MAGIX Movie Edit Pro 2016 does not include plug-ins due to licensing reasons.



You can save your settings by pressing the "**Save**" button and remove them by pressing "**Delete**".

**Available plug-ins:** All available plug-ins are listed here.

**Add plug-in:** The selected plug-in will be added to the editing chain ( "Plug-ins on the current object" list on the right side of the dialog). You can load as many plug-ins as you like simultaneously. They are then edited subsequently according to the list sequence. The plug-in order can be changed using drag & drop in the list.

**Plug-in settings:** Opens the settings dialog for the selected plug-in. All plug-in settings for the entire list can be saved together as a preset (effect templates for plug-ins).

**Advanced...:** Opens the dialog with advanced settings.

**Navigation buttons:** Switch to the previous or next movie via the navigation buttons in the lower part of the dialog of a movie.

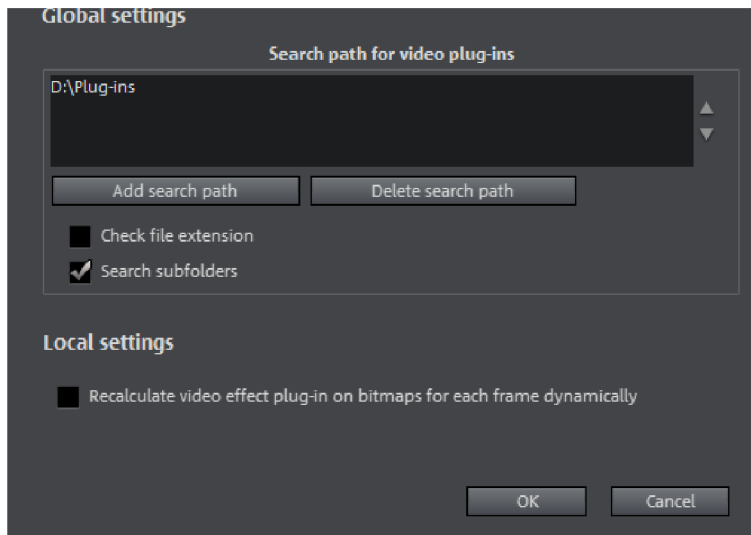
**Last used:** The settings used for the last videos will be applied. This option is active only if you edit one image after the next using navigation buttons (see above).

**OK:** Settings will be applied to the current video.

**Apply to all:** Effects will be applied to all objects included in the movie.

**Cancel:** The dialog will close, settings will not be applied.

## Advanced...



In the "Advanced" dialog, you can specify the search path for plug-ins. MAGIX Movie Edit Pro 2016 checks these for available plug-in files at program start and adds these to the list of available plug-ins. "**Add search path**" adds new search paths, and "**Delete searchpath**" removes them from the list again.

**Check file extension:** Accelerates the search for new plug-ins if a larger number of plug-ins are available by not checking if they are valid.

**Scan subfolders:** Extends the search to subfolders below the selected paths.

## Local settings

**Recalculate video effect plug-in on bitmaps for each frame dynamically:** If you apply a plug-in to a bitmap (image), then this option must be activated in case the plug-in creates moving effects.

## Animate objects, effect curves

The "Effects" tab under "Video effects" and "Movement effects" provide you with the effects which can be animated using keyframes.

The following objects can be animated:

- Combined objects
- Video objects
- Image objects (still images)
- Title objects
- Audio objects (in the Media Pool under "Effects" > "Audio effects" > "General")
- MAGIX 3D Maker objects (3D texts)

### Preparing animations

- First, select the object in the project window to animate. For complex animations, we recommend placing a marker beforehand for orientation.
- In the Media Pool, open the "Effects" tab and click on the effect you would like to animate under "Video effects" or "Movement effects".
- If necessary, set up the effect however you would like it for the start of the animation.
  - Using this button, at the bottom of the Media Pool, a timeline may be shown or hidden. You can see here which animated effects are currently applied to the selected object. Keyframes may be placed, selected, moved, and deleted.



There are two stippled lines in the timeline to help you orientate yourself while you edit movement. These lines will help you recognize the start or end of the transition.

### Place keyframe

Click the timeline to set the playback marker at the locations where a keyframe should be added.

**Note:** You can also use the timeline in the project window for exact positioning. Using project markers (view page 119) is recommended in this case.



- This button places keyframes for all parameters required in the animation.
- Additional keyframes may be added simply by placing the playback marker at the next keyframe location and changing the effects parameters directly.

The positioned keyframes may also be retroactively moved via drag & drop.

## Copy keyframe



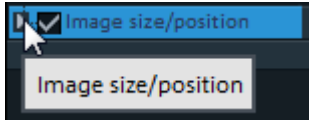
- Select the keyframes to be copied by clicking them and then press the "Copy" button.



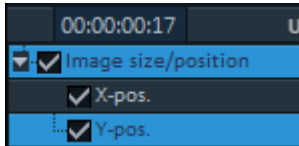
- Next, set the playback marker at the location for insertion and then press the "Insert" button.

## Display keyframes of individual parameters

Multiple keyframes are added simultaneously to effects if they include multiple parameters.



Click the small arrow beside the name of the animated effect to display all of its parameters.



Now all keyframes of the effects parameter can be individually moved, deleted, activated, and deactivated.

**Note:** Only those parameters are listed which are used for the animation. As soon as another parameter is required for editing the effect, it becomes visible to you here.

## Retroactively editing an effect's keyframes

Previously set keyframes can be retroactively and temporarily moved and their values edited.

- Keyframes may be moved via drag & drop. Simply click on the keyframe to be moved and drag it to the desired position.
- To change an effects setting for an already positioned keyframe, click the keyframe and adjust the effect in the Media Pool.

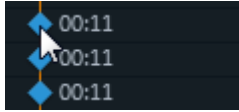
## Soft movement



The automatic Bezier interpolation applies an approximation curve at the keyframe.

This makes the movement progression softer and more natural.

## Delete keyframe



Select the keyframe to be deleted by clicking it.

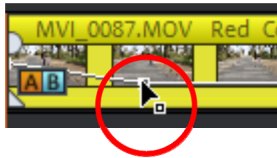


This button removes the selected keyframe.

## Editing an effects curve in the object



**Activate effects curve:** For each of animated effects parameter, a curve is created and placed over the object. Click this button to display the effects curve on the object.

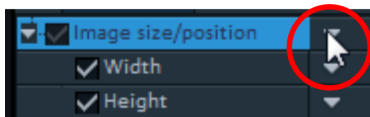


**Edit curve points:** The curve point can either be edited with the individual curve points (in "Standard" mouse mode) or by freely drawing the effect curve (in "Curve" mouse mode).

New curve points can be added to the curve in "Standard" mode via "Ctrl + Shift" and clicking; existing ones can be deleted in the same way. Every curve point can be moved with the mouse horizontally and vertically.

**Note:** The buttons for activating effects curves are first displayed once the first keyframe has been placed.

## Effects curves - Additional functions



The context menu can also be opened via the small arrow beside the effects indicator.

**Delete effects:** Removes the selected effect completely.

**Delete effects curve:** Removes the effects curve to be created again.

**Copy effects curve:** The effects curve is copied to the clipboard to be used at other positions.

**Insert effects curve:** A previously copied effects curve can be inserted elsewhere with this function at any time. This may be in the same object or in another object.

**Note:** If you would like to insert the curve into a longer or shorter object, then think about setting the option "Connect curve length with object length" correctly **before copying**.

**Combine effects curve with object length:** If this option is set, then changes to object length will affect the effects curve accordingly.

In practice, this behavior is needed rarely, for example if objects are stretched or compressed. The option is deactivated by default for this reason.

**Load effects curve:** A previously saved effects curve may be loaded via this menu item. This is useful, for example, if you have added your own default animations.

**Caution!** The current effects curve will be overwritten as another one is loaded.

**Save effects curve:** Effects curves can be saved as a separate file. This is useful, for example, if you want to add your own default animations and simply load them again at other positions again.

**Tip:** Be aware that during saving the setting "Connect curve length with object length" is saved as well and applied during loading.

## Edit effects curve

This dialog serves to stretch, compress and move effect curves within an object. The info bar of the dialog will display the effect, whose automation curve is currently being edited.

### Move position

**Time:** With each click on the arrow, you can move the effect curve forward or back by the displayed time value.

**Effect:** Every click on the arrow up or down moves the effect curve by the entered value. Depending on the effect, it is possible to enter exact or percent values.

### Stretch/Compress

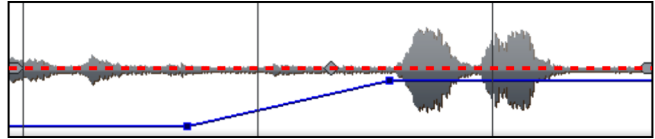
**Time:** The effect curve will be stretched or compressed by the entered time value. **Invert** reverses the curve on the time axis and reinserts it in "reverse". The entire object duration will be considered.

**Effect:** The effect curve is stretched or compressed in its values, no time-related editing takes place. The selected option (see table) is decisive in editing.

**Mirror:** The entire curve is mirrored along the X-axis, whose position is determined by the following option (see table).

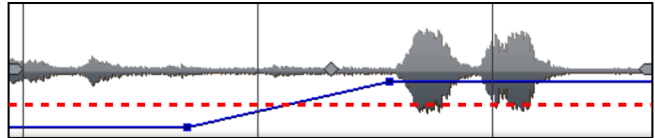
**... around object center:**

The X-axis lies exactly at the center of the object.



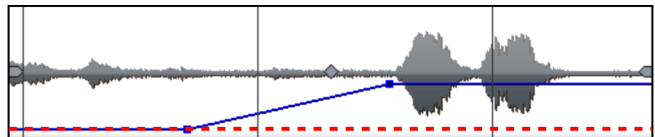
**...around curve center:**

The X-axis lies between the upper and lower automation point.



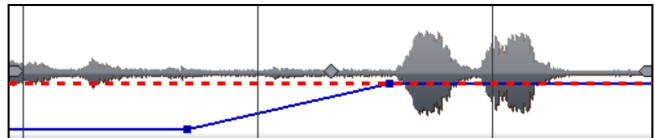
**...around curve minimum:**

The X-axis lies at the level of the lowest automation point.



**...around curve maximum:**

The X-axis lies at the level of the highest automation point.



## Create overlay graphic/animation

Create vector graphics or animations in an external editor such as Xara Designer Pro in order to use them as overlay objects in MAGIX Movie Edit Pro 2016. A typical use scenario would be to draw an object in order to darken certain portions of the video, such as a black bar to cover a person's eyes. Overlay objects aren't bound to the source material by grouping. They can be moved and edited as you please.

**Note:** This menu will appear only when a corresponding graphics program is installed on your PC.

To create an overlay object, proceed as follows:

1. In the arrangement, select the image or video object, for which an overlay effect should be created.
2. Right-click on this object and in the context menu select "Create overlay graphic/animation".

The external graphics editor will be launched. Your selected object will be displayed to help you get a better idea of how to best design your overlay.

3. Create the template for the overlay object. You can use all editor functions.

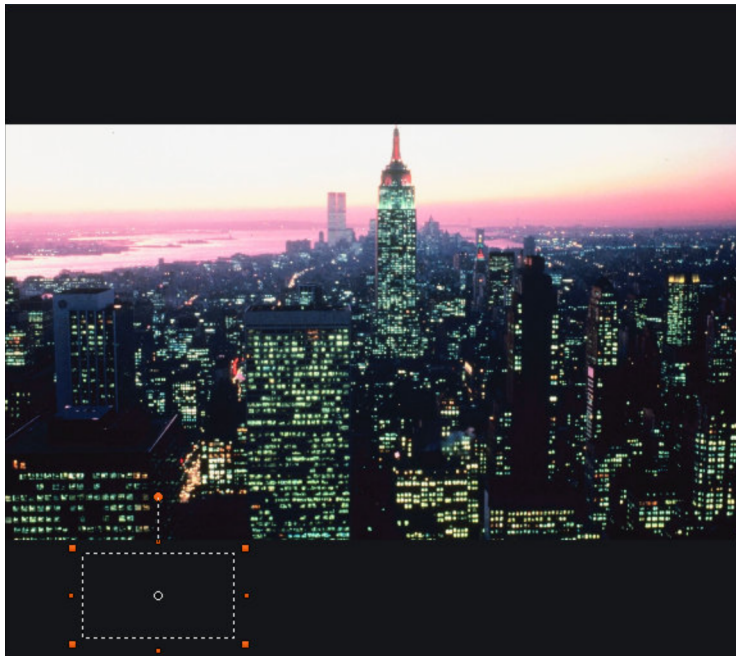
4. Close the editor You don't have to save the project in the editor, as the overlay object will automatically be transferred to MAGIX Movie Edit Pro 2016 and placed below the image or video object when the program is closed.

You can continue to edit it in MAGIX Movie Edit Pro 2016 as you wish, for example using Animated movement effects (view page 144).

## Animation from outside the image

Animated effects are useful for making objects or titles appear to "fly" across the image. In this case it is recommended that the start and end point of the animation are placed outside of the image.

This will require a video object and a second object to be animated, for example a title or a small object to float across the video image.



This is how it works:

1. Click on the preview monitor and zoom out of the video image (Ctrl + mouse wheel). This displays the workspace at the edges of the reduced preview image.



2. Select the effect "Position/size" (view page 144).
3. Move the object to be animated to the position on the workspace where the animation should start. For example, to the left of the preview image.
4. Position the playback marker at the location where the animation should start.
5. Create a keyframe for the animation start.
6. Position the playback marker at the position where the object to be animated should disappear from the image.
7. Move the object to be animated to the position on the workspace where the animation should end; For example, to the right of the preview image.
8. A second keyframe for the end of the animation will be placed automatically.
9. Play back the result. The object to be animated should now fly from left to right through the video picture.

## Attach to picture position in the video

You can attach a video, picture or text object to moved picture content of another video. The attached object automatically completes the movement of a picture element from the film, making it appear magnetic. For example, you could use this method to insert a hat that stays on someone's head throughout, even if the person hops through the picture.

Let's roll:

- Place an overlay object (e.g. a photo of a hat) on a track below a video with a moving image element (e.g. a walking person).
- Right click the object and select the "Attach to picture position in the video" movie point.
- Then click "Continue" in the dialog that appears.

**Note:** If you want to attach two objects, e.g. a title and a speech bubble, an additional dialog appears, which lets you select the objects you want to attach to your video.

- The next dialog asks you to draw a frame around the image content to be tracked. The content should have high contrast to its background.
- Movement will be automatically calculated and a series of keyframes that control the position and size of the effect according to your wishes will be generated.

## Image stabilization

The motion stabilizer reduces unsteady camera motion and helps to smooth pans. This option can be accessed from the context menu of a video object or the "Effects" menu > "Open video objects".

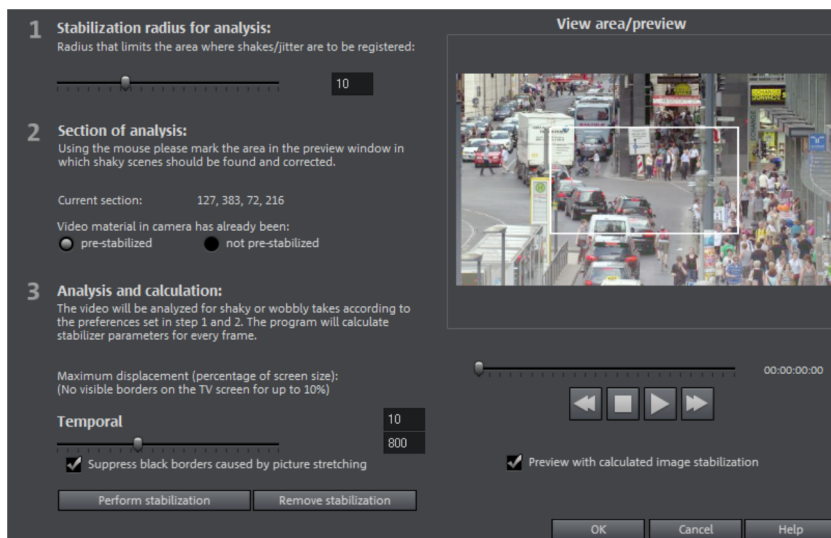
## Functionality

Image stabilization balances undesired picture movements. The motion stabilizer equalizes inadvertent movements in the image by moving the image in the opposite direction in accordance with the wrong movements. This produces unusable edges in the footage that are cut off automatically, and black strips, which are then removed using a zoom shot. The result: A clearly more stable, almost imperceptibly larger picture.

## Application

First you have to check the movie material for shaky scenes. To do this click on the "Stabilize" button. Based on the preset parameters, a relative shift between the pictures is calculated. After concluding the analysis, take a look at the suggested correction, then use the slider for further adjustments. Once you are happy with the final correction click OK. If the first scan did not provide a satisfactory result, try changing the parameters below and repeat the process.

## Image stabilization dialog



**Stabilization radius for analysis:** To prevent the image stabilizer from recognizing every camera movement as unwanted shakiness, you can determine the radius within which movement is accepted; the larger the stabilization radius, the more shakiness is corrected. Changing this parameter will require re-analysis of the source footage.

**Section of analysis:** This area determines the area of the footage that should be analyzed. The center of the image is preset. If shaking occurs in one area more than in another, then you can move the analysis area (e.g. a foreground element at the edge

is especially shaky). To do this, use the mouse to “capture” the shaky area. The smaller the area, the quicker the analysis will be calculated. Generally, changing this parameter will require re-analysis of the source footage.

**Maximum displacement:** Correction moves the image accordingly to the shaking movements. This means that the edge of the image will be removed. This value determines how large the edge area is which may be cut away by the stabilization feature; the smaller the value, the less movement correction. Changes to this value are immediately applied.

**Temporal smoothing:** This value determines the speed of the movements considered shaky. This allows you to differentiate between a panning shot and a nervous hand-held shot. Changes to this value are immediately applied.

**Cancel:** Exits the dialog without accepting changes to settings.

**Reset:** Resets the current settings.

## Image improvements for the entire movie

You can open the effects from the the settings via the “Effects” menu. All of the settings made here influence the entire movie. Settings are made separately for each individual movie in the project.

On the right, you’ll see a preview of the current setting. Use the position slider to jump to different positions in the movie or to various scenes in order to see how the selected setting affects the image material.

## Brightness/Contrast

**Brightness:** Use the sliders to reduce or increase the objects’ brightness.

**Selective brightness (gamma):** “Gamma” determines the mean gray scale that can be calculated from the various color ranges. “Selective brightness” is the most important function for image improvement. In the preset list, select the various envelope curves to edit only the dark, median, or brightest areas of the image.

Using the fader you can also set the power of the brightness/darkness adjustments.

**Contrast:** You can increase or lower the object’s contrast.

**Color space correction:** This option is effective against powerful colors that violate TV standards and can no longer be displayed correctly on-screen. The color saturation of the affected material is thereby reduced until the maximum permitted value is reached.

## Color

**Saturation:** Use the saturation slider to increase or reduce the hue proportions in the image. A newly developed algorithm is applied which makes color changes related to other parameters (e.g. contrast settings) in order to achieve the most natural coloration possible.

**Hue:** Use the palette to select a hue for coloring in the picture.

**Red/green/blue:** Changes the color mix using the slide controller.

## Image sharpness

Use the slider to adjust the sharpness or blurriness of an entire slideshow.

**Apply to:** Set whether the sharpness should only affect edges or whether the blurriness should only affect surfaces. This enables you to effectively reduce ongoing image distortions.

**Anti-flickering filter intensity:** The anti-flickering filter affects only still images. It is especially intended for zooms in images with many edges and transitions with high contrast (e.g. fences, bars, brick walls). High-frequency images such as these begin to flicker when they are reduced in size. This filter smoothes these edges somewhat. You should set the intensity of the anti-flickering filter according to your preferences, because smoothing is always a compromise between good contrast and fluid image sequence during playback..

## TV cropping

This option provides optimal adjustment of the image size for a real television screen (anti-cropping). Without this adjustment, the screen could cut off edges of the image in some cases.

**Show TV screen area in preview monitor:** This option displays the image borders of the television as lines in the preview monitor. The four image borders of the TV area may be specified via the four input fields. Of course, the real size of the TV image must be familiar for this. The following process is available to determine this:

The four input fields also enable the borders of the four sides to be adjusted freely in percent. In this case, the best approach is to determine a balance between reduction, bar formation, and the image section:

- If all four edges feature the same value, then the image will be reduced proportionately. In this case no distortions will occur, but there will be bars along the edges.

- If different values are entered for the 4 fields, the image size is reduced disproportionately. This will distort the image.

**Apply border range to:** With this option, the entered values for the four borders are applied as an image reduction. The result may be checked immediately in the preview monitor.

## Determining the visible TV frame size

To determine the picture properties of your television as well as optimal image size editor settings, you should perform a test run:

- Load the project "Visible TV image" from the folder "My Media -> Projects -> Visible TV image" in the Media Pool.
- Play back the film and read the instructions on the video screen.
- Burn the project to DVD
- Place the disc into the player and play the film. Compare the TV picture to the picture displayed on your video screen by MAGIX Movie Edit Pro 2016.
- Determine the proportional value of the borders cropped by the television with the four measurement scales along the edges of the test picture.
- Enter the values in the "Full TV size" editor.

The image size is now optimized to your TV picture. Please note: Depending on device settings and disc media type, the cropping values may vary slightly.

## Image improvements for individual objects

The context menu or in "Effects -> Video object effects" features various adjustments for selected video and image objects.

**Interpolation for interlace material:** Select this option to remove interlace artifacts from the (video) image. If, for instance, you extract still shots from a video, interlace artifacts appear in sequences which feature movement.

**Anti interface filter:** Choose this option for still pictures with detailed structures and high contrast. This filter reduces line flickering during TV playback.

**Border crop adjustment:** Select this option if the edges are cropped during playback on your television. Values stored in "Film effect settings (view page 170)" will be applied.

## Audio editing

In principle, any track in MAGIX Movie Edit Pro 2016 can be used as a sound track. There are no specific track types. But it is easier not to mix object types within one track.

### Load and edit audio files

- All importable audio files may be accessed in the Media Pool and previewed via the video monitor by a clicking on the file name.
- The files may be dragged into the project window by holding down the mouse button (drag & drop). Tracks from audio CDs may also be integrated via drag & drop.
- Edits, fine positioning, volume settings, and fading in and out may all be adjusted in the project window using the object handles directly.
- Various effect curves (view page 163) may be selected for audio tracks, dynamically controlling selectable effects, volume or stereo panorama.

### Adjust loudness of all selected objects

This function adjusts the loudness values of all selected objects according to the "reference object". The object that has just been activated is used as the reference object.

#### Requirements

- Objects need to be at least 5 seconds long for a reasonable calculation. An object length of 10 seconds or longer will provide better results.
- Background music provides the best results. In the vast majority of cases, music provides a homogeneous sound image and minimal volume changes (of course, very good results can also be obtained with video material).

#### Open

1. Set the object loudness (view page 111) of the reference object to the desired value.
2. Select all objects (including the reference object) whose loudness you would like to adjust.
3. Right click the reference object to open its context menu. Select "Adjust loudness of selected objects" (for Combo objects (view page 106) in the submenu „Audio functions“).

or

Press the Shift key and click on the reference object. Then go to "Effects > Audio object effects" and select "Adjust loudness of selected objects".

**Result:**

- MAGIX Movie Edit Pro 2016 determines all loudness values for the selected objects und adjusts them to fit the reference object. The object loudness of the remaining objects will also be adjusted accordingly.
- If the adjustment results in an object loudness which is so high that it could possibly cause clipping, MAGIX Movie Edit Pro 2016 will provide an automatic correction. This will lower the volume of all objects (including the reference object).

**Problems & solutions**

For objects containing large loudness differences or noises (e. g. in video camera recordings) the result may not always be satisfactory. Prepare these objects as follows:

1. Split (view page 281) the object at the corresponding transitions before carrying out the function.Loud
2. Open the function (see Open).
3. Afterwards transition the objects with simple crossfades (view page 116).Loud

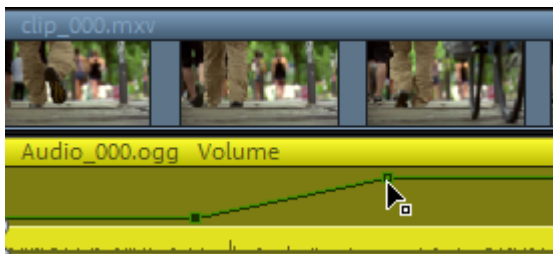
**Edit volume curve**

You can use volume curves to easily edit the audio track of an object as you wish.

1. In a project, select an object, whose volume you would like to adjust.
2. Open the volume curve by going to "Effects" > "Audio object effects" > "Volume curve".

You will now see an additional line in the audio track, the volume curve.


3. When you touch this line with your mouse cursor, the cursor is transformed from a hand symbol to an arrow. Now if you click on the line, you will create a point (keyframe), which you can grab with the mouse cursor and drag to a lower position. This lowers the volume of the overall object.



4. Create an additional point and move it down as well, lowering not the entire volume curve, but simply a section of it.

You can create as many keyframes as you wish, adjusting the volume curve section by section, until all segments play at the appropriate volume. Check whether the keyframes are positioned right by playing back the track (spacebar starts and stops playback) and listening to hear the effect of the keyframes.

If you would like to move a keyframe to the left or right, grab it with the mouse cursor and move it to the right position.

If you would like to delete keyframes, use the effect overview in the Media Pool under "Effects" > "Audio effects" > "General" as described under "Animate objects, effect curves" (view page 161). Select the keyframe that you wish to delete and click on the Delete button. .

## Import audio CDs

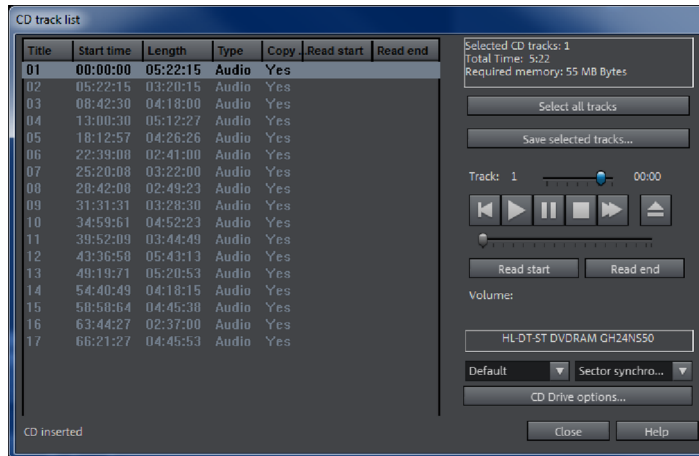
Entire music tracks from audio CDs can be imported into the project through the Media Pool in the same way as importing files from the hard drive.

1. Insert an audio CD into the CD/DVD drive of the PC
2. Go to your CD/DVD drive in the Media Pool (File Manager, Computer). The individual CD titles appear in the file list.
3. A simple mouse click starts the playback of the CD title for sampling purposes
4. Drag & drop the track from the CD into a track of the current project and it will be digitally scanned and copied to the hard-drive. The files will be saved in the import folder (may be specified in "File" > "Settings" > "Program..." > "Folder" (More information can be found in the section "Folder" on page 74)).
5. The CD track appears in the track as an audio object and can be played back or edited immediately.



## CD track list

Use the CD import dialog for more advanced control of the import process, e. g. importing sections from music tracks. You can access this dialog box via "File" > "Import" > "Import audio CD track(s)...". This opens the dialog "CD track list".



Tracks can be selected from the list with a mouse click or with the key combination Shift + arrow or Ctrl + mouse click.

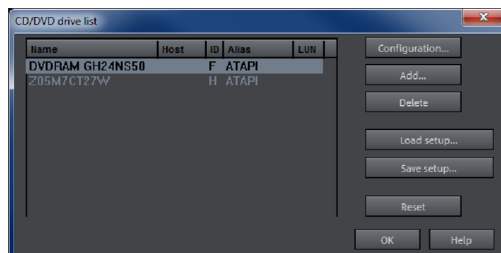
Transport control in the dialog activates the preview function. The playback arrow starts audio playback of the first selected track.

**Select all tracks:** This option selects all audio tracks in order to copy the complete CD.

**Save selected tracks:** This button opens dialog to save selected tracks. You can either place all files into a single WAV file or create a separate WAV file for each track. A new object will be created in the arrangement for each track in either case.

**Options CD drive:** With this option you can access the "CD-/DVD drive list".

## CD/DVD drive list



**Configuration:** This button opens the configuration dialog, where various special settings can be made.

**Reset:** sets drive settings back to default.

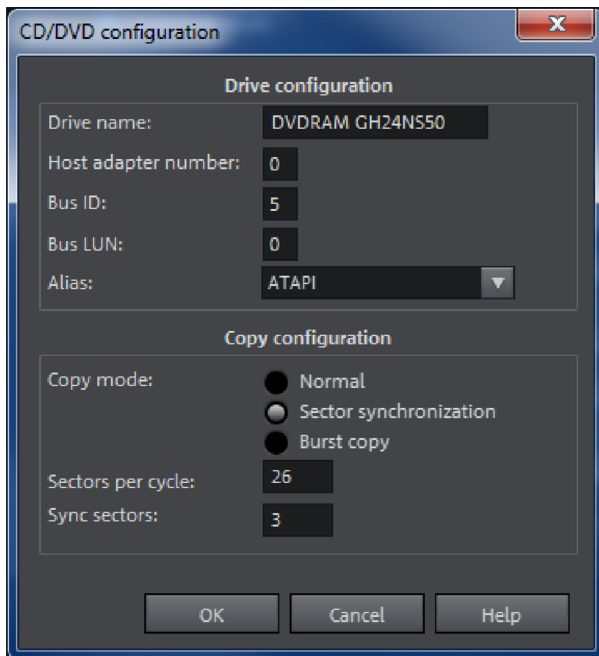
**Add:** Creates a new drive in the list, which first requires special settings.

**Delete:** Deletes selected drive from the list.

**Load setup:** Loads the current drive list and all configuration data from a \*.cfg file.

**Save setup:** Saves the current drive list and all configuration files in a \*.cfg file.

### CD/DVD-ROM configuration



**Drive Name:** Lets you edit the name of the drive in the list. This is useful if you create more than one entry accessing the same physical drive.

**Host Adapter Number:** Lets you specify the number of your SCSI adapter - normally 0.

**Bus ID:** Here you can enter the ID of your CD-ROM drive. Be sure to set the correct ID, there is no error checking!

**Bus LUN:** sets the LUN parameter, normally 0.

**Alias:** Lets you select the manufacturer type of your CD ROM drive.

**Normal copy mode:** copies audio files without any software correction.

**Copy mode sector synchronization:** copies audio files with a special correction algorithm. This is especially useful, since many CD drives have problems finding an exact position again and gaps can occur.

**Burst copy mode:** optimizes the speed of the copy process, no software correction is used.

**Sectors per cycle:** defines the audio sector count that should be read from the audio CD in one cycle. The higher the number of sectors, the faster the copying process. Numerous SCSI systems have problems with more than 27 sectors.

**Sync sectors:** sets the count of audio sectors, which should be used for software correction. A higher number results in a better synchronization but also in a slower copying process.

## Audio effects

### Using audio effects

#### Audio effect presets

In the Media Pool you will find a broad palette of effect settings which you can add to audio objects via drag & drop.

#### Track effects

Track effects always apply to all audio objects of a track. This sets the mixer (view page 177).

#### Audio effects plug-ins

MAGIX Movie Edit Pro 2016 supports VST as well as DirectX audio plug-ins. These are usually effects modules such as reverb, equalizer, dynamics compression, etc.

#### Installation

Before using audio effect plug-ins, they first have to be installed – this process may be different depending on the plug-in. VST plug-ins are typically saved in a certain directory, which must be entered in the MAGIX Movie Edit Pro 2016 path settings

(view page 74). After the path has been indicated, MAGIX Movie Edit Pro 2016 scans it for working plug-ins and offers them to be used. You can also indicate multiple locations where VST plug-ins are installed.

### Using plug-ins

Two so-called slots for track effects are located in the channel strip of the mixer for the corresponding track as well as in the FX tracks.

Clicking on the small triangle will let you select an effect from the list. Select "No effect" to remove a plug-in from the slot.

### Master effects

Master effects influence the mixed sum of all audio tracks. For this purpose a Master Audio Effects Rack and further plug-ins are provided. The Plus/Premium version includes the special MAGIX Mastering Suite for perfect sound.

## Sound optimization

This option opens an editor for correcting audio material discrepancies.

Select the cleaning function you desire from the upper part of the dialog:

- The equalizer (on page 180) allows you to manipulate the frequency spectrum – perfect for cleaning up muffled dialog.
- The compressor is a dynamic volume control that lends the overall sound a deeper, richer quality.
- The stereo FX processor justifies the position of the sound in the stereo panorama.
- DeNoiser, DeClipper, and DeHisser are professional noise reduction tools that do exactly what their titles say they do.

**Presets:** You can try out the suitability of a number of presets in the preset menu.

**Temporarily deactivate all effects:** Switches all the effects off.

**Apply to all scenes:** Applies the selected cleaning settings of all effects to every scene of the movie.

### Declipper

Should the input level of an audio recording be too high, overmodulation may result at the louder parts (the signal peaks). This digital distortion is also called "clipping": At the overmodulated area, the values that are too high are simply cut off, and typical, quite unpleasant-sounding crackling and distortion appear.

MAGIX Movie Edit Pro 2016 contains a special function for dealing with digital clipping and analog distortions. Of course, this only works to a certain degree.

Using the fader you can set at what level the Declipper should register a signal as being overmodulated and, if required, correct it (Clip level). This is important, as different sound cards show different clipping methods. The more the fader is turned up, the lower the level recognized by the program as overmodulated. If the clip level is set too high, unwanted sound modification may occur.

**Get clip level:** The clip level is gaged automatically.

## Denoiser

The Denoiser removes persistent background noise like computer hum, hissing, noises from sound charts, disturbance from ground circuits, interference from audio equipment with high-impedance outputs (such as record players), impact noise, or the turntable rumble.

The Denoiser requires a noise sample. Some typical noise sounds are included in the "Preset" selection menu.

Set the degree to which the noise should be reduced with the **fader**. It is often better to reduce interference signals by 3-6 dB rather than as much as is possible in order to keep the sound "natural".

A different option consists of creating a noise sample yourself. All that's needed is a short section from the audio track in which the distortion can be found. To get it, switch to the DeNoiser dialog by pressing "**Advanced**".

## DeNoiser – Advanced settings

### Step 1: Choose a noise sample

First of all, a sample of the distortion you wish to remove must be selected, i.e. a so-called "noise sample".

You have two options to choose from:

**Pick out typical background noise:** You can select and use a number of typical background noises from the flip menu. Select one and listen to it by pressing the "Play" button. If it is similar to the background noise in your sound track, go ahead and use it (see "Step 2: Removing background noise").

**Extract a new noise sample from an audio track:** You can also pick out a short passage (from the existing sound track) in which you can hear the background noise.

**Automatic search:** Searches especially quiet passages in which background noise is most noticeable.

**Previous / Play / Next:** These buttons allow you to play all of the passages found for easy comparison.

**Save as:** Once found, you can save noise samples to the hard drive. They then appear as entries in the "Typical background noises" flip menu to be used in other projects.

If you only wish to use the noise sample in the current project, you don't have to save. Instead just go to the "Remove noise" category.

## Step 2: Removing background noise

**Noise level:** The level of the noise reduction function should be set as precisely as possible. Values that are too low are expressed at a low distortion dampening level and in artifacts, like noises or "twittering" (see below). High settings produce dull results – useful signals that sound similar to hissing noises are also filtered away. Try to find the best setting for the project at hand.

**Reducer:** This sets the balance between the original signal and the signal with the applied noise reduction. It's often better to reduce interference signals by 3-6 dB rather than as much as is possible, so as to keep the sound "natural". In case of buzzing, it's best to apply complete removal.

### Dehisser

The Dehisser eliminates regular "white" noise typically produced by analog tape recordings, microphone pre-amplifiers, A/D converters, or transformers.

Noise reduction can be regulated in decibels with the fader. It is often better to reduce interference signals by 3-6 dB rather than as much as possible in order to keep the sound "natural".

**Noise level:** You can choose between different noise levels. The level of the noise reduction function should be set as precisely as possible. Low settings result in incomplete deletion of the hissing. Incomplete deleting of hissing produces artifacts and should be avoided, since high settings will produce dull results and some useful signals (i.e. woodwinds) which are similar to hissing are also filtered away.

### Equalizer

The 10-track equalizer divides the frequency spectrum into 10 areas (tracks) and supplies them with separate volume controls to allow you to achieve many impressive effects, from the simple rising of the bass to total sound transformation. If you raise the low frequencies too much throughout the whole level, it might cause distortions.

**Fader:** The volume of each of the 10 frequency bands can be set separately with the 10 volume controls.

**Link frequency bands:** The frequency fields can be bundled together flexibly in order to avoid artificial-sounding exaggeration in individual frequency fields.

## Compressor

The compressor is an automated, dynamic volume controller. Loud passages become quieter and the total value is raised. This makes the volume more consistent and speech easier to understand. A compressor is mainly useful in case background noise or music interferes with speech and simply increasing the volume of the individual objects or tracks does not result in any significant improvement.

**Level:** Regulates the level of compression applied (the "ratio").

**Function:** Defines the compressor depending upon the sound material.

## Stereo FX

The stereo FX processor provides adjustment of the alignment of the audio material in the stereo balance. If the stereo recordings sound weak and undifferentiated, an extension of the stereo base width can often provide better transparency.

**Bandwidth control:** Adjust the bandwidth between mono (on the extreme left), unchanged base width (center) and maximum bandwidth ("wide" on the extreme right).

Reducing the bandwidth can raise the overall level. In extreme cases, when the left and the right channels include identical material and the bandwidth control is pushed to the extreme left on "mono", the result can be a level increase of 3 decibels.

Raising the bandwidth (values of 100) diminishes the mono compatibility.

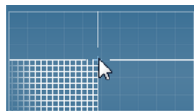
## Audio effect dialogs

Some of the following effects can be opened individually (via the context menu), or as part of the track or master effects rack. However, the functionality remains the same.

### Effect devices controls

Some effect options open a graphic window, which has the appearance of the studio effect device that it simulates (such as the "Echo/reverb" or "Timestretching" effect menus).

These virtual effect devices are controlled either with common sliders, knobs and buttons or alternatively with graphic sensor fields.



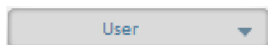
**Sensor fields:** Sensor fields can be controlled intuitively with mouse movements, with the graphic and the corresponding effect setting changing in relation to each other.



**Power switch:** Every effect device in the rack may be switched on or off separately. This button allows you to directly compare the neutral, unedited sound of the audio object with the effect setting you have chosen.



**Reset:** Every effect has a reset button that restores the effect device's initial default. In this state, the effect is not calculated into the sound, and the effect is not rendered.



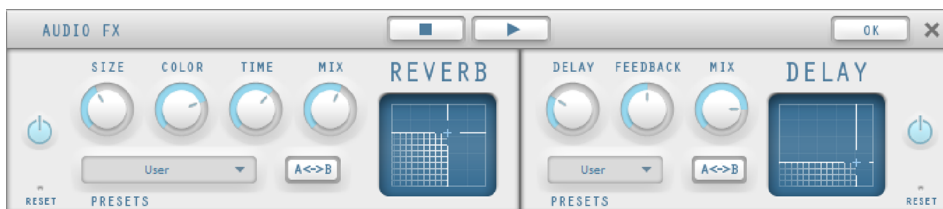
**Preset selection list:** Each effect device has a selection of proven presets which can be selected from a drop-down menu.



**A/B:** The A/B button compares two settings with each other. If you have selected a preset for the effect and make manual changes to it later, you can compare the original preset sound with the new settings by using the A/B button.

**Note:** The displayed graphics serve only examples and can differ from device to device.

## Echo/Reverb



The echo/reverb effect device offers newly developed and very realistic reverb algorithms to add more spatial depth to your recording.

## Reverb

Reverb is probably the most important but also the most difficult effect to generate.



## Parameters

The reverb effect has the following parameters:

**Size:** defines the size of the room (or the system for the plate and spring). The larger a room, the longer the sound travels between walls or objects. With some low "size" settings you can also reduce the distance between the individual reflections. This allows resonance to develop (accentuated frequency ranges), which can sound oppressive if the reverb sustain is too long.

**Time:** With this knob you can adjust the echo time and determine how much of it will be absorbed and, simultaneously, the reverb's decay.

**Color:** You may influence the sound characteristics of the effect within certain limits. The effect of this controller depends on the used preset. In rooms, "Color" controls the dampening of the highs in the reverb (from dark to bright) as well as pre-filtering of the signal. With plate and spring presets, this fader determines the dampening of the basses as well.

**Mix:** This controller sets the mix ratio between the original and the edited signal. For rooms, you can therefore move a signal further into the room by increasing the effect share. The last four presets are intended for use in an AUX channel of the mixer and are set to 100%.

## Presets

The presets represent the basic settings for the various room algorithms, which can still be varied along with the other parameters. Hence, they are more than just simply parameter sets.

## Delay

This effect is like an echo which delays the signal and repeats it.

**Delay:** This sets the period of time between the individual echoes. The more the control is turned to the left, the faster the echoes will follow each other.

**Feedback:** This adjusts the number of echoes. Turn the dial completely to the left, there is no echo at all; turn it completely to the right and there are seemingly endless repetitions.

**Mix:** This fader determines how much of the unprocessed original sound (dry signal) is subjected to the echo (wet signal). Application of this effect in an AUX bus requires the controller to be set to 100% (all the way to the right).

## Tempo pitch/resample



This effect device changes the object's speed and/or pitch.

Note: This effect may start automatically if you use loops with different original tempos in a project or when you make changes to the project tempo at a later stage. This effect is also used when you use the stretch mouse mode. You can find more information about this in the audio object chapter, *Change the playback tempo or pitch*.

**Tempo:** This control changes the tempo independent of the pitch ("time-stretching"). The object acts as if it were compressed or stretched on the track.

**Pitch:** This control changes the pitch independent of the object's speed ("pitch-shifting").

**+/- buttons:** With this function you can change the pitch in semitones.

**Setup:** This button opens a settings dialog where you can set the algorithm for tempo and pitch correction.

- **Élastique Pro:** This algorithm is used by default and provides optimal results for most audio material.
- **Élastique Efficient:** This is a version of the algorithm that saves computer power and has reduced sound quality as a result.
- **Monophonic voice:** This is a special algorithm for vocal solos, speech or solo instruments. It is also used for the Vocal Tune effect.

- **Resampling:** This effect corresponds with faster or slower playback of records or tapes. Every change in tempo results in a simultaneous change in pitch. This function requires very little processing time and is a popular design element for "Mickey Mouse" voice effects or drum loops, for example.

Note: Other algorithms (e.g beat marker stretching) are available for older soundpool samples. These ensure that older Movie Edit Pro projects sound exactly the same as before in the new version of Movie Edit Pro. However, these algorithms cannot be used once the sample has been changed to the default Élastique algorithm and the settings dialog has been closed.

## Audio effects in the mixer



You can open audio effect devices in the mixer using the "FX" button found in each track or in the right master area.

Under "Mastering" you will also find MAGIX Mastering Suite.

"Reset" resets all effect settings to original values.

## Equalizer



The 10-band equalizer subdivides the frequency spectrum into ten areas ('bands') and equips them with separate volume controls. This way it is possible to create many impressive effects, from a simple boosting of the bass to complete elimination of a certain range of frequencies. Note: If low frequencies are boosted too much, the overall sound level is heavily increased which may lead to distortion. In this event, adjust the overall volume downward by using the 'master volume' control situated at the bottom center of the effect rack.

**Slider control:** Each of the ten frequency ranges can be separately boosted or turned down with the ten volume controls.

**Link bands:** Using this button randomly combines the frequency ranges with each other in to avoid artificial-sounding overemphasis of an individual frequency range.

**Touch screen (right EQ section):** This is the 'sensor field' of the EQ. Here you can draw any type of curve with the mouse. This will be immediately translated into a corresponding control setting on the left side of the EQ.

## Compressor



The compressor is an automated, dynamic volume adjustment controller: louder passages become quieter and quiet passages become louder. A compressor is useful to make spoken passages more audible against background noise or music in case a simple increase of the overall volume is insufficient. Several useful presets are included for this purpose, however compression may also be set manually.

**Ratio:** This parameter controls the compression level.

**Threshold:** This sets the volume threshold below and above which compression is applied.

**Attack:** Sets the algorithm's reaction time to increasing sound levels.

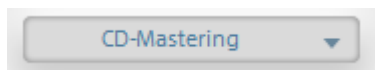
**Release:** Sets the algorithm's reaction time to falling sound levels.

**Gain:** The gain controller amplifies the compressed signal.

## MAGIX Mastering Suite

MAGIX Mastering Suite is a special effect rack for use with the mixer master channel. Its effects serve the so-called "Mastering" with which the finished mixed music file is given its last "cut".

The **On/Off switches** can switch the effects on and off individually. Each effect offers a number of presets, which can be selected from a list on the bottom edge of the effect.



The settings of all effects can also be saved together as one **preset** so that you can use your ideal mastering setting again for other arrangements.



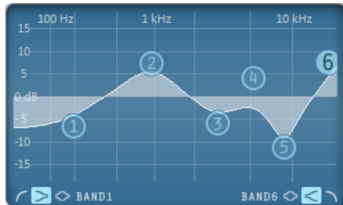
Each effect can be reset by pressing the **"Reset"** button.

**Note:** 5.1 Surround mode only provides the compressor (view page 186) and parametric equalizer devices in this case.

## Parametric 6-band equalizer

The parametric equalizer has six filter bands that you can use to shape the sound of the music track. Each band is a filter with a typical "bell shape". Within a certain frequency range around an adjustable middle **frequency** you can increase or reduce the signal level **gain**. The width of this frequency range is called bandwidth. The bandwidth is defined by the **Q** value. The higher the Q value, the narrower and steeper the filter curve.

You can influence the basic sound of the mix by boosting or cutting specific frequency ranges (low Q value) to give it more "depth" (lower mids 200-600 Hz) or more "air" (Highs 10KHz). You can also decrease very specific frequencies (high Q-value) to remove unwanted noise.



**Sensor field:** The sensor field displays the resulting frequency response of the equalizer. The frequency is displayed horizontally and the increase or decrease of the respective frequency is displayed vertically.

The **blue bullets 1-6** symbolize the six frequency bands. You can move them around with the mouse until you find the frequency response you want. The bandwidth (Q value) can be adjusted using the mouse wheel.

The faders beside the filter graphic display the parameters of the currently selected "band token".



You can use the knobs to set the values for each band more precisely. There is also a numeric field for each parameter where values can be entered.

**Gain:** This controller allows you to raise or lower the filter. Setting the controller to 0 deactivates the filter so it does not use any processing time.

**Freq:** The center frequency of the individual filters can be set between 10 Hz and 24 kHz with the frequency controller. Freely choosing the frequency enables multiple filters to be set to the same frequency in order to have a greater effect.

**Q (Bandwidth):** Here you can set the bandwidth of the individual filters to between 10 Hz and 10 kHz.

Bands 1 and 6 are special: Their **Filter Curves** can be edited in three different modes. The four editing points in the graphic have different functions in each mode.



**Peaking:** Here the effect curve is brought closer to the working point (which represents the peak of the curve) from both sides simultaneously.

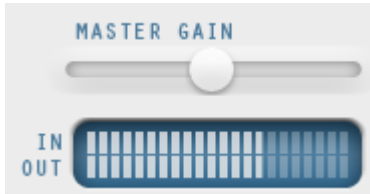


**Shelving** (Basic setting): Here the working point displays the beginning of the filter curve. From this point on there is a gentle increase or decrease in the frequency.



**High or Low Pass:** In Band 1 the working point displays the frequency which is filtered out of particularly high or low frequencies.

You can control the output level of the equalizer with the **Peak Meter**. With the **Master Gain Controller** beside it you can offset the level changes resulting from the EQ adjustments.



## MultiMax



MultiMax is a compressor with three independent frequency bands. The dynamics are edited separately for each band.

The advantage of a multi-band compressor versus a "normal" compressor is that the "pumping" tendency and other unwanted side effects are dramatically reduced while editing the dynamics. For instance, it can prevent a bass top peak from "reducing" the entire signal.

Multiband technology also lets you specifically edit individual frequency ranges.

**Link:** When this function is activated and one controller is adjusted, all controllers are changed at the same ratio. However, the way the dynamics are edited is not affected.

**Setting the frequency bands:** The settings of the frequency bands are changed directly in the graphic. Simply click on the separator lines and move them.

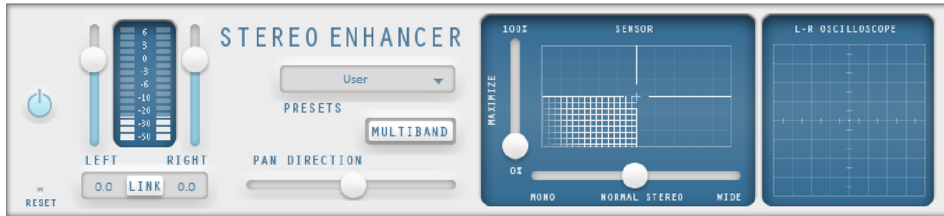
**Lo/Mid/Hi:** These knobs define the level of compression for each frequency band.

**Presets:** MultiMax has a selection of presets for various applications.

## Enhancer

The Enhancer enables the justification of the audio material in the stereo panorama to be adjusted. If the stereo recordings sound unfocused and undifferentiated, an extension of the stereo base-width can often provide better transparency.

Use the maximize function to move the echo and improve the stereo picture, for example, into the foreground.



**Volume controller:** Adjusts the volume of every single channel to adjust the complete panorama. The reduction of left and right levels is displayed under the control buttons.

**Pan-direction:** Use this controller to move the sound source from the middle into stereo panorama. The signals at the outer edges of the sound picture remain unchanged.

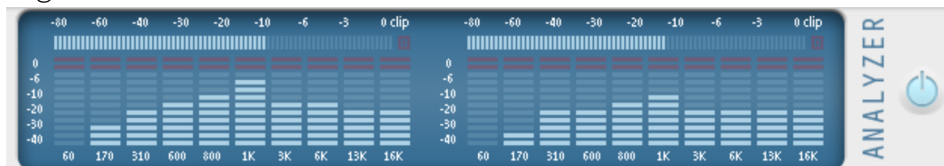
**Multiband:** This option switches from "Stereo FX" to "Multiband" mode. Stereo editing only applies to the middle frequency, the bass and highs remain unchanged.

**Bandwidth/maximize sensor field:** Adjusts the base width between mono (extreme left), unchanged base width (normal stereo), and maximum base width (wide, extreme right). Raising the bandwidth (values over 100) diminishes the mono compatibility. This means that recordings edited this way sound hollow when listened to in mono.

Maximize strengthens the spatial component of the recording, which also increases the stereo transparency without influencing the mono compatibility.

**Stereo meter (correlation gauge):** This provides a graphical display of the phase relation of the audio signal. You can use it to review the orientation of the signal in the stereo balance and the effect of the stereo enhancer. To maintain mono-compatibility, the "cloud" shown should always be higher than it is wide.

## Digital Audio Meter



On the lower border of the MAGIX Mastering Suite there is a digital audio meter which provides separate control method displays for 10 wave bands on each channel. This device is used for orientation purposes, e.g. selective equalizer editing.



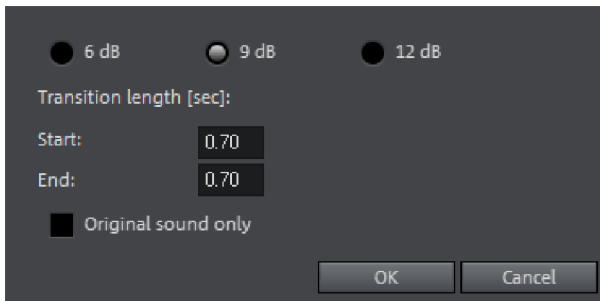
## Limiter



The limiter prevents clipping by automatically lowering the level if it is too high. Quiet parts remain unaffected. In contrast to the compressor it tries to leave the basic sound as unaffected as possible.

## Automatic track damping

This command from the context menu automatically dampens the volume of other audio objects. The volume of the selected object on the track remains unchanged.



**Only original sound:** Here you can also specify whether you want to dampen the original sound of the video or all audio tracks.

**Transition length:** In the dialog you can activate and deactivate the value of the dampening. You can use this command while recording audio (view page 98) (Audio recording, advanced options).

## Mixer



The Mixer can be opened by pressing the "M" key or via the button bar in the main window (also: "View" > "Mixer").

### Mixer channels

In the mixer, every project window track is represented by a corresponding mixer channel. The mixer channel offers a series of options for regulating the audio signals of objects in the track.



**FX:** Opens (view page 185) the audio effects rack for the corresponding track.

**Auto:** Activates the volume and panorama automation (view page 195) of the corresponding track.



**Plug-ins:** Click the triangle button to access the audio plug-ins (view page 177) installed on your PC.



**Volume:** You can set the volume of a track using the large fader.

The fader can be fine-tuned in the following way:

- Press the Shift key while setting the fader. This makes the control range of the fader ten times larger.
- While setting the fader, move the mouse away from the fader horizontally. The control range of the fader will increase in accordance with how far the mouse is from the fader.



**Stereo panorama:** Use the knob to define the stereo position of each track.

**Note:** Double-clicking on the volume or panorama control resets it to its default passive setting in which no processor output is required. Double-clicking again sets it back to its former position.



**Solo/Mute:** The "Solo" button switches a track to solo mode, i.e. sound playback for all tracks which have not been switched to solo mode will be deactivated. "Mute" mutes the track.

## Effect channels

In addition to normal mixer channels that correspond to the tracks in the arrangement, you can create two separate effect channels. The principle behind them: You can take a partial signal from a normal channel into an effect channel, where the partial signal is then processed with additional effects. This is a common process used in professional audio production.



In each mixer channel there are two FX-Send knobs (FX 1 and FX2 ) under plug-in slots.

Here you can determine the strength of the signal from the track that is routed into both available effect channels.

The FX tracks are usually hidden in the mixer. When an FX-Send is used, they will appear to the left next to the master section.



An effect channel is a complete additional mixer channel with volume and panorama controls, an effect rack and two plug-in slots.

Reverb is activated in the first effect channel by default because this is the most important application of send effects.

The volume control regulates the strength of the effect channel and corresponds to an AUX return control. The "Mute" button is used to switch the FX function on and off. By activating "solo", you can listen to the effect channel separately. Track peakmeters that send to the FX track appear greyed out.

## Master channel

The master channel is to the right of the individual channels. It controls the overall sound and offers all editing options: volume, panorama, plug-ins and effects.

The FX buttons and the plug-in slots work just like in the other channels. The FX button opens the master audio effect rack. With "Reset" you can reset all mixer settings, including effect channels.

**Mastering:** Here you can open the MAGIX Mastering Suite.

**5.1 Surround:** This button switches the mixer into Surround mode (view page 198).

Both faders control the total volume.



**Link buttons:** If the link button is deactivated, the volume of the right and left channels may be set individually.

**Note:** This function is available only in the Plus/Premium version.

## Volume and panorama automation

You can automate volume and panorama for a track. This means that during playback you can record the movements of the sliders on the track. This way, for instance, you can simulate the movement of a sound source from left to right and make volume adjustment instantly during playback.



As long as the **auto** button for a track is activated, all movements of the volume and panorama sliders will be recorded.

The automation is displayed as a curve in the project window and can be edited later with the mouse.

**Note:** The mixer's automation curves relate to a track, which means that they are independent of the objects contained on it.

## 5.1 Surround

MAGIX Movie Edit Pro 2016 supports playback and export in authentic 5.1 surround.

**Note:** This function is available only in the Plus/Premium version.

## Requirements

You will require a sound card or a sound chip which is integrated into the computer's motherboard with six individual outputs to playback the individual channels:

- front left (**L**) / right (**R**)
- centre (**C**) / subwoofer (**LFE**)
- back left (**Ls**) / right (**Rs**)

Surround playback is possible with all audio driver models (see Playback settings (view page 72)), (Wave, DirectSound).

**DirectSound** is supported by most of the standard sound cards.

**Wave drivers** are similarly supported by many standard sound cards; however, individual sound cards (for example, Soundblaster) require access to DirectSound.

Output of the six output signals is achieved in all driver models in the output channels in the same (standardized) order:

**Channels 1/2: L-R**

### Channels 3/4: C-LFE

### Channels 5/6: Ls-Rs

When using WAV drivers, the loudspeaker settings normally have to be changed to 5.1 playback in the control panel. On most systems the program does this automatically while using DirectSound.

## Importing and exporting surround audio files

### Import

When importing MPEG-2 files with surround sound (e.g. VOB files from DVDs or DVB-TV recordings), you can choose from two different applications:

- **Mixdown:** Surround sound is displayed as an audio object under the video object, playback of the Surround track is reduced and recalculated to stereo playback. Use this option if you don't wish to edit the surround sound, but rather wish to export it. You can also use it if you think that a stereo export is enough to meet your requirements
- **Surround mix:** The individual Surround channel pairs (L-R, C LFE, Ls-Rs) are split into three audio tracks as separate objects and the mixer is then set to Surround mode (view page 197). This mode allows you to change the Surround mix.

**Note:** Downloading an audio package upgrade is required for importing surround files. This is done automatically when you first import a data file.

In MAGIX Movie Edit Pro 2016 the import of surround is always executed as a mixdown.

MAGIX Movie Edit Pro 2016 Plus and Premium can also import interleaved wave files (multi-channel wave files), multi-channel Windows Media Audio and MP3 surround files. A surround mix is always created.

### Export

Surround mix exports can occur in any one of the following formats:

- 6-channel PCM files (interleaved wave)
- Windows Media files (as a surround soundtrack of a Windows Media Video or WMV-HD disc)
- MPEG-2 files; requires downloading the audio package upgrade

The files created are fully compatible with the normal file formats, this means that they can also be played on computers incapable of playing surround (in normal stereo).

The export is performed via the same menu commands (e.g. "File -> Export movie -> Audio as wave") like the normal stereo export. You will then be asked if the export should be in stereo or surround format.

## Export 5.1 surround via Smart Encoding

You can also burn original material with surround sound to DVD again without the need for the 5.1 surround codec or export the corresponding MPEG files while keeping 5.1 Surround Sound. To do so, use the "Smart Rendering" option which transfers the unprocessed parts of the original material to the destination file without renewed encoding. Read more on this in the MPEG encoder settings section General settings (view page 350).

**Note:** The import has to be executed as a mixdown, the audio material cannot be changed (no fades, no audio cleaning, no volume adjustment). Hard cuts are not made precisely according to the frame but at the GOP borders.

## The mixer in surround mode



To activate surround playback, open the mixer (M key) and click on "5.1 surround" button in the master.

In the master, six peak meters for the individual channels are provided. The normal panorama button turns into a representative display of the surround editor (see below), which can be opened by clicking on the display.

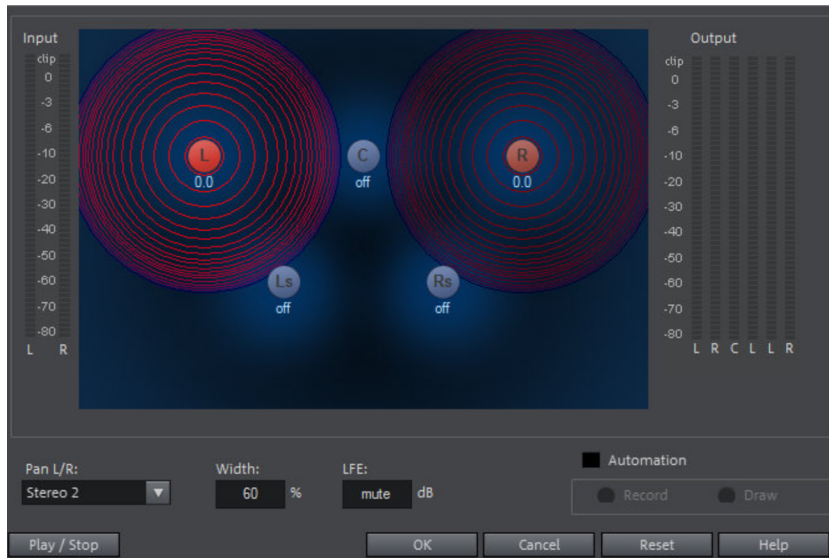
The surround sound editor is also available to the effects tracks. For example, you can send the original track to the front **L/R speakers**, the FX track however will remain at the rear **L/R speakers**.

The master volume is applied to all channels, here the left controller influences channels L and Ls, the right controller; channels R and Rs and the middle value of both controller; the channels C and LFE.

The master plug-ins are only applied to the front channels.

The full effects palette of the mastering effects rack in MAGIX Mastering Suite is not available in 5.1 surround mode, but rather only the compressor and the parametric equalizer (from the Mastering Suite) are provided. The settings of these effects have the same effect on all six channels.

## 5.1 Surround editor



The selected mixer track's 5.1 surround editor allows you to arrange the audio signal of a track (displayed as two red sound sources) in stereo space. The signal is dispersed to the 5 (blue) loudspeakers which represent the individual surround channels.

There are 6 channels:

- **L:** front left
- **R:** front right
- **C:** center
- **Ls:** back left/left surround



- **Rs:** back right / right surround
- **LFE** subbass (**L**ow **F**requency **E**ffect) channel

Dispersing the signal to the 5 loudspeakers occurs after the sound source emits a sound field of a certain level (displayed as red circles). The further away a loudspeaker's source is, the lesser its share of the corresponding loudspeaker channel. The position of the loudspeaker can be moved with the mouse.

The subbass share (**LFE**) is set directly from the corresponding value table. It can also be changed by dragging the mouse.

There are various modes in which you can use the source signal:

- **Mono:** The (stereo) source signal is seen as mono material, the left and right channels are mixed together and arranged together. The original stereo information is lost here.
- **Stereo 1:** Similar to mono mode insofar as the left and right channels are moved together, but only a portion of the left source is audible in the loudspeakers **L** and **LS** and only a portion of the right source in the right channels **R** and **RS**. The stereo information remains as intact as possible.
- **Stereo 2:** The left and right channels can be moved individually. The distance between the left and right source is retained when you move the left source. You can move an individual source by holding down the "Alt" key.
- **Center/LFE:** Only the left channel is arranged. In return, the LFE share is drawn solely from the right channel. This mode is only important for importing Surround material.

**Width** determines the level of the sound field of an individual source.

## Automation

Panning of the sound source on the loudspeaker can be automated to simulate movements in the room.

For this to happen "**Automation**" must be activated. There are two methods to create automations: record and draw.

To **record** (when automation is on), the sound source is moved between the loudspeakers during playback. When recording the automation, the "Record" check box lights up red.

The draw function is an alternative to drawing out complex movements. When drawing in active mode, all panning movements are transmitted to the time interval between the start and end marker (when the mouse button is held). You can thus draw the entire movement curve for the selected time range.

"Reset" deletes surround automation from the track.

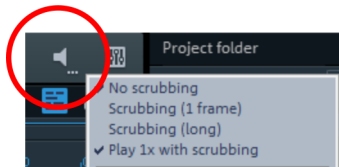
There is no automation of the parameters for width and LFE, of the distance between the left and right source in "Stereo 2" mode, or of the loudspeaker positions.

## Scrubbing

The term "scrubbing" originates from the age of cassette players and provides quicker monitoring of passages of a film or a piece of music. The function plays short samples at the original speed.

**Note:** In order to preview individual audio objects completely, use "Preview (view page 63)" mouse mode.

### Activate scrubbing



Scrubbing can be activated by right clicking the speaker button.

### Scrubbing: Modes

**No scrubbing:** Scrubbing is inactive. If the playback marker is set or moved, then sound will not be played.

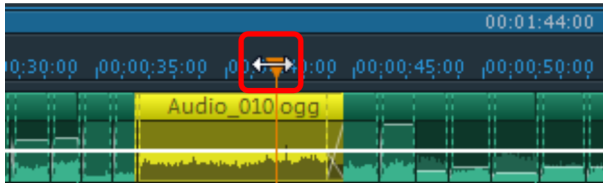
**Scrubbing (1 frame):** Scrubbing is active and samples are only 1 (video) frame in length. The speed is 25 fps, i.e. 1/25 second. This mode is suitable for positioning the playback marker exactly.

**Scrubbing (long):** Scrubbing is active, the sample length amounts to approx. 0.5 seconds. In this mode, locating specific events is particularly easy.

**Play 1x with scrubbing:** If this option is active, the current position will be played one time. If it is inactive, then it will be repeated.

## Using "Scrubbing"

If scrubbing mode is selected, set the playback marker to a certain location in the timeline using the mouse. Hold the mouse key and move the playback marker to various locations in the arrangement.



Scrubbing may be used also by employing the jog and shuttle wheel on the video monitor, as well as through various hardware controllers, which gives the software the feel of an analog video editing system!

## MAGIX Soundtrack Maker

MAGIX Soundtrack Maker automatically generates music tracks that correspond to the indicated mood. Even mood changes are possible.

You can open MAGIX Soundtrack Maker by going to "Edit" > "Assistants (view page 284)".

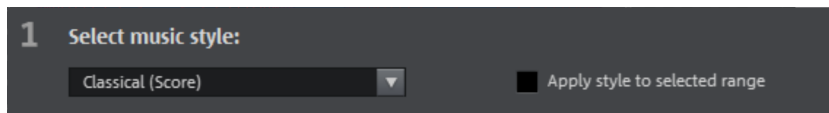
### Select music style

Choose a musical style first.

The option "Apply to selected range only" limits the length of the background music you want to create.

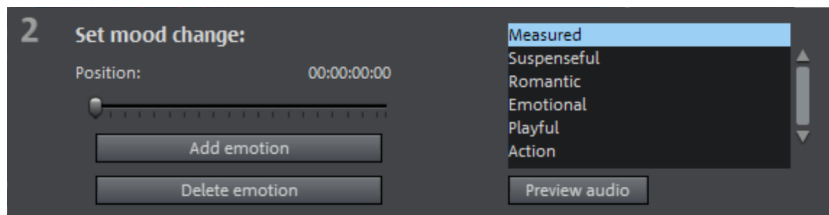
**Note:** The "Apply to selected range only" function will only work if an emotion has not been set outside of the selected area. Otherwise, the soundtrack will be used up to the point where the selected emotion is in place, so that there are no gaps in the soundtrack.

Range start and end may be set with the left and right mouse button if MAGIX Soundtrack Maker is open.



### Set mood change:

You can select a mood from the list.



**Preview audio:** Preview the selected mood here.

**Position:** Use the position slider to skip to a certain position in order to set the mood for a certain position. The start marker may be moved instead with the left mouse button. The preview will be displayed in the video monitor simultaneously.

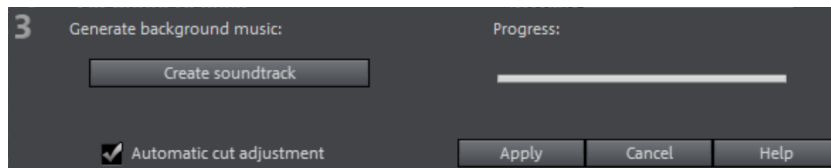
**Add emotion:** This button inserts the selected mood at the current position. MAGIX Soundtrack Maker will then suggest a new position for the next emotion by repositioning the position slider. Of course, you may also position this elsewhere to insert further moods.

**Delete emotion:** Removes the currently set.

## Generate background music

Clicking "Create soundtrack" creates a new soundtrack. "Progress" shows the current status.

**Note:** Soundtracks you create are beat-based. In most cases the length of the soundtrack will not match the marker positions, so that the track can play. These are frame-based and as such, can be set to a more precise grid than a beat-based soundtrack.



**Variations:** If the background music that has been created is not suitable, a variation may be created. This process may be repeated for the entire background music as well as for individual emotions:

- If you want to vary the entire background music, then click on "Create variations".
- If you only want this to apply to a certain emotion, then move to it with the position slider first in the dialog (or the play marker on the main screen). Then activate the option "Vary only selected emotions". Now click on "Create variation".

**Automatic cut adjustment:** This option re-arranges the video and photo objects in your project to match the music. Make sure to deactivate this option if you do not want this function.

## Mixdown of audio objects

If the project window becomes too full to manage, the system is out of RAM, or you just want to "summarize" your production, use the mix down function to convert the entire audio arrangement into a single audio file. Just click on the mix down button in the button bar or select the function from the "Processing" menu.

You can choose a name and a destination for storing the mix down object. The default directory is "My audio/video".

Storage of the audio arrangement will take up a little more space on your hard-drive, but it requires less RAM for playback than an unmixed entire arrangement.

**Note:** The mix down effect optimizes the volume automatically. Even if the mix down function is used various times, you will not lose audio quality.

## Stereo3D (Plus/Premium version)

**Warning for small children:** The eyesight of small children (especially those younger than six years old) is not fully developed. We recommend referring to a doctor or optometrist prior to allowing your child to view 3D-videos.

MAGIX Movie Edit Pro 2016 Plus and Premium also enables creation and editing of "genuine" 3D videos and photos. First, let's create an overview of this complex topic by familiarizing ourselves with the most important principles and the golden rules that are involved. Next, we'll look at the individual steps of the workflow in more detail.

**Note on using 3D content:** Some people experience unpleasant symptoms (e. g. headaches, overexertion, eye strain or nausea) when they are exposed to 3D video. We recommend taking regular breaks for this reason. In case of problems, the user should immediately stop use and refer to a doctor or optometrist. Incorrect production of 3D-content may also produce these symptoms.

### 3D basics

Human eyes perceive objects from 2 different angles and our brain "calculates" images from this information. This way we can tell the distance and position of an object. For this reason, 3D material should be shot according to this principle.

#### Viewing 3D

A regular screen or TV can show images only in 2 dimensions, and various technologies have been developed to enable perception of images in 3D. To this day, all technologies share the following: You need special glasses to deliver different information to the left and right eyes. We will examine these technologies in detail later.

#### The three golden rules

- **Stay within limits during recording:** To make a 3D recording (view page 206) with realistic depth information, certain limits must be respected. The most important rule is not to go below the point of minimum distance. Minimum point is the point in the picture, where the camera is the closest.
- **Frame closest point:** In order to place the 3D effect behind the imaginary frame, both image components must overlap each other exactly at the closest point. At the same time, the same objects must be visible at the edges of both partial images, for which, if needed, you can use the Cropping function in the Media Pool (view page 146).

**Note:** The imaginary window is a type of a plane, behind which the 3D movie plays. You select the closest, frontmost point. Not keeping up with this rule can result in the object to "jump out" of the imaginary window, which when used too much, can cause headaches.

- **Maintain realistic eye angles:** Object with a 3D depth effect viewed as a red/cyan image (Anaglyph) without glasses will appear displaced. This displacement should, if possible, take up less than 1/30 of the entire image. Otherwise, it will appear that the eyes are looking in different directions.

**Notice:** Displacement may only occur along the horizontal axis. Displacements on the vertical axis and rotated portions must be adjusted.

## Record 3D

The distance between eyes in humans is ca. 65 mm, which forms the so-called "stereo base width". But because our eyes are dynamic and we can even "cross" our eyes, it is possible to focus on objects that are closer.

Various techniques exist for 3D recording. Each method has its advantages and disadvantages:

- **3D cameras with two lenses:** The advantages are obvious; these cameras produce 3D material without excessive work involved. The disadvantage is that the stereo base width (lens distance) cannot be changed.
- **Two cameras on a special mount:** This involves a little more work. Two cameras are mounted on a special support to record material for the left and the right side of the 3D image simultaneously; microphone booms for stereo recordings may also be used for this purpose.  
The disadvantage in this case is that the shutter releases have to be pressed at exactly the same time if there are moving objects in the picture. In case of video, both movies must be synchronized before being edited.  
Advantages: Stereo base width may be changed by adjusting the distance between the cameras; larger selection of camera models.
- **Two photos via the same camera:** This technique only allows still images. The camera is simply used to record two images from different perspectives, and these are used as the right and left images. For best results, use a tripod.
- **Consistently fast camera movement, e. g. along a street:** Only a single conventional camera is required in this case, but the range of applications is very limited. This is the most cost-effective method for creating 3D videos. Material is filmed at a speed of circa 6-to 15 km/h. During editing, the edited video object is duplicated and one of the videos is played back with a time lapse. The movement direction determines which is the right and left image. 3D photos may also be created using this method.



## Warning, minimum distance!

The position of the object closest to the lens is designated as the minimum point. This minimum point may not exceed a specific minimum point; this is easy to calculate via the following formula:

**Note:** Lens focal point (e. g. 25 mm) x stereo base width (e. g. 65 mm) x 1.5\* /1 mm= minimum point (2437.5 mm ~ 2.44 m)  
 \*1.5 is a factor derived from the cut-off appearing when filming through a lens.  
 \*\*1 mm is the so-called "deviation" or "spatial dimension". This only involves a rough value in this case.

### Examples for 3D cameras:

Panasonic HDC-SDT750 ( base width 12 mm): minimum point is approx. 1.5 m.

Fuji REAL 3D W3 (base width 75 mm): minimum point at approx. 3 m; for long-distance recordings as much as 8 m.

This so-called minimum point has an important role in other aspects of 3D editing.

## Prepare 3D editing

3D videos are filmed and saved by different cameras, which means: depending on the camera model or recording method, the videos or images vary.

### In one file

Many cameras, especially for photo recordings, create one single file containing the left and the right image next to one another.

- Drag these files from the Media Pool directly into your arrangement.
- Select the created objects.
- Select the "Side-by-Side (left images left/right)" entry in the Media Pool under "Effects > Stereo3D > Properties > Create stereo".

### In multiple files

Some 3D cameras create a file for each the left and the right side. This working technique works also if you simply take 2 pictures with a regular photo camera.

- In the Media Pool, open the folder in which the desired file can be found.
- Sort the files in increasing order according to the date. This way, all files will lie in pairs one below the other.
- Now, select the files and drag them from the Media Pool directly into your arrangement.
- In the Media Pool select "Side-by-side (left image right/left) under "Effects > Stereo 3D > Properties > Create stereo" for material with halved width.

**Note:** If you have created side-by-side material yourself (e.g. placed two photos next to each other in an image file), proceed as described, but at the end select the "side-by-side (left image left/right)" for material with full width.

**Note:** To load MVC material into MAGIX Movie Edit Pro 2016, you must first activate this codec for a fee (view page 339).

# Set playback mode for 3D

There are various techniques available for playback of 3D videos on the computer. Depending on the technology used, the corresponding playback mode may be activated in MAGIX Movie Edit Pro 2016.



Select the 3D mode you want to work with in the upper left corner of the video monitor.

Here is a list of available techniques and the corresponding requirements:

3D mode	Equipment	Requirements
View partially interlaced	Polarizing filter	<ul style="list-style-type: none"><li>• Polarizing filter glasses</li><li>• Special monitor, typically referred to as a 3D monitor or similar</li></ul>

**Note:** You can choose between right or left image first, depending on which type of display produces better results on your monitor.

Shutter export	Shutter mode	<ul style="list-style-type: none"><li>• nVidia 3D Vision Kit</li><li>• 120 Hz monitor/projector</li></ul>
Side-by-Side-Display	Side-by-side	<ul style="list-style-type: none"><li>• 3D TV device</li></ul>

**Note:** You can choose between right or left image first, depending on which type of display produces better results on your monitor.

**Note:** These three modes should be set only when the preview image is to be exported to a separate monitor or TV device. Shutter mode also requires a 3D-capable graphics card.

## Anaglyph display

Color anaglyphs

- Red/cyan glasses

## Align videos and images for 3D

Anaglyph display is recommended for this and can be set in the video monitor (view page 208). Precise geometric alignment of images is only possible in this mode.

**Note:** If you want to edit 3D-video material, it is recommended to conduct scene recognition and split the video into individual scenes. This is necessary because the left and right side of each scene must be arranged individually.

The so-called minimum point is the point in the 3D picture that is closest to the lenses. This forms the "center" of the 3D image and must be defined as such in MAGIX Movie Edit Pro 2016.

To do this, go to the Media Pool and select the option "Effects" -> "Stereo 3D" > "Alignment".



Move both images one over the other so that the minimum point of both sides is at the same location on the screen.

You should first see whether automations for spatial adjustment and synchronization deliver the desired results. Click on the button "Automatic".

If you notice that the left and right images are on the wrong sides, click on the "Swap" button to reverse this.

If this does not produce the desired effect, proceed as follows:

- Find the minimum point in the image.
- If the images are offset vertically, they need to be balanced using the lower of the two slide controllers under "Spatial alignment".
- If the images have rotational differences, you have to adjust these with the knob.
- Try to position the minimum points of both sides precisely one above the other using the upper slider.
- To test the results, put on the cyan/red glasses. In case the image has an exaggerated spatial depth, try to position the left and right sides closer to each other using the controls under "Spatial alignment".
- Use perspective correction in case the left and right image haven't been recorded in quite the right perspective in relation to each other in order to be able to join them into a single clear 3D image. Enter values into the dialog or drag on window edges in the video monitor.

## Turn camera movements into 3D videos

Camera movements may be transformed into 3D videos by being duplicated and converted via time displacement. To do so, you can simply record on the right or the left side while, for example, driving along a street.

The speed should be set between 6-15 km/h (approx. 4-10 mph) and depends on the frame rate, the focal point, and the distance of the objects being filmed (among other things). At increased speeds, it may occur that the spatial impression is too strong and the filmed material seems unnatural and unpleasant.

- If the video is in the arrangement, the stereo depth for the 2D object may be set in the Media Pool via "Effects -> Stereo 3D --> Properties".
- Depending on the direction of the recordings, you will have to move the control either to the right or the left.
- Check the results in the anaglyph display with red/cyan glasses
- Correct any unrealistic effects by adjusting the controller in the opposite direction.
- If the spatial depth is exaggerated, reduce the changed parameters.

**Note:** Not only camera movements, but also other 2D materials may be arranged spatially.

3D material may be edited with the same functions as 2D material.

## Export and burn 3D videos

There are no special requirements for export and burning. Only the desired 3D technique is specified.

**Anaglyph:** This technique is recommended for uncomplicated playback of finished videos or playback with conventional TV sets or projectors. Viewers must simply put on a pair of red/cyan glasses to be able to enjoy a 3D movie.

**Side-by-side:** Create 3D movies for a 3D-capable playback device without having to compromise the quality. It doesn't matter initially whether your video is viewed in "Shutter" mode or in "Polarized filter".

- Depending on your playback device, you should set double resolution in order to produce full resolution for both the right and the left image.
- Not all playback devices are capable of double resolution. If this is the case for your device, 50 % pinched images will be displayed. The quality is nevertheless higher than output using the anaglyph technique.

**Note:** When exporting to side-by-side-formats, make sure that the vertical resolution is the sum of both images, but the aspect ratio (e. g. 16:9) is based on a cropped image.

**Only left/right side:** This settings exports only one side of your 3D video instead of the entire 3D video.

**Lenticular image:** This allows you to view 3D footage without 3D glasses. The footage is displayed interchangeably to give the impression that it is wiggling or shaking.

**Superimposed:** This export option is similar to „Side-by-Side“. The images are superimposed during output.

- Depending on your playback device, you should set double resolution in order to produce full resolution for both the upper and the lower image.
- Not all playback devices are capable of double resolution. If this is the case for your device, 50 % pinched images will be displayed. The quality is nevertheless higher than output using the anaglyph technique.

**Note:** When exporting to superimposed-formats, make sure that the vertical resolution is the sum of both images, but the aspect ratio (e. g. 16:9) is based on a cropped image.

## Export files/upload movies to the Internet

The standard path for all file exports is "File > Export" or "File > Internet". Depending on the export format and destination, the export dialog also allows the 3D technique to be used to be selected.

For direct selection as Windows Media Video 3D, click "Output" and select "3D movie" from the dialog.

## Burning

When burning a Blu-ray Disc or DVD, you must first open the encoder settings in the burn dialog and set the desired 3D technology. Next, you may proceed to burn the disc as usual.

## Special functions and wizards

In this chapter, we will introduce you to some of the especially useful special functions.

### Proxy editing (Plus/Premium version)

If performance deteriorates and playback becomes shaky due to hardware limitations, hi-res source material or very complex projects, it is recommended to use proxy files for editing. Lower resolution copies of the original file in a format that is better for playback are created and used for the editing process. The original files in a higher resolution are then used for the export process by default.

You can activate the "Create proxy files automatically" function directly in the start dialog or at a later time in "File" > "Settings" > "Movie..." > "General movie settings". By default this option is not selected.

When this option is activated, proxy files will automatically be created for all video files imported to the arranger or the project folder.

**Note:** Make sure there is sufficient memory available if proxy files are going to be created.

You can set the quality of the proxy files in the dialog "Configure proxy and preview rendering" > "Presets". Shortcut: Alt + R. The rendering process can be canceled by pressing the "ESC" key. Proxy files will not be created if the quality settings for them are higher than the quality of the source material.

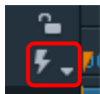
- It is not possible to create proxy files on an FAT file system (such as on an SD card) so the source material for proxy files should be saved on an NTFS drive (Windows standard).

**Tip:** You can activate or deactivate proxy files using the Quick function (view page 46) for a smoother playback. This is useful during proxy editing if you want to quickly check how an effect will look on the original material.

**Use proxy files during rendering:** If you want to burn your HD material to DVD, you can reduce the rendering time. Activate the settings "Best performance for DVD" in the dialog "Configure proxy and preview rendering" **before** the proxy files are created. This will ensure that the quality of the proxy files is sufficient for output on DVD. You should also activate the option "Use files created during rendering for export and burning" to use the proxy files during export.

## Preview rendering

With MAGIX Movie Edit Pro 2016 you can pre-render specific sections of your movie. This is especially useful if smooth playback is not possible due to the applied effects and transitions. The advantage versus the option "Combine audio and video" in the "Edit" menu is that all of the objects will be maintained in the arrangement. The rendered material will only be played in the background when the playback marker reaches the corresponding position.



Preview rendering is available in timeline mode and multicam mode.

**Note about multicam mode:** Only the source tracks will be rendered, not the target tracks.

### MAGIX Movie Edit Pro 2016 offers two options:

- It can automatically indicate all sections that can be rendered.
- Or, alternatively, you can indicate the section that should be pre-rendered manually.

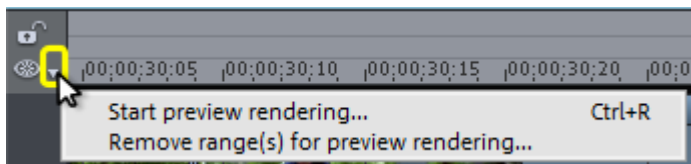
**Note:** The format that is used to render can be set via "File" > "Settings" > "Proxy and preview renderings" (view page 80).

## Automatic preview rendering

When using automatic preview rendering, you don't have to think about which sections could be affected. MAGIX Movie Edit Pro 2016 analyzes your computer's performance and determines which sections can be considered for preview rendering.

To perform automatic preview rendering, proceed as follows:

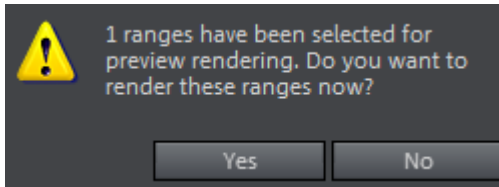
1. Click on the preview rendering button in front of the timeline.



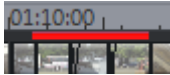
<MAGIX Movie Edit Pro 2016 will then analyze which sections should be pre-rendered.



A dialog will appear, indicating how many areas have been located:



These sections will be additionally marked in the MAGIX Movie Edit Pro 2016 timeline using red bars.



2. Select "Yes" in the dialog to start preview rendering.

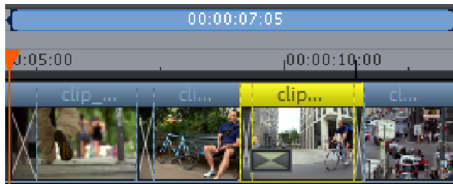
The red bars will appear green after preview rendering is over. If you make changes in the pre-rendered section, it will appear red again and will have to be updated (view page 216).

3. If you choose "No" instead, you can still conduct preview rendering later.

## Manual preview rendering

In manual preview rendering you first have to identify the section with potential problems.

1. Place an in and out point above the range to be rendered.



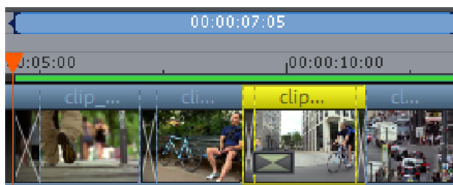
2. Finally, click on the "Preview rendering" button.

A preview rendering dialog will appear.

3. Selected "Section".

The preselected range will now be rendered.


After rendering, a green line appears in the timeline to symbolize that this range has been rendered.



The section will remain green as long as no further changes are made to it. The green line will then turn red and can be updated again.

## Update preview rendering

Preview rendering is effective only as long as no changes are made to the pre-rendered area. You can recognize a prerendered area from the green bars appearing above it on the timeline. As soon as an object in the section has been edited, the green bar will turn red. You can update this section at any time.

1. To do this, place the playback marker inside the section to be updated.
2. Click on the "Preview rendering" button: 
3. In the preview rendering dialog select "Section" in order to update just the section selected by the playback marker. If you select "All", all non-rendered (red) sections will be rendered.

## Use movie templates

Use movie templates in order to tell a whole story using just a few mouse clicks.

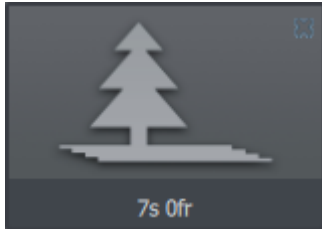
**Note:** This function is available only in the Plus/Premium version.

## Opening movie templates

All movie templates in the Media Pool can be found under **Import > Movie templates**. Select the movie template according to the desired length of the movie. Double clicking on a movie template opens it for filling.

## Insert your own material

### Manual filling



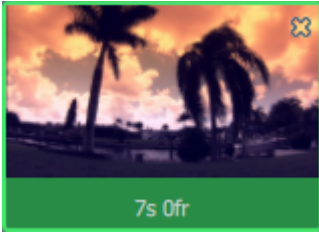
You can insert your content anywhere you see a media placeholder (see illustration).

The specified length will be displayed on the media placeholder. The length cannot be changed.

The placeholder icons indicate which type of material should be inserted here (e. g. group shot, landscape, close up).

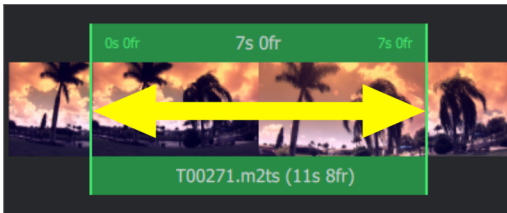
1. Drag the desired image or video from the Media Pool or the project temp folder in front of the placeholder to be replaced.

If your inserted video is too short, it will be rejected by MAGIX Movie Edit Pro 2016.



Images always have the length of the controlled media placeholder.

2. If the video is too long for the media placeholder, move the position of the video in the editing area.



## Automatic filling

To add content quickly, use automatic filling.

Select multiple media items in the Media Pool or in the project temp folder and drag them over the movie template. A field will appear where you collect your media. The movie template will now be automatically filled. The order of the media items in the template determines the date of the files; the sections are selected at random.

**Note:** Depending on the template, either the entire template will be filled with the video footage or individual placeholders will each be filled with a video from the selection.

If you do not like the compilation, click on "Reapply" and the program will select new video sections.

## Design title

- To customize the text, click on the corresponding placeholder and enter the desired text to the right of the editing area in the text field.

## Further use of movie templates

Burning (view page 241) and Exporting (view page 258) a filled template works just like with any other project. In the "Burn" screen you will find menu templates that are

specially adjusted to menu templates in the "Menu templates" (view page 243) categories.

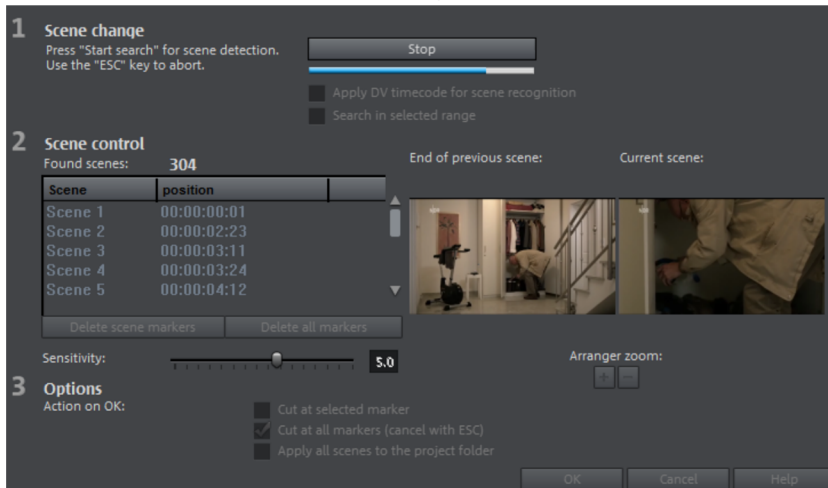
## Manually editing a movie template



Click this button if you want to customize the movie template in detail. The movie template will be transferred to the known edit screen and every object, every transition, every music title, etc. can be customized.

**Note:** You cannot return to the movie template wizard.

## Automatic scene recognition



Automatic scene recognition can be opened via the "Effects" menu. The scene recognition function analyzes the film for scene transitions and scans for drastic changes in the brightness and color distribution within the picture.

Automatically created timestamps from digital video devices (the points in time at which the device was turned on and off) are also marked as scenes.

- First, select "Start" from the "Scene change" box. The search for possible scene transitions will begin. If you have a large amount of material, then this may take a while, but the image analysis has to be done just once for each recording. The results are saved together with the video file.  
If the scene recognition is performed again with the same source material, then the scene transitions found are immediately displayed. If you are still not happy with the resulting scene partitioning simply repeat and correct where necessary.

- All found scene transitions in the list can be checked in the dialog. Every scene marker can be selected or deleted. Select a scene transition from the list of found scene transitions and use the preview images to check whether the found transition is really a scene change or not.

**Tip:** This option is helpful, for example, if a camera flash was captured in the source footage. The flash from the camera would cause a sudden brightness modification even though there was no actual scene change.

The preview always displays the end of the previous scene and the beginning of the new scene. If the images do not differ except for the brightness, then the scene may have been falsely recognized. In this case select **"Delete scene marker"**.

Via the zoom +/- buttons you can enlarge the part of the project window where the selected scene begins or previous scene ended.

You can use the **"Sensitivity"** controller to change the sensitivity of the scene recognition to detect different scene changes, depending on the settings.

**"Action on OK"** lets you specify whether the movie should be cut at the selected scene transition or at all scene transitions and whether the found scenes should be saved as takes.

## Travel route animation

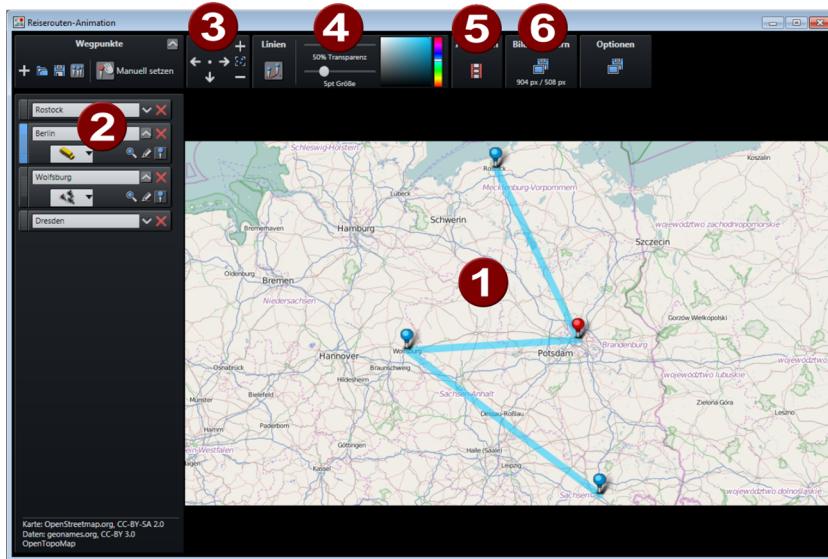
Using the travel route animation, you can quickly create maps with animated travel routes. You can start travel route animation with the "Edit" menu > Wizards > Travel route animation" or in the Media Pool > Import > MAGIX Tools > Travel route..."

If you have imported photos with GPS geotags into your movie, you can create a route that will appear as transitions between the photos.

- Position the photos from the start of the trip and the end of the trip directly beside each other and select the first photo.
- Start the travel route animation. The locations will automatically be entered on the map.
- Click on "Animation", save the route as a video and close the travel route animation feature. The travel route video will automatically be inserted between the photos including transitions.

If there are no photos with GPS information, the travel route animation will start without locations. Select the locations on the map yourself to export a travel route.

## Program interface of the travel route animation



- 1 Map:** Displays map material from openstreetmap.org.
- 2 Selected locations:** All locations, searched using geonames.org or selected manually on the map, will be shown on the list and marked using pins.
- 3 Map section + zoom:** The map may be moved by pressing the arrows. "Zoom" enables you to zoom into the current section (+) to view more details or to zoom out (-) for a better overview.
- 4 Show lines:** If at least 2 locations are marked on the map, then this function will be available for linking the locations. The line color and thickness may be changed.
- 5 Animation:** You can animate your travel route and save as video in WMV format.
- 6 Save as image:** The current map section may be saved as an image in the format PNG, BMP, JPG, or TIFF.

**Note:** This function is available only in the Plus/Premium version.

### Select locations on the map

There are several options for selecting locations on the map for creating a travel route.

**Note:** The map section will adjust itself depending on how many locations you select and where they are. If you would like to view details about a location, simply zoom via "+" on the number block or mouse wheel into the detail view.

### Search and select locations:



1. Click on the "+" button below "Edit destinations" to add an entry. This new entry will appear blue below existing locations.

2. Assign the new location a name and press enter. The destination will be added to the map. An additional marker is set for the start and end of a route.

**Note:** If there multiple locations could be possibly indicated, a list with possible choices will open. You can determine the destination by picking one from the list with your mouse.



If important intermediate stages of the route should also have a marker, click on the marker symbol in properties (arrow down) of the destination.

### Set destinations manually:

1. Move the map boundary by clicking on the map and holding down the mouse key so as to make the desired destination visible.



2. Click on this button under "Edit destinations" to activate manual entering of locations, or use the keyboard shortcut "M".

3. Click the target destination on the map. The new entry to the list will be created.

### Search destination anew:



If the destination is incorrect, you can search the location again in order to adjust the position of the marker.

Enter a new name in the entry field and click on the magnifying glass or press enter.

### Rename destinations:



You can rename a destination without changing it by going to its properties (arrow down).

### Object follows route:



Various objects can follow the route from destination to destination.

### Import GPX file:



If you have created a route with a GPS device and saved it as a GPX file, you can import it and show the route on the map.

**Note:** Depending on the length of the route, it can take some time for the file to be imported and displayed.

### Adjust & delete keyframe

#### Change the sequence of destinations:

The order of destinations in the list corresponds to the sequence in which they were created. You can edit the order of the destinations by clicking on a location on the list and dragging it to a new place with the mouse key held down. The route on the map will be adjusted. You can see this especially well if you've activated the line (view page 224) in order to optimize the travel route display.

#### Adjust the position of the destination:

You can adjust the position of a destination by grabbing the marker on the map with your mouse and dragging it with the depressed mouse key to a new position on the map. The marker will be moved, the travel route adjusted and the new name of the destination will be automatically changed in the list.



**Note:** If the destination marker doesn't appear, you can activate it in the properties (arrow down) by clicking on the marker symbol.



Hide destination:"



Click under properties (arrow down) of a destination on the eye symbol. The destination will remain in the list, but will be hidden on the map and will not appear in the route. Click on the eye again to display the location again.

Remove destination from the list:



To delete a destination from the list and the route, click on this button next to the destination.

Save and load routes

The entire list of marked locations may be saved to load it later - without having to search for and select all of the locations again.

### Save as file:



- Click on this button under "Edit destinations" or use the keyboard shortcut "Ctrl + S".
- Enter the save location and name of the location list in the dialog that appears.
- Click "Save" to back up the list and quit the dialog.

### Open list:



- To load a saved location list, click this button under "Edit destinations" or use the keyboard shortcut "Ctrl + O".
- Navigate to the save location and select the location list in the dialog that appears.
- Clicking on "Open" closes the dialog and opens the list with saved destinations.

Adjust map section



Use this button to move the map section upwards (north), to the right (east), downwards (south), or to the left (west).

The arrow keys on the keyboard may also be used to move.

Click on the point between the arrows to move the map window in order to center the selected destination.



Use this controller to zoom out of the map (-) or into it (+). The keys "+" and "-" on the keyboard or the mouse wheel may also be used to zoom in and out.



If you would like to show all marked locations and reveal as much of the map as possible, click this button and the map will be adjusted automatically.



If you would like to display only the route without the location markers, click here and the pins will be hidden. A repeat click will display them again.

## Show lines (connect locations)

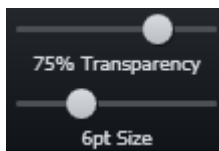
For two or more marked locations, the function "Show lines" will appear. This function connects destinations on a map with a line in order to better visualize the route.



Click this symbol to show lines connecting selected locations. The functions responsible for line transparency, thickness, and color are to the right.

**Tip:** The order of destinations in the list corresponds to the sequence in which they were created. You can edit the order of the destinations by clicking on a location on the list and dragging it to a new place with the mouse key held down. The route on the map will be adjusted and the line will follow a different course.

**Hide line:** To hide the line, click on the "Lines" button again.



**Transparency and line thickness:** Use the controller to change the transparency (left controller) and the thickness of the lines (right controller).

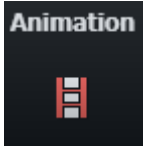


**Line color:** Set the desired line color using the color field and slider.

**Tip:** You can also create animations for the connecting line in the "Animation" (view page 224) section and save it as a video.

## Animation

For two or more marked locations, the function "Animation" will appear.



This enables you to display your travel route in motion and even save it as a WMV format movie, e. g. to integrate it into vacation movies or to send it.

**Scroll map:** Activate "Scroll map" and the map will move from location to location when the animation is played back.

**Animate line:** The connecting line slowly connects all selected locations, from the first to the last. It moves at exactly the same speed as an animated object.

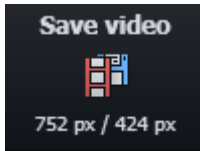
**Soft animation:** The animation starts slower, speeds up, and then slows down before each location.

**Animate object:** You can select an object to follow the route, such as an auto or an airplane. This function is used when no particular object has been selected in the "All destinations list".

**Duration (seconds):** You can adjust the duration of the animation however you like, depending on the length of the route. Enter the duration of the animation in seconds.



**Preview:** Before you save an animation as a video, test it to see if it looks the way you want.



Click on this button to save the animation as a video. Enter the save location and name of the video in the dialog that appears.

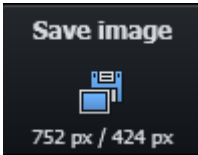
**Note:** This button indicates the height and width of the future image. These values are adjusted as soon as window sizes are adjusted or when the location list is shown (arrow next to "Destinations").

**Close:** Click this to leave the animation area.

## Create a picture of a map

You can create a picture from a section of a map (including location markings), e.g. to print it.

**Step 1:** Zoom into the map until you have reached the desired level of detail.



**Step 2:** Click this button (shortcut "Ctrl + E") and enter the save location and the name of the image in the dialog that appears. You may also select the format for the picture.

**Note:** This button indicates the height and width of the future image. These values are adjusted as soon as window sizes are adjusted or when the location list is shown (arrow next to "Destinations").

**Step 3:** With one click on "Save", the image is saved and the dialog is closed.



If you want to, you can hide the list of locations to the left to show a larger section of the map.  
Another click on this symbol will show the list again.

Options

**Benchmark:** The map legend appears/disappears and also appears on the image or in the video.

**Mouse position:** The GPS coordinates for the current mouse position appear in the lower right-hand corner on the map when this option is activated. Use this option together with the "Set destinations manually" function to set destinations precisely.

**Distance:**Calculates the total length of the route.

**Map:** Specify which maps you want to use. Use the "Shift + M" shortcut to change maps when the focus is on the map.

**Hide:** Click this to leave the options.

Shortcuts

Manually mark locations	M
Zoom into map	"+" on the number block
Zoom out of map	"-" on the number block
Save location list	Ctrl + S
Load location list	Ctrl + O
Save map section (with location markings) as image	Ctrl + E

Move map section north (upwards)	Up arrow
Move map section east (right)	Right arrow
Move map section south (downwards)	Down Arrow
Move map section west (left)	Left arrow
Cancel video export	Esc
Change map	Shift + M

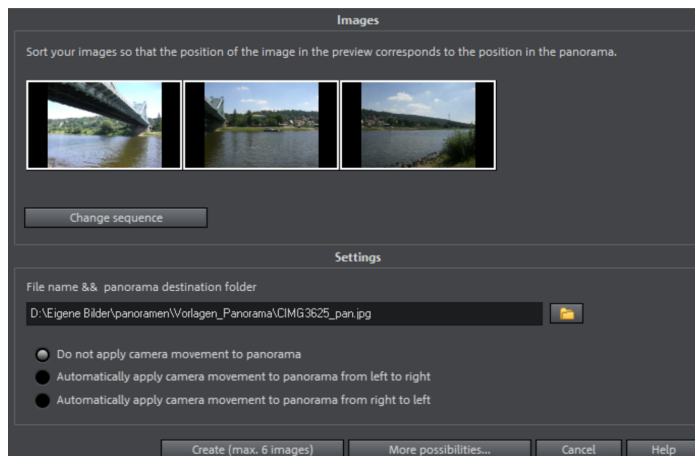
## Produce panorama pictures

This special function may be selected for highlighted photos under "Effects > Video object effects > Create panorama". Using it, you can combine several photos into a wide panorama photo. You don't need to create exclusively "proper" panoramas; Let your imagination run wild and put together anything you want to.

**Tip:** Optimize you photos beforehand, so that the transitions are not to be seen in the finished panorama.

## Select pictures for panorama

Load all necessary images into the film project as usual. The images that should make up the panorama should be selected one after the other while holding down the "Shift" key. Select the entry "Create panorama" from the context menu "Effects" (view page 289) > "Video object effects".



## Invert image sequence for panorama image

Sometimes photos are accidentally loaded in the wrong sequence. To sort the photos properly, click on the "Invert sequence" button.

## Calculating the panorama image

If you click "Create", the panorama image will be processed. Depending on the resolution and number of original images included, this may take some time. The original photos are replaced in your slideshow with the panorama image you've created, but the original files on the hard drive will remain intact.

**Hint:** You can create a panorama image from a maximum of six images. Click on "More options" for more information on the upgrade.

## Finished panorama (2 images)

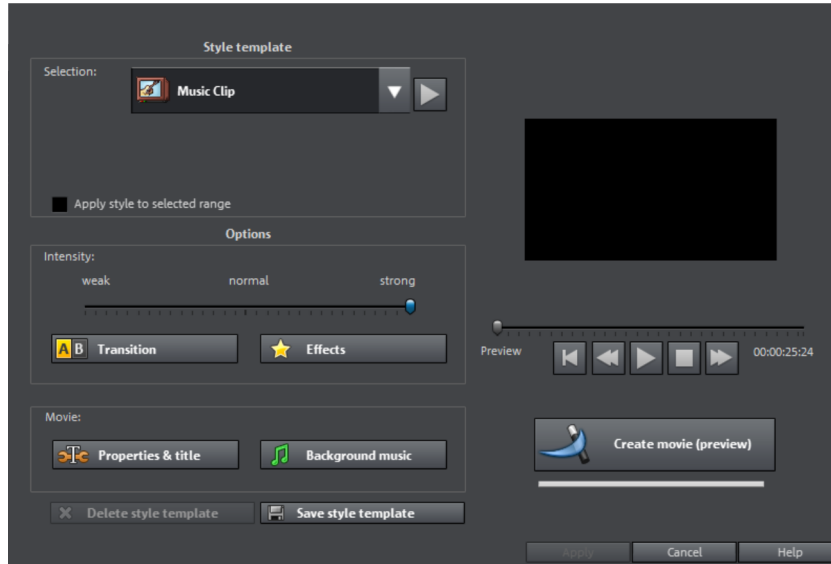


Finished panorama from 2 images

## Slideshow Maker

Slideshow Maker is ideal for converting still images into moving pictures, adding background music, and effects.

- Open Slideshow Maker via "Edit -> Wizards".



### Style templates

Select a template that best matches your needs.



This button plays a sample slideshow with the selected style template.

### Save/delete style template



Homemade style templates appear in the list of included style templates.



If you like, these can be deleted again.

### Intensity

Controls the portion of video and image objects that feature effects. With "Normal" you will see a balanced amount, whereas with "Weak" or "Strong", correspondingly fewer or more effects.

## Transitions

Transitions can be individually activated or deactivated using this button.

The slider in the transitions dialog can be used to adjust the amount of each type of transition.

**Transition duration:** Set the length of the transitions in seconds.

**3D transitions use Stereo 3D mode:** If this option is activated, 3D transitions use Stereo 3D mode.

**Random transitions:** The transitions are set to random values.

The "play" button below the preview monitor plays a preview.

## Effects

Various effects can be individually activated or deactivated using this button.

The slider in the dialog controls the amount of each effect type.

**Random effects:** The faders that control the amount of effects are set randomly.

Treat special image formats intelligently

**Treat special image formats intelligently:** Panoramas and portrait photos can be treated "intelligently". If this option is activated, then panoramas and portraits will be treated with special effects adjusted to the format. These effects can also be selected and unselected in the detail view.

If this option is not selected, then these images will use the same effects as all other images.

You can turn effects and transitions belonging to each category on or off using the list symbol. The arrow below the preview monitor plays a preview.

## Properties & titles



Film length

**Resulting film length:** This is an estimation of how long the film will be after applying Slideshow Maker.



**Available music:** This is the complete length of the music that is currently selected. Background music (view page 232) enables detailed settings for the pieces of music to be used.

**Adjust film length to the music:** An attempt is made to adjust the length of photo objects to the background music. If the film is too short the music will be cut off. If the film is too long, the music will repeat.

**Adjust music length to the film:** Photo objects have a set length, and the resulting film is filled with music. The music at the end of the movie is simply faded out.

## Including video objects

**Process videos:** If this option is set, then videos will be automatically processed with effects and transitions.

**Length:** Settings may be made here about whether the original length of the video should be maintained or if it should be shortened.

## Opening and closing credits

Set the text for opening and closing credits here.

**Text:** Enter the corresponding text for opening and closing credits that should be added by Slideshow Maker.

**File:** A title template, a video, or an image file may also be used.

**Note:** Titles created using Slideshow Maker may also be edited (view page 130) at any time.

## Group associated images together

If this option is active, an attempt is made to detect associated events via their date information and to separate them from each other optically. Detection of individual events is based on the time span of these events to achieve a sensible separation.

**Begin group with black fade:** A black fade is added between the different events.

**Begin group with title and black fade:** A black fade is added between the different events. A title is also faded in with a suitable duration, e.g. 1st/2nd/3rd day, provided the events take place over multiple days.

**Begin group with title and picture:** A black fade is added between the different events. A title is also faded in with a suitable duration after the black fade, e.g. 1st/2nd/3rd day, provided the events take place over multiple days.

## Background music



Specify if and which music should be used for the background here.

**Use background music:** Adds background music.

**Load file(s):** A file selection dialog will open to choose a folder featuring music; select one or multiple files.

**Remove:** The selected pieces of music are removed from the list and will not be used.

**Insert random:** MAGIX Movie Edit Pro 2016 selects random pieces of music from the folder "Import -> My Media -> Slideshow music" in the Media Pool.

**Preview:** This button previews the selected piece of music.

**Volume ratio:** This slider controls the volume ratio between the original sound and the background music.

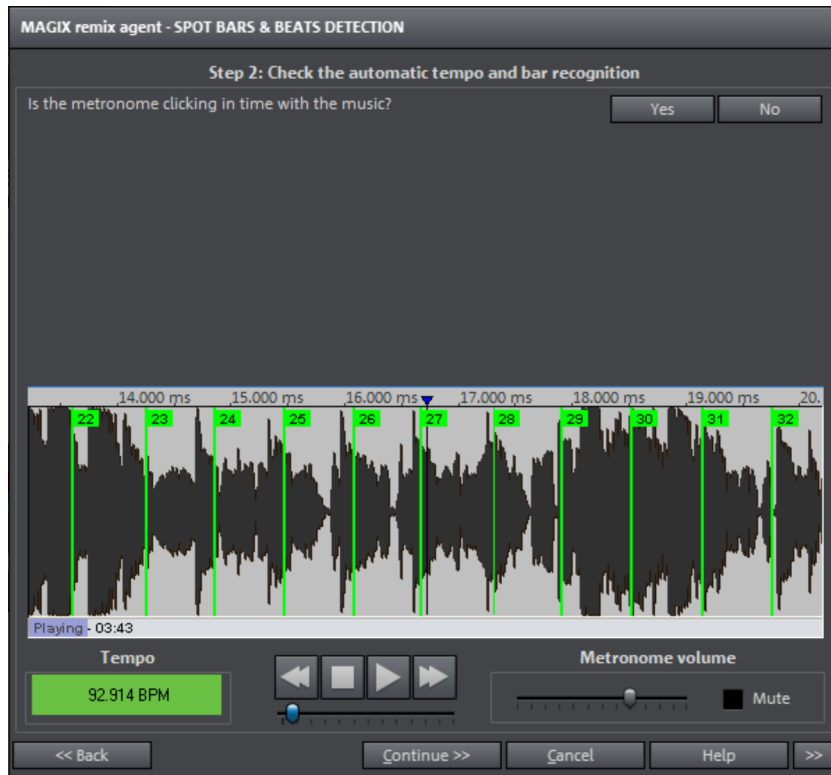
**Tip:** Music objects, located on the 5th track will be listed and used together with audio objects for background music.

## BPM Wizard

Hidden behind the "BPM Wizard..." option in the audio object context menu is the option to analyze the tempo and bars of audio objects. This is particularly useful e. g. if you want to synchronize an image sequence to music.

**Note:** This function is available only in the Plus/Premium version.

- To do this, load a suitable song in MAGIX Movie Edit Pro 2016 and in the context menu select "BPM Wizard". The "MAGIX Remix Agent" dialog will open. This tool can analyze the song's rhythm.



Follow the instructions from the assistant to work out the tempo of the selected piece of music.

In the last step there are three different ways to use the information supplied:

- "Create Remix Objects" splits up your audio object into individual objects which are each one bar long.
- "Adapt tempo" adjusts the tempo of the analyzed object to that of the arrangement tempo and vice-versa.
- "Save tempo & bar info" only saves the information itself. This option is particularly important for musical cut adjustment, described below.

**Note:** In the menu under "Edit > Musical Cut Adjustment" you can make MAGIX Movie Edit Pro 2016 automatically organize all video objects in the first track according to the tempo of the analyzed audio object.

**Note:** This function is available only in the Plus/Premium version.

## Preparation - Setting the start marker and object end

Before opening the Auto Remix Assistant, you should set the start marker at the position in the song object in the project window where you want detection to start. If the song contains a long intro without beats, set the start marker after the intro. As a rule of thumb, the Auto Remix Assistant should always be "fed" dance music.

- The start marker should be set before a quarter note beat or, better still, briefly before a beat at the start of a bar.
- If the start marker lies before the song object, the object is examined from the beginning.
- If detection is not performed by the end of the song, the object can be shortened accordingly with the object handle at the end of the object.

## Checking the automatic tempo recognition

A song must have the following properties in order to be analyzed:

- It must be longer than 15 seconds.
- It must contain "rhythmic" (danceable) music.
- It must be in stereo.

The analysis takes place in four steps:

**Step 1:** Checking the start marker

**Step 2:** Tempo recognition

**Step 3:** Specifying beat starts

**Step 4:** Application of BPM and beat recognition

### Step 1: Checking the start marker

Before you start the analysis you should set the start marker at the position where the rhythmic music begins. This means that if the song has a long ambient intro, the start marker should be set after the intro. If the wizard can't detect any rhythm it will ask if the start marker has been set after the intro. If not, you can move it to a better position in the dialog.

If the beginning of the song does not have a definite rhythm, you will be asked if you want to move the start marker.

## Step 2: Checking the automatic tempo recognition

The Remix Agent will analyze the audio material and try to determine the tempo. The object is played back while a metronome click can be heard and numbered green beat lines appear in the waveform.

Under the waveform on the left side the established tempo is displayed in BPM. There is a small transport console in the middle to make navigating easier. The slider serves as a position controller. To set the metronome volume, an additional fader and mute button are provided on the right-hand side.

The automatic tempo recognition doesn't always work right away. If you don't hear the metronome clicking in time with the music, click the "No" button in the upper section of the dialog in order to access the manual tempo input dialog.

To correct the metronome speed and any timeshift that may occur between the metronome clicks you can use the tempo correction as well as the "Tap tempo" button:

**Tempo correction:** The Remix Agent offers various speed settings. The most probable tempo detected by the Remix Agent is preset. If this tempo isn't correct, you can choose another one from the list. The next time you play back the song it should be in sync with the metronome.

**On/Off beat correction:** Now it may happen that the tempo is right, but the beats have been displaced. "On/off beat correction" provides a number of alternatives for moving the beats according to the complexity of the rhythm. Try out various alternatives until the metronome clicks are in sync with the beat.

**Tap tempo:** Alternatively, click rhythmically on the "Tap tempo" button or press the "T" key. Additional blue lines are displayed in the wave display. After at least four taps, the Remix Agent attempts to select the correct tempo from the list in "Tempo correction". The display next to the "Tap tempo" button displays the current status. Keep tapping until the red display showing "Unlocked" changes to the green "Locked" setting.

Use the "O" key to manually set the quarter beats while the music plays. Surrounding markers will automatically be removed to ensure that the set tempo remains intact.

You can move the markers with the mouse. If you hold down the "Ctrl" key simultaneously, the subsequent markers are also moved.

If the metronome clicks now correspond with the music, you can continue to the next step.

### Step 3: Determining the start of a bar:

Next you can set the time signature. The default setting is 4/4 but you can adjust this if necessary. The beat at the start of the bar should coincide with the high sound of the metronome, or the red line in the waveform display.

It can now be corrected in one step: If the start of the bar can be heard, click on **"Tap One"** once using the mouse or press the **"T" key** on the keyboard.

Alternatively, select how many quarter notes the "One" is to be moved back.

Use the **"O" key** to manually tap the position of the beginnings of the bars during playback. This allows you to correct the beginnings of the bars in longer sections.

Continue to the last step if the starts of the bars are now correct.

### Step 4: Apply

The final step is to apply the musical information to the audio material.

The images on track 1 will be repositioned according to this information.

## Batch conversion

Batch conversion makes it is possible to convert multiple video files, movies, objects, or whole projects into another format in just one step.

### Open batch conversion

Batch conversion can be opened using different presets. A pre-selection appears only if you have loaded a film or a project.

The following scenarios exist:

- Batch conversion has been opened from the context menu in the Media Pool (view page 25, view page 47): The file selected in the Media Pool beforehand will be transferred to the task list and can be converted to the available formats. In case of projects which contain multiple movies, all movies will appear as individual tasks.
- Only one empty movie is open: A dialog opens additionally for batch conversion, in which video files that have to be converted to other formats can be selected and loaded.
- A movie with video material and more than one object in the first track is opened. A dialog opens, in which you can select which tasks should be created for batch conversion.

- **All scenes in the movie:** All objects present in the 1st track will be used as starting points for the video files to be exported. An application for this could be that all scene beginnings of a movie should be exported as bitmap files or a backup for a movie is to be created as individual scenes.
- **Multiple movies:** The opened movie will be exported as a whole video. Additional movies can be added to the list in the dialog.
- Multiple movies with video material are open: The opened movie will be exported as a complete video. This is especially useful for large projects with a lot of individual movies, eliminating the need to export each one individually.

## Administration

Save and load your settings here. These include the list of files to be exported and the export settings and names of all entries.

**Caution!** Batch conversion references the projects, movies, and the objects contained therein directly. Keep in mind that when converting entire movies, the source material must also be available. During conversion of individual objects from movies, you have to make sure that the movie file has not been changed between loading and saving.

## Queued entries for batch conversion

This is the list of all objects that have to be converted into the indicated format. Each task can have its own export settings.

**Add files (not during conversion of individual objects from movies):** Manually add files, including video files and projects.

**Remove selected:** The marked tasks will be removed from the list.

**Duplicate selected:** If you would like to export tasks in multiple formats, you can simply mark and duplicate them and assign individual export settings to them.

## Format settings for the selected conversion process

These are settings for the currently selected tasks, and multiple tasks can be given a setting simultaneously. Select one or more tasks from the task list.

**Note on format setting for multiple tasks:** If one of the marked tasks already has an individual setting, its will be lost after another format is selected. To prevent this, remove the selection for each task using Ctrl + mouse-click.

Set the target format in the flip menu. Windows Media Video format (\*.wmv) is the default.

**Advanced settings:** This opens the dialog for the advanced format settings. This corresponds to the dialog for normal video export of a movie.

**Tip:** If you give several tasks the same file name, the files created will be documented intelligently. For example, you can easily convert and simultaneously line up multiple movies that belong together thematically.

## Shut down PC automatically after successful export

This option is especially useful when you export long movies and are using an especially high-quality and resource-demanding export format. You can leave the computer to work on the individual tasks and after finishing them it will turn itself off.

## Start batch conversion

Click on "Start conversion" to start the process. After ending conversion processes, a list of all export processes with a message informing of its success will appear.

**Hint:** During batch conversion, messages that appear during normal file import will be for the most part suppressed. This is to enable the smoothest conversion of all tasks. Therefore, please make sure that all files to be converted or the project can be easily loaded before starting a batch conversion.

## Backup copy

Files must be saved to be able to be easily retrieved in case of a hard drive crash or some other error.

## Copy movie/project and media to folder

This menu option allows you to put a complete MAGIX Movie Edit Pro 2016 arrangement, including all applied multimedia files, into one folder. This is especially useful if you want to archive an arrangement for later use or in case the files are on multiple data carriers (CDs, DVDs, etc) so that on loading you continually have to change them. Effects files used are also saved in a folder together with the other files.

If the option "**Copy disc project, movies, and media in folder**" is activated, all movies in the current disc project, including all of the related media, are combined and copied into the selected folder.



**Note:** MAGIX Movie Edit Pro 2016 also features DV logging. Large DV-AVI and audio files no longer need to be backed up, since MAGIX Movie Edit Pro 2016 saves the position of this material on the DV tape and imports missing files automatically when reloading the DV tape.

A dialog opens to specify the path and name of the video.

Shortcut:

Copy movie and media into folder	"Shift + R"
Copy project and media into folder	"Alt + S"

## Burn movie and media to CD/DVD / Burn project and media

Use this option to burn the film as well as all associated files to disc. To do so, you must have a burner installed on your computer and a blank CD must be inserted.

If you choose the option "Burn project and media", the current project and all of the associated media files are grouped together and burned onto disc.

Even larger projects can be burned straight to disc. The project, if necessary, will be split up and burned automatically to multiple discs. A restore program which is burned to the first disc of this type of backup guarantees that the backup can be restored without any problems.

## Restore project from video disc

This command restores a project backup that has been saved on a disc. The disc must have been burned with the option "**Add project backup**" (see "Burn disc" dialog options).

Choose which of the movies contained on the disc should be restored by selecting it from the list and highlighting and selecting the corresponding directory. You must also indicate the directory where the project should be saved. A subfolder "Backupxxx" will be created in this folder where all project files from the disc will be saved. All of the restored movies will be loaded into MAGIX Movie Edit Pro 2016 for editing.

Select the option "**Restore image files only**" and only the original image files contained on the disc will be restored.

## Load backup project...

This option loads an automatically created slideshow backup. This type of automatic backup gets the file extension MV\_ (underscore). This command is only intended for use in emergencies, for example, if you unintentionally saved your change and wish to return to the previous version of the movie.

Keyboard shortcut: Ctrl + Shift + O

**Tip:** Under "File -> Settings -> Program...", you can determine how often an automatic backup will be created in the "System" tab under "Automatic backup".

## Clean-up wizard

The clean-up wizard helps delete projects from the hard drive, including all of the media files used. Use this function to free up disk space for future projects.

**Caution:** If the files you used in the movie have also been used in other movies (like trailers, opening music, etc.), then you should make backup copies of these files beforehand.

Keyboard shortcut: Ctrl + Shift + Y

## Delete specific files

Choose this option if you would like to select certain files for deletion. In the file selection dialog, you can select the desired files. In the next step, the clean-up wizard searches for other files which belong to your selection. Using this method, you can delete an entire movie with all of its accompanying media, help, project, and backup files. Before they are deleted, you will receive relevant information in a dialog and a confirmation request.

## Search and delete superfluous files

Choose this option if you would like to find unnecessary files or free up some space on your hard drive. The clean-up wizard automatically looks for extraneous files created during use of MAGIX Movie Edit Pro 2016. Before they are deleted, you receive relevant information in a dialog and a confirmation request.

## Advanced

"Advanced" lets you set which files and folders should be included in the cleaning process.

## Burning

The "Burn" screen enables you to create a selection menu to burn the entire project including all movies and the selection menu to disc later on.



Switch to the "Burn" screen first by pressing the button displayed.

## Preview and editing

MAGIX Movie Edit Pro 2016 provides two different modes for designing and previewing the disc menu.



"Preview" mode simulates the behavior of a playback device, e.g. DVD player or Blu-ray player. You can select a template for the menu and burn the disc.



In "Editing" mode, you may adjust many features of the disc menu. Templates are also available here that may be flexibly adjusted to suit your needs.

## Remote control

The virtual remote control is an important helper when it comes to checking how the disc will perform later.

When the disc featuring the project is inserted into the player, this remote control will control the preview picture just like a "real" remote control controls the picture on a monitor or TV. The menu navigation may be activated via the arrow keys or the "OK" button. Activated buttons are highlighted.



The **number keys** select the corresponding entry on the menu page. All menu entries are marked with a corresponding number. Within a chapter menu, playback is started from the particular scene. In the movie menu, the corresponding chapter menu (if available) is changed or movie playback is started.

**Navigation button:** Use these buttons to navigate in the menu of the disc being burned. The individual entries may be changed and confirmed by pressing "OK". The remote control reacts exactly like a genuine DVD/Blu-ray player's remote control.

**Skip/move forward/back:** This allows you to skip to the next or previous scene while playing back your movie. In the menu, you can skip forward or back from one menu page to another.

**Play:** Starts the first entry in the menu. In case chapter menus are available (view page 245), the chapter menu will be displayed first. Press the play button again to start playback at the beginning of the first scene of the first chapter.

**Stop:** Pressing stop halts playback.

**Disc:** Switches to the first page of the film menu.

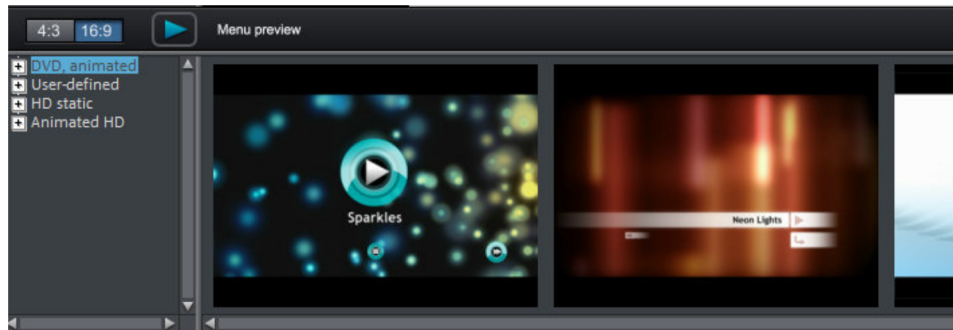
**Sub:** Switches to the chapter menu (if available) for the currently selected film.

## Menu

The selection menu is also burned to disc and appears when inserted into your player. Just like with a store-bought DVD or Blu-ray Disc, you may easily select your movies with the help of preview pictures, or access particular chapters within a movie.

# Templates

You will find the menu templates below.



To the left, you will see a tree structure for selecting various menu templates. At the top, you should first select whether you would like to use templates in ratio "16:9" or "4:3".

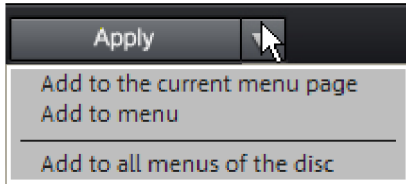
- **Animated (DVD):** These templates contain background and introductory videos as well as music. The control elements are displayed in various modes. The templates can be used only for mini DVDs, DVDs and AVCHD discs.
- **Static (4:3 only, DVD):** Here you will find templates made up of regular background pictures and control elements.
- **Custom:** These templates adjust to your disc project; the movies and scenes you use are integrated directly into the menu.
- **HD static (16:9 only, DVD, Blu-ray, AVCHD, WMV HD):** These templates contain super-sharp, high-res background images that are particularly noticeable on HD TV devices.
- **Movie templates (only 16:9):** Here you will find menu templates that are specially made for movie templates (view page 216) found in the Media Pool.

**Note:** These menus require "Film menu" and "Chapter menu" to be activated in the "Edit" screen under "Disc options".

If you've selected one of the menu templates, you can use the horizontal scroll bar to view all the others available. There are lots of options when using the templates:

- To apply a template to all menu pages, double-click the desired template. The complete template will then be applied.
- You can also combine various elements from different templates with each other. To do so, you must first switch into Editing mode. If, for example, you wish to combine the text format of a template with the background of another one, double-click on the template containing the background first. Then click on the "Font" tab and select a template for the font.

- You can load the layout (or individual layout elements) for the current menu (movie or scenes) as well as for all menus.



**Note:** Some menu templates include intro videos with a smooth transition to the menu page!

## Edit disc menu



To edit individual menu elements and the menu structure, activate the "Edit" button.

## Edit menu elements

Hold down the left mouse button and drag text boxes or graphical elements to the desired position. You can adjust the size by dragging out the corners and edges of the frame.



**Undo:** This command allows you to undo the last changes made.



**Redo:** This function undoes the previous "Undo" function.



**Lock aspect ratio:** To avoid distortion, use this button to lock the aspect ratio for the menu elements.



**Group:** Menu elements are moved or resized simultaneously as a group, including the description text and number.



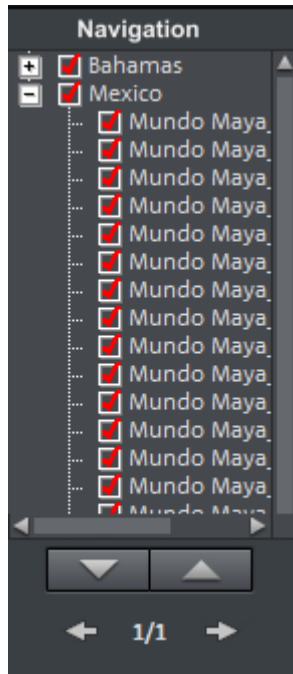
**Fade in TV display area in the preview monitor:** This option displays the image borders of the television (view page 170) as lines in the preview monitor.



**Grid:** This button shows a grid to help position frames exactly next to each other as required. Using the small arrow next to the button you can open a dialog to fine tune the grid settings.

## Navigation

Using navigation links above you can reach the structure of the menu entries.



- All movies are listed as first entries. The corresponding menu level is the **film menu**.
- All scenes are listed as second entries next to it to the right. The corresponding menu level is the **chapter menu**.

Removing the red check deactivates the corresponding entry in the chapter menu. The scenes are still displayed of course, but you can no longer select them directly from the menu.

- You can open the movie menu for further editing by clicking on the movie above it.
- If you click on one of the chapters, the chapter menu in the preview will be opened for editing.

## Disc options

Here you can activate or deactivate certain elements or even complete menus.

**Intro video:** Press this button to load videos to be used as introductions to your discs. The following formats are supported: "\*.avi", "\*.mpg", "\*.mxv", "\*.vob". The intro is played immediately after the DVD has been inserted into the player. The DVD menu will then appear. A check mark "Do not skip" ensures that the intro video must be played completely each time the disc is inserted and that it may not be skipped with the remote control or otherwise.

### Film menu & chapter menu

The disc menu essentially consists of two layers:

**Film menu:** The upper layer includes the film menu, which is only used if a project contains multiple movies.

**Chapter menu:** This is the lower layer of the disc menu, which utilizes the chapter markers in a movie as menu entries. More information about this is available in Chapter markers (view page 121).

**Note:** A chapter menu cannot contain more than 99 entries. If your movie should have more chapters, either burn it without a chapter menu or split your movie into multiple parts.

**Preview pictures:** Shows/hides the preview pictures in the disc menu.

**Numbering:** The numbers beside the menu entries may be selected directly using the remote control, but they might be unwanted at times. Use this option to show/hide them.

**Frame:** A frame borders the preview pictures. If this is unwanted, it may be removed easily using this option.

## Create your own menu background

You can edit the existing menu background or create a new one from scratch.



A click on this button switches to the "Edit" interface and loads the selected menu background as video.

Here you can change and design the background as you please. The background movie will be set as the menu background automatically after pressing "Save".

**Tip:** If you would like to design a new menu background, simply delete all existing objects from the menu project and load new ones.

## Designing a page

New menu pages may also be added or irrelevant pages may be removed.



Adds a new menu page.



Removes the selected menu page.

**Background:** Here you have three options for creating a static background image for the menu:

- You can set a certain color value for the background.
- You can select an image saved on your hard drive



- You can select a frame from your project.

## Animated selection menus

Audio-visual animations may also be added to the DVD menus. As required, background videos are played as endless loops while the menu is shown on the screen. Add background music in various formats or use any background picture for each menu.

**Sound/music:** Load an audio file into the preview monitor and use it as an animation in the menu background.

**Video:** Load a video or graphics file into the preview monitor and use it as an animation in the menu background. In addition to the options for the background graphic (see above), you may also use a sequence from a loaded slideshow or from a different video file.

### Background video options:

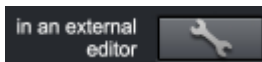
- **Create animated menu buttons:** The preview images for individual movies in the movie menu are shown as small movie samples. Set the start point and length of the animation using the sequence options faders.
- **Use video's audio track:** The audio track of the background video is used with the menu.
- **Play menu animation as a loop:** The background video (audio and/or video) is played back as a loop.
- **Length of the menu view is set by:** Audio/video or whichever medium is longer. You can specify how long the background video should be here. The other medium will be played as a loop.

## Create a button design

MAGIX Movie Edit Pro 2016 enables easy editing of all buttons together with their menu entries.



You can edit menu entries that you created using this button or with a double click on the menu. The dialog with the properties of the menu entries (view page 249) will open.



**Edit in MAGIX Photo Designer:** You can open MAGIX Photo Designer for additional editing of elected menu elements.



**Apply to all objects:** Applies the properties of the selected button to all remaining buttons.

New entries may also be added or irrelevant entries may be removed, together with all corresponding buttons.



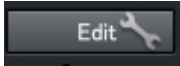
Adds a new menu entry with button.



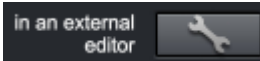
Removes the selected menu entry with button.

**Tip:** You can deactivate unused menu items in Navigation (view page 245).

**Note:** The chapter menu is formed via chapter markers (view page 121) and can be influenced in detail with these.

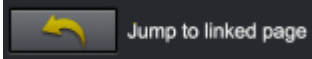


Pressing this button or double-clicking the menu entries allows menu entries you have created to be edited. The dialog with the properties of the menu entries (view page 249) will open.



These buttons open MAGIX Photo Designer for further editing of your background pictures or the selected menu elements.

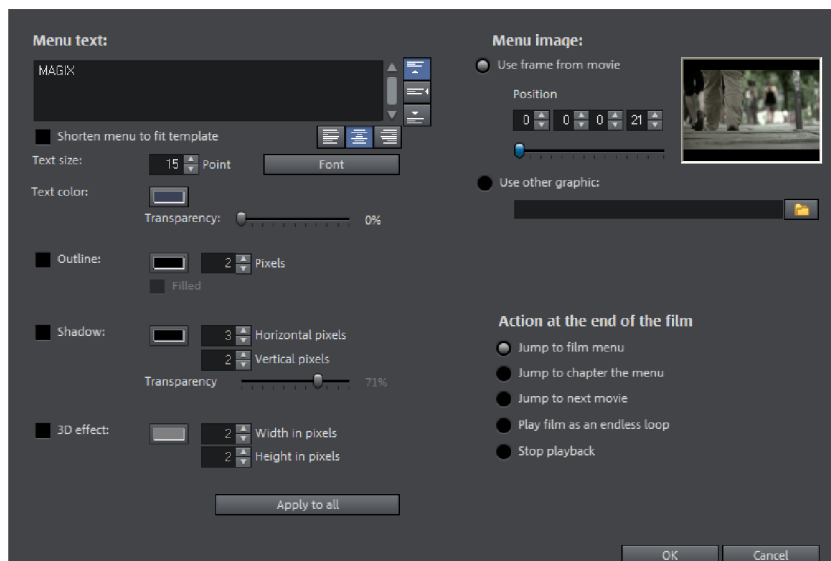
### Jump to linked page



To test the targets of menu entries, select the desired menu entry and click the button.

## Menu entry/menu page properties

Double clicking the preview picture or a menu entry opens an editor for you to adjust the preview picture or menu entry.



### Menu text

In the text input field, you can enter any text to match the chosen menu entry.



Set the vertical direction of the text (upwards, centered or downward).



Set the horizontal direction of the text (left, centered or right).

**Font size:** Set the height of the text in pixels.

**Font color:** Define the foreground color of the text.

**Font:** Set which font and which style (bold, italic, etc.) should be used.

**Shadow:** Set the color and size of the shadow that will appear underneath the text.

**3D effect:** If you would like to make your text appear three-dimensional, you can set the width, height, and color of the 3D effect.

**Apply to all:** Except for the text, all settings are applied to all entries in the current menu.

## Menu image

**Use frame from movie:** Use the fader to set which frame should be used in the video as a preview picture. The numerical input fields are sorted as follows:

Hours:Minutes:Seconds:Frames.

**Use different graphic:** You can also load your own bitmap images to be used as menu pictures.

**Hint:** It may be the case that there are no menu pictures in some menu templates, so changing the menu picture won't have any noticeable effect.

## Actions at the end of the movie (preview images in film menu only)

Enter which action should be carried out once the film has finished playing here. Select from:

- **Stop playback:** This option depends on the DVD player being used. Most DVD players show the DVD player's own menu (or background picture) after playback.
- **Jump to movie menu/chapter menu:** Jumps back to the previously displayed menu.

**Tip:** If one of these two options is not available, please check which menu mode is set.

- **Jump to next movie:** The next movie will be played without any additional action.
- **Play movie as endless loop:** Any movie may be burned onto a disc as a loop. This means that the movie will be played as a endless loop until the next menu entry is accessed using the remote control or playback is stopped. This way, you can transform your TV into an aquarium, a train journey, a fireplace or anything that you could watch over and over again.

**Note:** This option only functions for DVDs, Mini DVDs, or Blu-ray Discs.

## Edit your own menu entries

**Note:** This function is available only in the Plus/Premium version.

There is another view in this dialog to edit menu entries you have created. Menu links can be edited here. This makes it possible to link a menu entry with a certain action, menu page, or a certain position in the movie.

**No link:** The menu element cannot be selected and has no function other than to display menu text.

**Link to page in current menu:** Jumps to a menu page in the current movie or chapter menu in the current film.

**Link to another menu:** Opens another movie or chapter menu.

**Link to chapter in a movie:** If this option is selected, enter a film and chapter marker where playback should start.

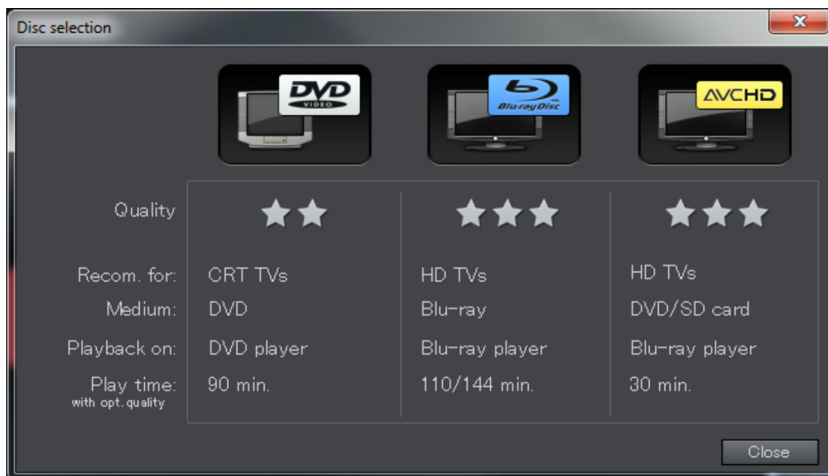
**Note:** For DVDs, only chapters within the current movie may be jumped to.

**Link to film start:** The movie will play back from the start.

## Burning wizard



Click "Burn" to open the dialog for creating DVDs, Blu-ray discs, AVCHD and other video media including a menu.



Select what kind of disc you would like to create.

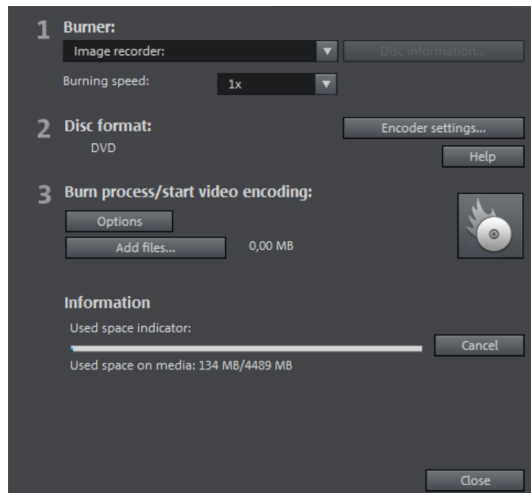
Proceed as follows to burn a disc:

- **Set up burner and burn speed:** If multiple burners are installed, you may select which device you wish to use in this menu.
- **Encoder settings:** Use the "Encoder" button to access the selection dialog to specify settings for the MPEG encoder (memory requirements, quality, and duration of the MPEG conversion). "Advanced settings" accesses a dialog featuring additional options. You can adjust all the fine settings for the MPEG encoder here.
- **Burning disc/starting video encoding:** The button "Burn disc" starts the disc burning process. Every time you burn and every time a simulation is carried out, the disc project is encoded. Please note that the MPEG file is not deleted from the hard disk after the burn process has finished. Depending on the length of the

project, encoding and burning may take some time. The time required can be seen in the dialog.

## The burn dialog

Here you can select your burner, the type of disc, the encoder settings. MPEG-2 is used for DVDs. Blu-ray discs also use MPEG-2, and higher bitrates are employed in order to reach the higher HD resolutions. AVCHD discs use a much more complex MPEG-4/H.264 codec, which is documented in detail in the "MPEG-4 encoder settings (view page 356, view page 344) section of the PDF manual and in Help (F1 key).



### Options

**Simulate first:** If you are not sure about the write speed or memory requirements of the selected disc, you can simulate the write process before burning.

**Activate buffer underrun protection:** Many burners support techniques that prevent the much-feared "buffer underrun". Use this option to activate this protective feature and burn your files at higher speeds without risking making a coaster out of your blank disc.

**Completely format DVD/CD-RW media:** This option reformats the RW media and deletes all existing file material.

**Shut down computer after burning:** Activate this option to automatically turn off the computer after encoding and burning has been completed. You could, for instance, start the encoding and burning process in the evening, and you don't have to wait for the process to finish to switch off your computer.

**Burn standard video DVD onto same disc:** You can use this option with a WMV HD disc to burn an additional normal DVD video. This ensures that your discs can also be played back on standalone DVD players. See Multi disc.

**Activate the burner's defect management option:** If a certain section of the disc is defective, then this will be recognized by the burner and labeled as such. No content will be saved there as a result.

**Check data after burning disc:** The finished disc will be checked for any mistakes after burning.

**CD/DVD title:** This is the title of the DVD as it will appear on the PC. The disc project name is displayed here by default.

## Encoder settings

Use the "Encoder settings..." button to access the selection dialog to specify the properties of the MPEG encoder (memory requirements, quality, and duration of the MPEG conversion)

**Preset:** Here you will find useful presets for the selected disc type. Here are some of the presets for a DVD:

<b>Longplay DVD Video</b>	DVD with extra-long playing time. The bit rate is reduced, which compromises image quality.
<b>Longplay music DVD</b>	DVD with extra-long playing time for music. The bit rate for the soundtrack remains at the highest quality level.
<b>Standard DVD</b>	Normal DVD
<b>Widescreen DVD</b>	Normal DVD in 16:9 format

**Note:** For all settings, you can choose between NTSC (USA and Japan) (Europe).

**Bitrate:** Bitrate determines the size on the disk that the finished video will take up. The greater the bit rate, the larger the file, and the shorter the maximum playing time of the movie that fits on a disc.

**Adjust bit rate:** The expected file size of the finished video is estimated, depending on the set bit rate. If the movie does not fit onto the disc, the bit rate is corrected accordingly.

**Quality:** Specifies the quality of the encoding process. The higher the quality, the better the finished video will look; however, encoding will take considerably longer.



**Smart Rendering:** With Smart Rendering you can significantly reduce the encoding effort for MPEG files. During the production of MPEG files, only those parts of the movie that were changed in the program are re-encoded. Please note: The MPEG files contained in the movie **must** have the same format, i.e. the bit rates (variable or constant), audio formats, image resolutions and video formats must match.

**Anti-interlace filter:** Activate this option only for playback on a TV screen, where it reduces horizontal flickering around fine details.

**Calculate video effects on GPU:** To accelerate exporting, you can let video effects be calculated on the graphics card. At this time this applies to brightness, gamma, contrast, color, saturation, image size, cropping and position effects as well as various fades and mixes. Please note that external effect plugins and elaborate artistic effects must be processed on the CPU and for this reason using this function will not yield any speed advantage.

**Note:** This function is specifically optimized for NVIDIA graphics cards. You can, however, experience acceleration with other types of graphics cards, too.

**3D mode:** If you have 3D material in your project which has been edited with Stereo3D, you can select here in which mode it should be burned to disc here. 3D is switched off by default.

To return to the standard settings, press the **Reset** button.

Via "**Advanced**" you can reach the "Advanced settings" dialog. Here you can make changes to all MPEG encoder settings. Read the \ "MPEG-1/2 encoder-settings" appendix (view page 350) and "MPEG-4 encoder settings" (view page 356, view page 344) in the PDF manual or program help.

## Apply hardware acceleration for rendering

MAGIX Movie Edit Pro 2016 supports hardware acceleration for AVCHD exports as well as AVCHD and Blu-ray discs. This can noticeably speed up the encoding process.

The hardware acceleration that is applied depends on the encoder being used and the hardware built into the system.

- **Quick Sync Video:** Intel processors starting with „Sandy Bridge“ when using a standard MPEG-4 encoder (view page 356, view page 344) or a Main Concept MPEG-4 encoder (view page 356, view page 344).
- **CUDA:** NVidia graphic cards when using a Main Concept-MPEG-4 encoder (view page 356, view page 344).
- **OpenCL:** AMD graphic cards when using a Main Concept MPEG-4 encoders (view page 356, view page 344).

**Note:** Ask your graphics card manufacturer whether your graphics card supports hardware acceleration. Make sure that all the necessary drivers are installed.

If your system does support hardware acceleration, you can activate it in the "Encoder Settings" dialog under "Advanced..." > "Hardware acceleration".

## Memory

Disc type	Data storage medium	Menu	Quality	Length (optimal quality)
DVD	DVD	Yes	***	98 min.
Blu-ray Disc (view page 336)	Blu-ray Disc	Yes	*****	110 min.
AVCHD (view page 336)	DVD/Blu-ray Disc	Yes	*****	30 min./DVD 160 min./Blu-ray Disc

\* The display time for some DVD players can be determined in this menu. The amount of image material that can be put onto a CD or DVD depends on the sizes of the picture files.

It is difficult to acquire reliable information regarding required memory, especially with the MPEG-2 encoder. If the "Variable bit rate" of the MPEG-2 encoder is activated, encoding will occur according to the movements in the picture. The required memory depends on the film material; an action film would need more memory than a drama, for instance.

In the MAGIX Movie Edit Pro 2016 burn dialog there is a display of remaining capacity, which estimates directly how much space remains on the selected disc type with current settings. As soon as you change Encoder settings (view page 254), the capacity display will be updated.

**Tip:** The capacity display is only an estimate. For this reason, always make sure that you never completely fill the disc space. Instead, leave a buffer in case the files end up being larger than the provided estimate.

If you cannot save your disc project on a single blank CD, you will have to divide it up into various parts.

**Note:** Further information on MPEG compression and formats can be found in the chapter PDF manual in the chapter "Video and data formats" (view page 333).

## Separate project onto multiple discs

**Automatically:** If the disc project requires more memory than is available on the disc, a dialog will appear before burning asking whether the disc project should be automatically segmented for multiple discs. Confirm this by clicking "Yes". The disc project will then be automatically divided into individual disc projects and burned sequentially onto multiple discs. This is the easiest method as everything is automatic and all you have to do is insert a new blank CD when required.

### Manual

**Case 1:** If several movies do not fit on a single disc:

In this case, switch back to the "Edit" interface and delete as many movies as necessary until the remaining movies fit onto the disc. You can create a new disc project and load and burn the other movies afterwards.

**Case 2:** If a long movie doesn't fit on a disc...

In this case, the movie has to be split into two or more parts that will be burned separately onto disc.

- Switch back to the "Edit" view and place the playback marker to the position where you want to divide the movie. In the "Edit" menu, select "Cut -> Separate movie".
- All passages behind the playback marker will be removed from the overly long movie and made into a separate movie. Both movies can be controlled in the movie tab in the Project window. Save both of them separately to your hard disk ("File > Manage movies > Export movie file" menu option, for example, as "Part 1" and "Part 2").
- Remove one of the two movies (for example, "Part 2") from the disc project ("File" > "Manage movies" -> "Remove from project (view page 266)" menu option).
- Switch to the "Burn" interface and burn the first film ("Part 1") to CD or DVD.
- Create a new disc project ("New" button), switch to the "Edit" view and load it into the second film ("Part 2").
- Switch to the "Burn" interface and burn the second movie to ("Part 2") CD or DVD.

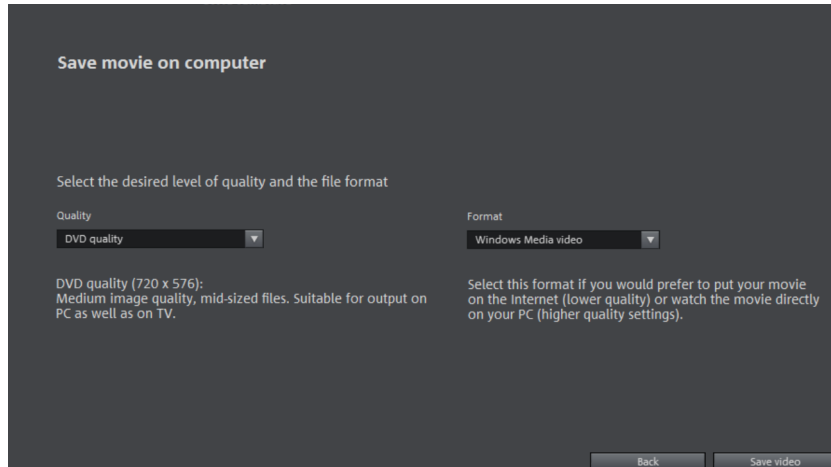
# Export



The "Export" button opens the export wizard, which features the most important export options for your videos. Please note that you will only export the current movie. Other movies in the project and the disc menu will not be included.

## Output as video file

With this option you can recalculate a movie including all objects, effects settings, transitions, text, etc. into a video file and save it to a computer.



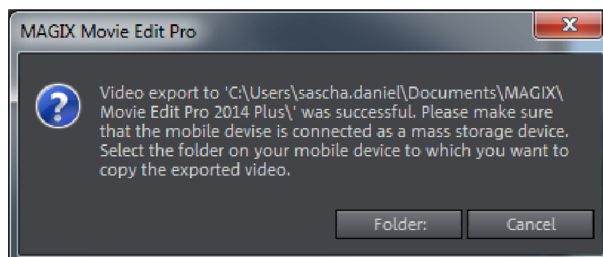
Select a certain quality (e.g. DVD quality) and a file format (e.g. MPEG -4). The dialog provides further information about the properties of your selection. Please note that MAGIX Movie Edit Pro 2016 also adjusts the quality when you change file format, if this wasn't optimally selected for your chosen format.

## Export to device

You can also transfer your project to mobile devices.

- Click on "Export to mobile device" in the export dialog. Then select the mobile device from the list.
- Click on "Save video".

MAGIX Movie Edit Pro 2016 now creates a video file. You can keep track of the progress in a dialog. A dialog will open as soon as the export is completed.



- Provided that your mobile device is connected to your computer, click on "Folder".
- Select your mobile device and a sub-folder if applicable in the dialog and click on "OK".

Your video will now be transferred to the mobile device.

**Note:** Normally your device will be correctly recognized as "Mass storage device" by your computer. If necessary, change the connection detection settings of the device before connecting to your computer, so that you can select the correct connection type (e.g. "Mass storage drive"). For more details on these consult your device manual.

## Output as media player

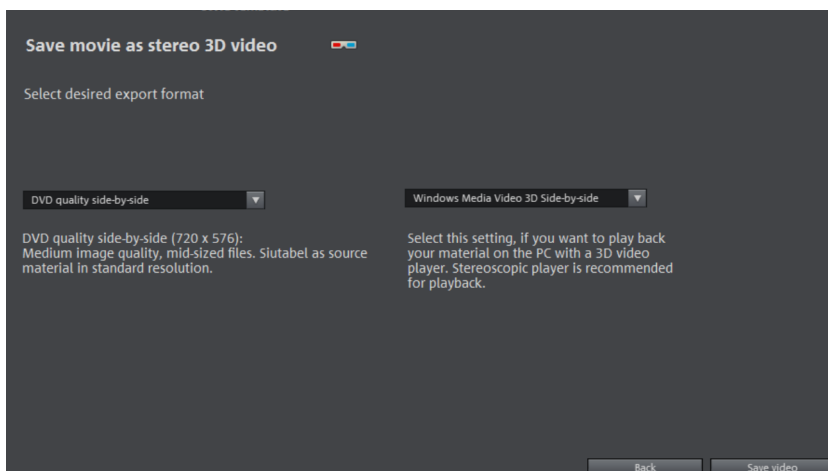
You can export your movie as an HTML-enabled media player if you want to play it in an Internet browser or embed it on a web page.

- Select the desired quality.
- Click on "Save video".

In target folder, an HTML and an MP4 file will be created for further use.

## Export 3D movie

With this option you can recalculate a movie including all objects, effects settings, transitions, text, etc. into a 3D video file and save it to a computer.



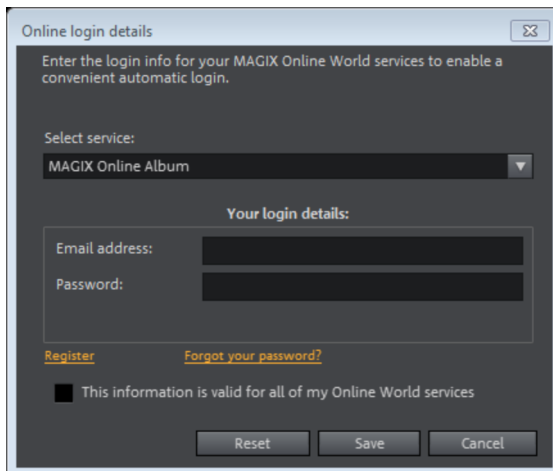
- First, select a quality in the dialog. It only makes sense to use HD quality if you have high resolution material in your project.
- Next, choose a 3D mode. Anaglyph videos are suitable for viewing on a standard television or monitor and can be viewed with red-cyan glasses. Side-by-Side videos deliver a considerably better 3D experience, it does however, require special monitors, TV sets and playback devices.
- Next, click "Save video".

**Note:** You will always export Windows Media Video 3D files using this dialog. You can use other file formats via "File -> Export movie".

See the "Stereo 3D" chapter (view page 205) for more information on 3D video.

## Upload to (MAGIX Online Album)

This accesses the MAGIX Online Album login dialog directly. Present your photos in custom-designed online albums featuring music and videos.



**Note:** If you don't have MAGIX Online Album, you can register with this service at "Registration".

After login, you can determine the desired quality and the file location in a new or existing album, and then start the transfer. After this you will be able to find your material in your Online Album.

## Upload to Internet

With this option you can upload your movie directly to YouTube, Vimeo or Facebook. YouTube maybe the best-known portal for self-made clips of all kinds. Vimeo is an up-and-coming portal for more demanding videos.

Community: YouTube ▼

Title: 2010-07-22

Description:

Keywords:

Category: Film & Animation ▼

Send:


☒ Private: Just you and the persons selected by you

☐ Public: Share your Video with the whole world (recommended)

Please do not upload any copyright-protecteded, pornographic or discriminating videos to the community. Make sure that you do not violate any of the applicable Terms of Use!

[Terms of Use](#)

Export settings: Middle (SD) ▼

 Standard (2D) ▼

OK Cancel

**Community:** Select a platform: YouTube or Video.

**Name:** Here you can enter the name of your movie.

**Description:** Here you can create a short description of your movie to orient other community member as to its contents.

**Category:** Select the category for your movie here.

**Send:** Here you can select whether the film should be private, accessible only to you and authorized persons, or public, meaning freely accessible.

**Export settings:** Here you can set various quality settings.



## Upload to showfy

This brings you directly to the showfy login dialog. With showfy you can present your photos together with videos and music in your own personal streams.

To upload content, simply proceed as follows:

**Note:** If you do not already have a showfy account, you can use your MAGIX login details to register at [www.showfy.com](http://www.showfy.com) <http://www.showfy.com>.

1. Select "Upload to showfy".
2. Enter your showfy login details.
3. If you want to save your showfy login details, activate the option "Save login details for automatic login".  
MAGIX Movie Edit Pro 2016 will save your username and password so you don't have to enter them again when you want to upload media to your showfy account.
4. Click "OK" to confirm the entry.  
MAGIX Movie Edit Pro 2016 will log in and the export dialog will open.
5. Specify whether you are uploading to a new or existing Stream.
6. Set the quality level.
7. Click "OK" to start the transfer.  
MAGIX Movie Edit Pro 2016 will now create a video file and upload it to the showfy account.

# Menus

Certain menu items are not available on the "Record" and "Burn" screens. The menu reference describes the full menu as found on the "Edit" screen.

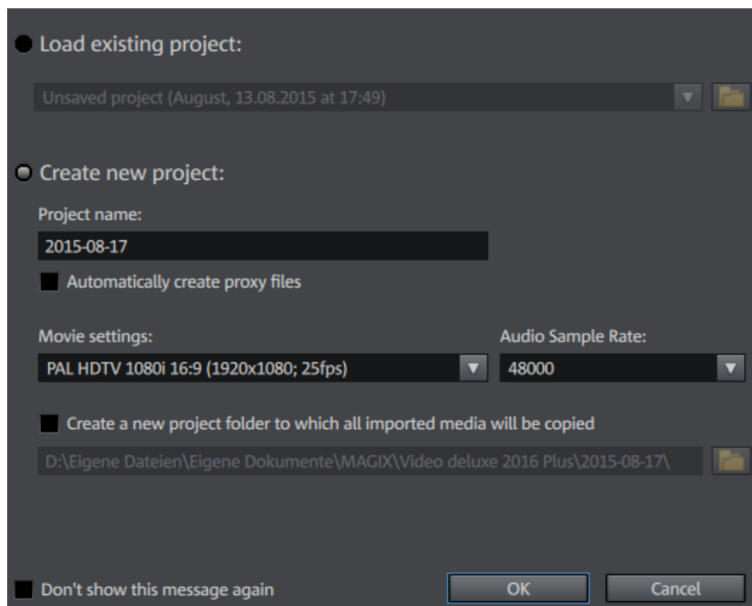
## File Menu

### New project



A new MAGIX Movie Edit Pro 2016 project is created. The Start dialog opens in this case

A start dialog will open when the program is launched or a new project is loaded. Here you can make important presets for the project. You can change these settings at any time by going to "File" > "Settings".



**Create new project:** Here you can assign a name to your new project.

**Options:** This button lets you open and close the options area of the start dialog.

**Watch the intro video:** Here you can launch the introductory video with information about workflows in MAGIX Movie Edit Pro 2016.

**Project file:** Here you can set the path for the project directory where all project files should be saved.

**Movie settings:** Here you can set the movie's target format (display norm, resolution, frame rate). This setting has no effect on the internal processing quality and can be changed at any time by going to "File > Settings > Movie" (view page 69).

**Audio sample rate:** Here you can set the audio track's audio sample rate.

**Load existing project:** Here you can select and load a previously saved project.

**Use movie template:** Here you can choose an included movie template for a new project. Read the "Using movie templates" (view page 216) section for more details.

Shortcut: Ctrl + N

## Open



With this option you can load a project or a media file. Please note that all media files associated with it must be loaded along with a project.

MAGIX Movie Edit Pro 2016 will search for all used sounds and video files in the folders in which they were located when the movie was saved.

Keyboard shortcut: Ctrl + O

## Save project



The current disc project is saved with the name displayed in the project window. If you have not specified a name for your project yet, a dialog will open for you to do so.

Shortcut: Ctrl + S

## Save project as...

A dialog opens where you can specify the path and name of the video for saving.

Keyboard shortcut: Shift + S

## Manage movies

### New movie

Use this option to create a new movie for your recordings and imported files. Since a film is normally already opened, you will have to decide whether the movie should be inserted into the existing project or if a new project should be created.

Keyboard shortcut: Ctrl + Alt + N

### Delete movie

This option lets you remove the current movie from the project. However, it is still available on the hard drive and can be loaded again at any time.

Keyboard shortcut: Ctrl + F4

### Attach movie

Using this function you can attach a movie to an opened one. This is then attached to the end of the movie and automatically takes on the original movie's settings.

### Rename movie

You can enter a new name for your movie here.

### Import

Use this option to load a movie into your disc project. Please note that all media files associated with it must be accessible. MAGIX Movie Edit Pro 2016 will search for all used sounds and video files in the folders in which they were located when the movie was saved.



You can use the tabs to switch from one movie to another.

### Export movie file

A dialog will open to enter a file name for the movie to be exported. The movie may then be imported into other projects again.

**Note:** The movie file (\*.mvd) includes all information about the media files used, cuts, effects, and titles, but not about the image and sound material itself. This is always contained in the recorded or imported media files, which remains unchanged

during editing with MAGIX Movie Edit Pro 2016. In order to save a movie in its own folder, e.g. for use on another PC, use the function "Copy film and media to folder".

Keyboard shortcut: Ctrl + Alt + L

## Export movie

A movie may be exported in different video formats via "File -> Export movie". The options available vary according to the selected format.

**Presets:** These are typical settings for the selected format for the most important applications.



Click "**Save**" to save your own settings and "**Delete**" to remove them from the list.

**Export settings:** Specify general export parameters like resolution, aspect ratio, and frame rate here. Select the most frequently used values from the list fields; to set your own values click on the "..." button. The "**Advanced**" button opens the specific settings for the selected video format. "**File**" enables you to export your file to another folder than the preset (More information can be found in the section "Folder" on page 74) one. The option "**Overwrite file without confirmation**" option allows you to execute multiple exports in the same file.

**Other:** "Other" also provides the option to switch off your computer automatically after long encoding processes and to limit export to the selected area (between the in and out point).

### Other

- Export selected range only
- Apply anti-interlace filter (suppresses flickering)
- Shut down PC after successful export
- Calculate video effects on GPU

**Output after export:** Some formats allow special playback options (e.g. DV-AVI on the camera or WMV export with output via Bluetooth to your mobile phone).

**Note:** Burning a disc takes place on the "Burn (view page 67)" screen. Read more on this in the chapter "Burning a disc".

## Video as AVI

When exporting to AVI video, you may set and configure the size and frame rate of the AVI video and the compression codec for audio (audio compression) and video. Please see the general information about AVI video formats (view page 333) as well.

Keyboard shortcut:                      Ctrl + Alt + A

## Video as DV-AVI

This option exports the video as a DV encoded AVI. You will be asked for which video standard you want to export DV data. PAL (Europe) or NTSC (USA/Japan). The arrangement can be easily transferred to the Digicam via the FireWire interface.

The window will provide further information on all available options. You can access it via the button "**Advanced...**" in the "Export" dialog.

Keyboard shortcut:                      Ctrl + Alt + D

## Video as MPEG video

MPEG stands for "Motion Picture Experts Group" and is a high-performance compression format for audio and video files.

Details on the settings of the MPEG encoder can be found in the "MPEG encoder settings" appendix.

Keyboard shortcut:                      Ctrl + Alt + P

## MAGIX video export

Exports the movie in MAGIX video format. This format is used for video recording by MAGIX video software and is optimized for digitally edited high-quality video material.

Keyboard shortcut:                      Ctrl + Alt + M

## Video as Quicktime Movie

Exports the movie in QuickTime movie format. This enables streaming playback of audio and video files over the Internet.

As with RealMedia export, appropriate adjustments can also be made for video site, frame rate, and codec settings. However, the export dialog does not permit you to add commentary to the video.

For QuickTime files (\*.mov) you have to install the QuickTime library.

Keyboard shortcut:           Ctrl + Alt + Q

## Uncompressed movie

When exporting an uncompressed AVI video file you can adjust the size and frame rate of the AVI video you wish to create. The video material will not be compressed by a codec.

**Note:** This will create very large files!

Keyboard shortcut:           Ctrl + Alt + U

## Video as MotionJPEG AVI

Opens the export dialog for AVI video in MotionJPEG format. This format is supported by digital picture frames, for example.

Keyboard shortcut:           Ctrl + Alt + O

## Movie as a series of individual frames

This option exports the video as a sequence of single frames in bitmap format. This means a graphic file will be created for every frame of the video. The image count may be determined in the export dialog under "Frame rate".

Keyboard shortcut:           Ctrl + Alt + E

## Windows Media Export

Exports the arrangement in Windows Media format. This is a universal audio/video format from Microsoft. The setting options in the **Advanced** dialog are correspondingly complex.

## Manual configuration

**Audio/Video codec:** Various codecs corresponding to the many versions of Windows Media (7, 8, 9) are possible. If playback compatibility problems arise, try an older codec with a lower version number.

**Bit rate mode:** Constant and variable bit rate modes are possible; however, most devices and streaming applications require a constant bit rate. For VBR two-pass modes, the movie is compressed in two passes for optimal use of the bandwidth required for highly-compressed movies on the Internet.

**Bit rate/quality/audio format:** The bit rate substantially determines the display and audio quality. The higher this is, the better your videos will look and the larger the files and the required encoding time will be. For variable bit rates, the bit rate is adapted dynamically to the requirements of the corresponding picture or sound material. Here, either the quality value of between 1-100 can be set or, for two-pass encoding, an average or maximum bit rate. For audio, the bit rate is set additionally by the audio format.

**Import from system profile (export type):** For the most used methods (other than for playback on mobile devices; for this you should use the supplied presets), e.g. Internet streaming, Microsoft provides a diverse selection of system profiles. If you have the Windows Media Encoder 9 installed (available from Microsoft as a free download), then you can edit the profiles or create your own. These can be loaded by pressing the "Import from profile file" button.

Go to **Clip info** to insert title, author name, copyright details, and a description.

Keyboard shortcut:      Ctrl + Alt + V

## Video as MPEG-4 video

**Hint:** In order to use the MPEG-4 video export feature, you will have to activate this function first (view page 338).

MPEG-4 is the most advanced video format available at the moment. Unlike others, it can provide high-quality pictures at the same file size.

Behind MPEG-4, you'll find a highly complex "academic" standard that operates and is supported variably according to make. To go into detail on these differences and parameters would be beyond the scope of this documentation. For this reason, indications, along with the operational manual of your device, are given that should help create executable MPEG-4 files. For more experimental users, the complete setup options of the MPEG-4 codec can be found behind the "Advanced settings..." buttons.

**Video/Audio:** The MPEG-4 format and the advanced AVC format are also available but have, as of yet, only been used in a few devices. MPEG4 video can be combined with AAC or AMR sound, the latter mostly in conjunction with mobile phones. The



combination ACC/AAC doesn't appear very often (Apple iPod Video), ACC with AMR in contrast, not at all.

**Multiplexer:** Here you can find the so-called container formats and special options for Apple iPod and Sony PSP. MPEG-4 is usually used as an **output format**, mobile phones mostly use 3GPP.

Keyboard shortcut: Ctrl + Alt + G

## Hardware acceleration - CUDA, Quick Sync Video, OpenCL

MAGIX Movie Edit Pro 2016 supports hardware acceleration for AVCHD exports as well as AVCHD and Blu-ray discs. This can noticeably speed up the encoding process.

The hardware acceleration that is applied depends on the encoder being used and the hardware built into the system.

- **Quick Sync Video:** Intel processors starting with „Sandy Bridge“ when using a standard MPEG-4 encoder (view page 356, view page 344) or a Main Concept MPEG-4 encoder (view page 356, view page 344).
- **CUDA:** NVidia graphic cards when using a Main Concept-MPEG-4 encoder (view page 356, view page 344).
- **OpenCL:** AMD graphic cards when using a Main Concept MPEG-4 encoders (view page 356, view page 344).

**Note:** Ask your graphics card manufacturer whether your graphics card supports hardware acceleration. Make sure that all the necessary drivers are installed.

If your system does support hardware acceleration, you can activate it in the "Encoder Settings" dialog under "Advanced..." > "Hardware acceleration".

## Export video as HEVC

HEVC is the successor format to MPEG-4. HEVC (view page 348) allows for the same image quality across file sizes, even when smaller file sizes are used. The improved image quality can be clearly seen, especially at lower bitrates.

Shortcut: Ctrl + Alt + I

## Audio as MP3

MAGIX Movie Edit Pro 2016 supplies an optional MP3 Encoder for especially fast and good-sounding conversions into the popular MP3 audio format.

**Warning:** In order to use the MP3 export function, Windows Media Player 10 or higher has to be installed to your system.

**Hint:** The MP3 Encoder cannot be used as a codec for the audio track of AVI audio files.

## Transmission format

Here you can specify how you wish to send the audio file to the mobile device. Read more on this under Transferring files.

## Options

In the "Options" section you can set the format and the compression of the audio file.

**Bit rate:** The "Bit rate" selection specifies the level of compression: The higher the bit rate, the higher the quality of the exported audio file. On the other hand, the bit rate determines the final file size: The smaller the bit rate, the smaller the files.

**Mono/Stereo/5.1 Surround:** Most mobile devices have only one loudspeaker. To save on memory, you can export in mono as well. In 5.1 Surround Mode (see Mixer in Surround Mode (view page 197)) you can also export in MP3surround.

**Normalize:** This function should always be activated. It guarantees that the music is not too loud/overmodulated or too quiet.

## Audio as wave

The movie's audio track is exported in the wave (\*.wav) audio format.

Keyboard shortcut: Ctrl + Alt + W

## Export as transition...

Please see "Creating custom alpha transitions (view page 117)"

Keyboard shortcut: Ctrl + Alt + T

## Single frame as BMP

Exports the image at the position of the start marker and displayed on the video screen as a BMP file.

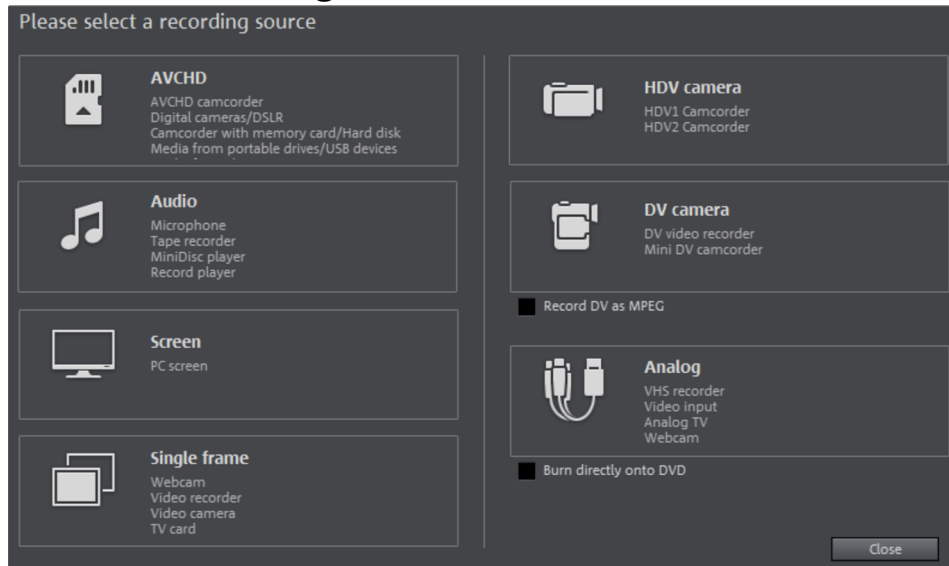
Keyboard shortcut: Ctrl + Alt + B

## Single frame as JPG

Exports the picture located at the current start marker and displayed in the video monitor as a JPG file.

Keyboard shortcut: Ctrl + Alt + J

## Record audio / images / video



A selection window will open to choose the desired recording type. This may also be accessed via the "Audio or video recording" button in the transport controls.

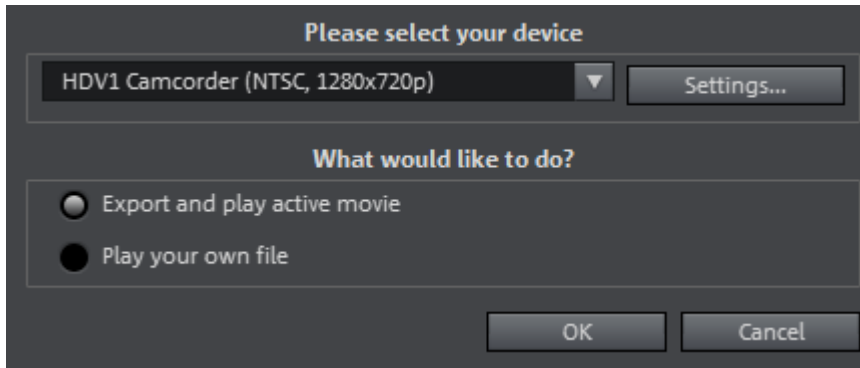
Keyboard shortcut: R

## Import Audio CD track(s)

A CD track may be imported via drag & drop from the Media Pool just like a normal file. If this convenient method fails for some reason, then this menu command may be accessed via the CD manager to insert tracks from audio CDs directly into the arrangement. More about this is available in the section "Import audio CD".

## Export to device

Open this dialog via "File" > "Export to device".



Here you can transfer your finished video onto external devices. Select the target device from the list.

### Export to mobile devices

Most devices require certain format settings (file format, resolution, bit rate, picture repeat rate, etc.) to be able to play a video.

The menu is divided into various device classes to make choosing your device easier. The last three selections are saved as favorites in the top part of the device list if you have more than one device or want to present your movies to your friends.

If your device is listed here, you don't have to worry about the format settings, as the necessary settings of the export dialog (view page 267) are automatically customized to the target device. Simply select your device and click "OK".

### Output DV/HDV

For digital output please select "File" > "Output audio/video" and then select **Camcorder** in the device menu. For DV cameras you can select the device **DV camera** for HDV camcorder **HDV1** or **HDV 2 Camcorder**.

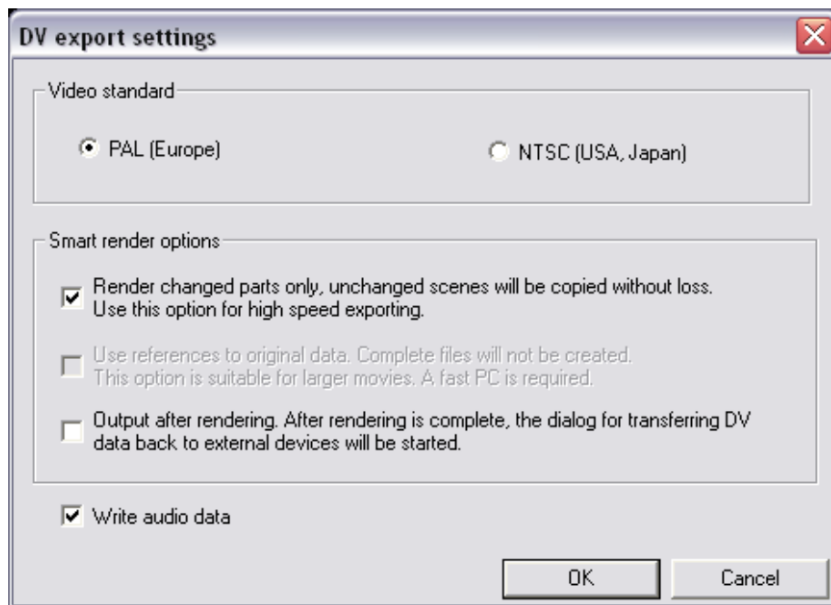
With Settings you can open the respective export settings dialog (DV-AVI export for DV camcorder, MPEG export for HDV camcorder). For most applications you should use the settings defined here. **Advanced** takes you to the DV export settings (More information can be found in the section "DV export settings" on page 275).

Now connect your camera and follow the displayed instructions.

If you want to export a rendered (already edited) movie to DV, there's no need to render it again. Simply activate the "Play own DV file" option and select your DV video from the "My audio video" directory.

**Tip:** Digital cameras that can digitally record via a PC connection are usually more expensive. You may be able to reduce your purchase costs considerably by buying a digital camera that cannot transfer digitally and have the function activated by a camera specialist. You should enquire about this option before making your purchase.

## DV export settings



**PAL/NTSC:** The PAL format is used in Europe, and the US and Japan use NTSC. This option usually does not require changing.

**Render changed parts...:** Non-edited original files are simply copied into a completed DV AVI. Normally, you have to decompress the DV data, add the set effects calculations, and recompress it. If no effects processing is pending, then these steps may not be necessary. This option can be permanently activated.

**Use references to original material...:** Unedited original files are exported directly to the device. Effects are rendered in real time. Use this option for finished movies without edits and effects, since real-time effects processing of DV data causes high processor loads that often result in output errors.

**Transfer DV back to device after export...:** Deactivate this option if you are only rendering your movie but do not want to export it. You can export your movie later by clicking "Export own DV file" from the "Export" dialog.

My device is not in the list, what should I do?

User-defined:

If your device does not appear in the list after the online update, you can set up the export settings manually. No need to worry though; you only have to do it once, since these settings can be saved as a preset.

Read the **instruction manual of your mobile device** to find out which file format is required for this. If your device supports multiple formats, then you can experiment with the formats to get the best results.

Specify the file format by opening the target device's menu and selecting "**User-defined -> Video -> ...Format**". If you then click on "Export", you arrive at the Export dialog (view page 267) of the selected file format where you can set all the advanced settings.

**For details on these settings, please consult your device manual.** Explanations for the file format's settings can be found in the **Overview of the device classes** chapter, for the special settings of the export dialogs see "Export movie" in the "File menu" chapter.

**Tip:** If the format settings for your device are not accessible, then you can try out a different device from the same manufacturer and, using it as a template, make adjustments accordingly.



If you find settings you like, we recommend saving these as a preset for further use.

## Batch conversion

This menu item accesses the batch processing (view page 236) function. This quickly and efficiently converts multiple files, movies, or projects into various video formats.

Keyboard shortcut: S

## Burn CD/DVD

### Manually compile files

Opens MAGIX Speed burnR to burn videos or other files onto CD/DVD. File selection is done via drag & drop from MAGIX Speed burnR's Explorer.

Keyboard shortcut: Ctrl + B

### Copy CD/DVD direct

The dialog provides several options for creating a copy:

- **Copy:** Here you can directly copy a non copy-protected CD or DVD.
- **Shrink:** Compresses a DVD to the size of a regular single layer DVD+/-R/RW. All files of the original DVD have to be on the hard drive.
- **Analog copy:** Copies your video onto a disc via analog recording.

*Read more about this in the chapter "Record (view page 82)".*

### Burn copy of an already created video disc

All necessary files, menus, and encoded video files needed to burn a disc will be temporarily stored on your hard drive as an image. After your disc is burned, these are **not** automatically deleted. You can use these images to burn as many discs as you would like without having to encode the files again.

In the dialog, choose the image you want. All necessary files are then transferred to the MAGIX MAGIX Speed burnR burning software.

**Tip:** For more information on using MAGIX Speed burnR, read the program's help file.

## Internet

Quack access to MAGIX Online World. Find out more about the Services, manage your access data, download media from your Online Album, etc.

### MAGIX Online Album/Catooh

MAGIX Online Album allows you to publish photos and videos in your own online album. You can share this with your friends and acquaintances or with the whole world.

Catooh offers you with the option of finding and purchasing more media and templates. Via the "media backup" option, you can import already purchased media that are saved on your computer to MAGIX Movie Edit Pro 2016.

**Note:** For more information about MAGIX Online World select the menu item "File" > "Online" > "Find out more about MAGIX Online World...".

## Manage your login details

In this dialog you can enter and manage your login details (email address and password) for all services accessible from MAGIX Movie Edit Pro 2016. You therefore do not have to login every time, for example, when exporting to Facebook (view page 298) or in the MAGIX Online Album (view page 277).

## Backup copy

Files must be saved to be able to be easily retrieved in case of a hard drive crash or some other error.

For detailed information, read the "Backup" (view page 238) section in the "Wizards and special functions" (view page 213) chapter.

## Load backup project

This option loads an automatically created slideshow backup. This type of automatic backup gets the file extension MV\_ (underscore). This command is only intended for use in emergencies, for example, if you unintentionally saved your change and wish to return to the previous version of the movie.

Keyboard shortcut:                      Ctrl + Shift + O

## Cleaning Wizard

The clean-up wizard helps delete projects from the hard drive, including all of the media files used. Use this function to free up disk space for future projects.

**Caution:** If the files you used in the movie have also been used in other movies (like trailers, opening music, etc.), then you should make backup copies of these files beforehand.

Keyboard shortcut:                      Ctrl + Shift + Y

For detailed information, read the "Cleaning Wizard" (view page 240) section in the "Wizards and special functions" (view page 213) chapter.



## Settings

### Movie settings

Opens the movie settings (view page 69) of the currently selected movie.

### Program...

Opens program settings (view page 72).

Shortcut: Y

### Keyboard shortcuts...

This menu entry opens a dialog for editing keyboard shortcuts (view page 329); this enables you to adjust MAGIX Movie Edit Pro 2016 however you like.

Keyboard shortcut: Ctrl + Shift + U

### Proxy and preview rendering... (Plus/Premium version)

This menu item opens the dialog for the proxy and preview rendering settings.

Keyboard shortcut: Alt + R

### Change the program interface

Here you can choose between a darker or lighter variant of the program interface.

### Language

Here you can change the language used in MAGIX Movie Edit Pro 2016. Normally the language that is used for installation is set as the program language.

### Reset Program Settings to Default...

Use this function to reset all program settings you made in MAGIX Movie Edit Pro 2016 to their original settings.

## Exit

Closes MAGIX Movie Edit Pro 2016.

Keyboard shortcut: Alt + F4

## Edit Menu

### Undo



This command allows you to undo the last changes made. This way, it's no problem if you want to try out critical operations. If you don't like the result, you can always revert to the previous state using "Undo".

Clicking on the arrow next to the button opens a list of changes made until now, allowing you to undo several changes made in sequence.

**Note:** You can adjust the length of the list to your needs in program settings (view page 72). A general rule: The longer the list, the more RAM is used.

### Restore



This function undoes the previous "Undo" function.

Clicking on the arrow next to the button opens a list of revoked changes made until now, allowing you to restore several "undo steps".

### Empty undo and cache memory

This option deletes the memory for undo commands and clipboard (cache).

### Cut objects

This function extracts the marked scene and copies it to the clipboard. You can then use the "Paste" command to copy it into any movie.

### Copy objects

This function copies the selected scene (or the selected object in the Timeline-mode) to the clipboard. You can then use the "Paste" command to place it into any movie.

### Paste objects

This command inserts the clipboard material (photo or object) at the current position of the start marker.

Keyboard shortcut:      Ctrl + V

## Duplicate objects

This command duplicates all selected objects. The copies appear beside the original and can be placed in the correct position using drag & drop.

Keyboard shortcut: D

## Delete objects



This command deletes the selected scene (or the selected object in Timeline-mode).

Shortcut: Del

## Select all objects

All objects in the arrangement will be selected.

Keyboard shortcut: Ctrl + A

## Save objects as takes

The selected objects are saved in the takes directory. To use takes, please read the chapter "Saving objects separately (view page 115)" in the PDF manual.

Keyboard shortcut: Strg + F

## Cut

Editing functions are also accessible using the toolbar. The last selected function will appear in the toolbar as a button.

### Split scene



This command cuts a scene at the point where the playback marker is positioned. This way, two free-standing objects are created.

Keyboard shortcut: T

### Remove scene start



This command cuts a scene at the point where the start marker is positioned, and deletes all material that precedes the start position simultaneously.

Shortcut: Z

## Remove scene end



This command cuts a scene at the point where the start marker is positioned, and deletes all material behind the start position simultaneously.

Keyboard shortcut: U

## Remove scene



If you want to cut a scene on track 1 out of a movie in the timeline mode at a later stage, this option automatically moves objects, titles, and transitions on all tracks forward so that no gaps are created in the film.

Objects on other tracks which extend into the area of the scene in question will not be moved automatically; they will remain in their current positions.

Shortcut: Ctrl + Del

## Split movie



This command divides the movie into two individual movies at the position of the playback marker.

The current project window retains the portion that is located in front of the playback marker. The latter part will be removed from the current project window and placed as a new film. You can find this movie by going to the "Window" menu.

Shortcut: Alt + Y

# Musical editing

If your background music is edited using the beat recognition assistant (view page 232), you can automatically adapt your cuts to the tempo with this option. All hard cuts (no crossfaded objects) are shifted across the musical quarter note positions.

Keyboard shortcut: Ctrl + Shift + M

## Range

MAGIX Movie Edit Pro 2016 provides object-based functions as well as "band-oriented" editing functions. These always refer to the whole arrangement from the first to the last track as well as to the area between the start and end marker.

## Cut range

The section between the in and out points is cut from the current project and placed on the clipboard. This section can be reinserted elsewhere.

Shortcut: Ctrl + Alt + X

### Copy range

The section between the in and out points is copied from the current project to the clipboard. This section can be reinserted elsewhere.

Shortcut: Ctrl + Alt + X

### Delete

The section between the in and out points is deleted from the current arrangement and not copied to the clipboard.

Keyboard shortcut: Alt + Del

### Insert range

The contents of the clipboard are inserted at the current project's position of the in point.

Shortcut: Ctrl + Alt + V

### Extract

The section between the in and out points is preserved, and all of the material in front and behind it are deleted. Use this option to isolate a specific part of an arrangement for further individual editing.

Shortcut: Ctrl + Alt + P

### Insert blank space

An empty section the length of the period between the start and end marker will be added to the first visible track. The objects following this will be moved.

**Note:** This function only applies to the first visible track. Therefore, it is necessary to scroll through the arranger to bring the track you want up to the line at the top.

Keyboard shortcut: C

### Insert still image

The start of the range is inserted as a still shot over the length of the range.

**Note:** This function only applies to the first visible track. Therefore, it is necessary to scroll through the arranger to bring the track you want up to the line at the top.

## Form group



Orders all selected objects into groups. As soon as an object from the group is selected, all other objects in the group will be highlighted as well so that you can work on them collectively.

Keyboard shortcut: G

## Ungroup objects



This turns all selected objects into free-standing objects again.

Keyboard shortcut: Shift + G

## Wizards

### Slideshow Maker

Opens the Slideshow Maker (view page 229)

Keyboard shortcut: Ctrl + M

### Soundtrack Maker

This command opens MAGIX Soundtrack Maker (view page 202).

Keyboard shortcut: Ctrl + Shift + S

### Travel route animation

This menu entry opens the separate Travel route animation program. This enables simple creation of animated travel routes with the help of online maps.

**Note:** In order to be able to use current map data, maps are fetched by Travel route animation directly from the Internet. This requires an active Internet connection.

## Mixdown Audio

This option joins all audio objects in one audio file. The sound material will only occupy one track of the project window and will hardly affect the RAM, but it will

occupy approximately 10 MB (in stereo) on the hard drive. This will give you more control over the project window and more space for additional objects.

MAGIX Movie Edit Pro 2016 automatically normalizes the audio file, i.e. the loudest part of the wave audio object is identical with the highest figure of the 16-bit resolution ceiling. This guarantees the same sound quality, even if you repeat the mix down procedure or you combine the mix down file with other wave audio objects again and again.

The mix function is very helpful if you want to go on using the mixdown object. For the final AVI or WAV (or any other multi-media) file, which is designed for burning a CD or for use on other PCs, use the "Export arrangement" submenu options from the file menu instead of the mixdown function.

**Tip:** Instead of using the mixdown function, you can use the various options of the submenu "Export movie" in the File menu to create a final \*.avi or \*.wav (or any other multimedia) file.

Keyboard shortcut: Shift + D

## Audio and video mixdown

In addition to the "Combine audio" function (see above), all video objects including effects, transitions, and edits are combined in a single MAGIX video file (view page 268). If your computer starts to approach its limits, this enables you to free resources for further editing.

Keyboard shortcut: Shift + M

## Start preview rendering...

Starts Preview rendering (view page 214).

Shortcut: Ctrl + R

## Remove range(s) for preview rendering...

Removes preview rendering ranges. If multiple sections were defined and the playback marker is placed over one of these sections, you will be asked whether you would like to remove only this "Section" or "All".

## Marker

### Set project marker

This option places a project marker at the current playback position. More information about project markers is available in the chapter "Markers" under "Set project marker (view page 119)".

Keyboard shortcut: Ctrl + Enter

### Delete project marker

Deletes the selected project marker (view page 119). Project markers can be deleted and renamed via the context menu.

### Set chapter markers



Places a chapter marker at the position of the playback marker. This creates a chapter entry in the disc menu in case the movie is being burned to disc.

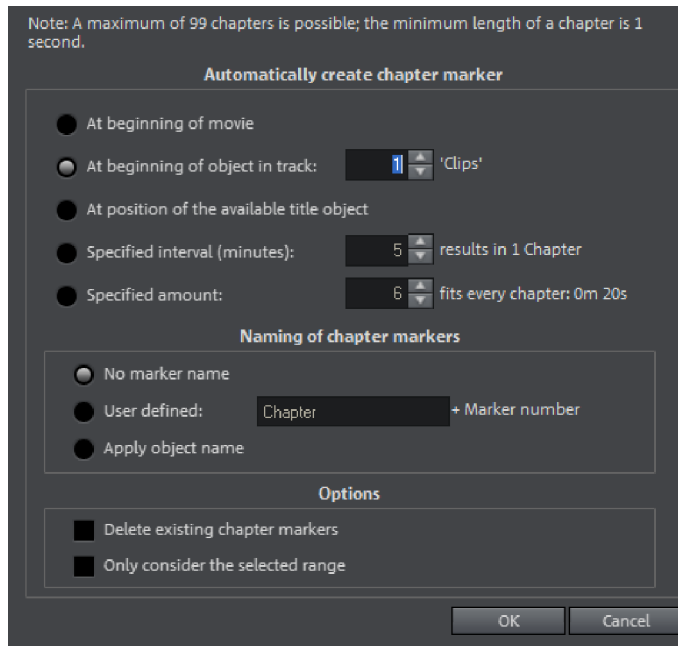
You can rename the chapter markers by right clicking and selecting "Rename" in the context menu. The new name will also appear in the chapter menu (view page 242).

### Set chapter markers automatically

This option automatically sets chapter markers in the project according to specific rules that will then appear as chapters in the film menu of a disc. This is useful if you need to burn a disc immediately after recording.



Keyboard shortcut: Shift + Alt + Return



### Automatically create chapter marker

- **At the beginning of a movie:** The movie contains only one chapter
- **At object starts in a track:** Every object in a track creates a chapter, Track 1 is preset.
- **At the position of existing title objects:** Subtitles, for instance, as faded-in subheadings, give the position of the chapter markers.
- **Provide interval (in minutes)/provide quantity:** If the chapters are separated without any particular method and are just needed for quicker navigation, chapter markers may also be inserted in pre-defined intervals or as a pre-defined number of chapter markers.

### Naming chapter markers

- **No marker name:** Marker name and marker number are not specified.
- **Custom:** You can use a custom name. A sequential marker number will be attached to it.
- **Apply object name:** The marker name is taken from the object name and the text in the text object. **No sequential marker number** is specified.

### Options

- **Delete existing chapter markers:** Deletes chapter markers that have already been set.

- **Only take the selected area into account:** The chapter marker is automatically set to the area between the start and end markers only.

## Delete chapter markers/delete all chapter markers

Delete one or all chapter markers. This removes chapter entries in the disc menu if the film is burned to disc.

Keyboard shortcut: Ctrl + Alt + Enter

## Marker -> Set range start/end

Sets a range start/end marker at the position of the playback marker.

Keyboard shortcut: I/O

## Marker -> Jump to range start/end

Sets the playback marker at the position of the range start/end.

Keyboard shortcut: Shift + I/O

## Range above blank space

If you set the playback marker in a empty range in the first visible track, this function will create an area over the length of the range.

Alternatively, you can find this function in the context menu of the empty range.

**Note:** This function only applies to the first visible track. Therefore, it is necessary to scroll through the arranger to bring the track you want up to the line at the top.

Shortcut: X

## Fill blank space with still image

The blank space in which the playback marker is located is filled with a still shot with the last image before the blank space.

Alternatively, you can find this function in the context menu of the empty range.

**Note:** This function only applies to the first visible track. Therefore, it is necessary to scroll through the arranger to bring the track you want up to the line at the top.

Marker -> Reset selected range

Deletes the range start and the range end.

## Move screen view

Using these commands, a viewable portion together with the start marker will be moved in the timeline. You can quickly skip between different markers (skip, chapter, scene, ad-marker) and object edges.

Keyboard shortcut:            See "Keyboard shortcuts", "Project window". (view page 321)

## Multicam

This command switches to Multicam mode.

## Mute audio tracks (Multicam)

To avoid the interference of several multicam audio tracks being played at the same time, you can mute all of the audio tracks.

Keyboard shortcut:            Alt + Shift + M

## Effects Menu

### Master effects

This menu item accesses the movie's effect settings (view page 169). The settings affected here apply to the entire movie.

Keyboard shortcut:            Ctrl + Shift + H

### Video object effects

#### Scene recognition

Calls up the automatic scene recognition, which "cuts up" longer videos into scenes for storage in the "Takes" directory.

Keyboard shortcut:            Shift + Z

## Image stabilization

Select which image stabilization you want to use. In the Media Pool, you can choose between the normal image stabilization dialog (view page 167) and proDAD Mercalli 2.0 (view page 142). Both will allow you to correct blurry footage. Try both to see which one gets you better results.

Image stabilitaion keyboard shortcut: CTRL + L

## In MAGIX Photo Designer bearbeiten

Graphic files (BMPs or JPEGs) from the project window can be post-edited in an external graphics program. The selected image file is loaded automatically and, once editing has been completed, is used in the MAGIX Movie Edit Pro 2016 instead of the original material. For this, MAGIX Movie Edit Pro 2016 offers the high-performance photo editing program MAGIX Photo Designer.

## Save photos with effects

This allows you to save photos used in the movie and add the object effects used in MAGIX Movie Edit Pro 2016 (e.g. StoryMaker) to the photo.

## Create panorama...

Opens the dialog for setting a panorama. Place as many photos in the correct order as you like, and align brightness and color settings to get the best results. You should make sure that the photos harmonize at the transitions.

## Video effects

Here you can find adjustable effects for video and photo objects. The effects can be set only after selecting an object in the respective effects dialog. For more information, go to the "Video effects in the Media Pool" (view page 136) section in the "Effects" chapter.

## Video effect templates

This features general templates that can be added to the video objects via drag & drop and several video mix effects that can be quickly and easily applied, e.g. bluescreen.

## Movement effects

These are movement effects you can use to animate the frame by using zoom or camera movements. For more information go to the "Effects" chapter, section "Movement effects in Media Pool" (view page 144).

## Movement effect templates

These are templates for movement effects. These can be added from the Media Pool into the arrangement by double-clicking or via drag & drop.

## Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

## Stereo3D

This accesses the program's Stereo 3D functionality. Please read the corresponding chapter "Stereo 3D". (view page 205)

## Background design

Select a color, a picture, or any video on your hard disk which you would like to serve as the background for the photo displayed. This function is especially useful when photos have black bars around them, or if they are reduced in size.

## Reset background

Resets the background design (view page 291) settings to default settings.

## Set as background

Uses the selected photo or video as the background.

## Load video effects

This command enables a saved effects combination to be loaded for the currently loaded object. If multiple objects are selected, then the effects combination will be applied to each selected object.

Shortcut: Ctrl + -

## Save video effects

This command saves the current effects combination for each object separately.

Shortcut: Alt + -

## Reset video effects

This option allows you to deactivate all currently used effects. The material will be reset to the state it was in before you applied the effect.

Shortcut: Ctrl+ Alt + -

### Copy video effects

Effects settings for an object may be copied to the clipboard to add (view page 292) them to other objects.

Keyboard shortcut: -

### Insert video effects

Video effects may be inserted into the selected object from other objects. The settings must be copied (view page 292) beforehand into the clipboard.

Keyboard shortcut: Shift + -

### Apply video effects to all

The current effects settings will be applied to all scenes and photos in your movie.

### Apply video effects to all of the following

The current effects settings will be applied to all scenes and photos in your movie which lie behind the selected object.

## Audio object effects

### Normalize (maximum level)

The function "Normalize" raises the level of an audio object to the maximum possible level without clipping the material. This searches for the largest signal peak in the audio material and raises the level of the object so that this position matches exactly 0 dB (maximum overdrive).

Keyboard shortcut: Shift + N

### Automatic track damping

Please see Reduce volume (view page 191) in the audio effects chapter.

Keyboard shortcut: Alt + L

### Adjust loudness of selected objects

This function adjusts the loudness of all selected objects to fit the last activated object.

You can find more information about this under "Adjust loudness of selected objects" (view page 172).

## Set volume

This function, located in both the effects menu and the context menu, controls the sound volume for individual objects, just like the object handles in the project window.

## Audio cleaning

Opens the "Audio Cleaning (More information can be found in the section "Sound optimization" on page 178)" dialog.

Keyboard shortcut: Alt + A

## Echo/Hall

Please see "Reverb/Echo" in the chapter "Audio effects".

Keyboard shortcut: Shift + H

## Timestretch/resample

Read more about this in Timestretch/resample (view page 184).

Keyboard shortcut: Ctrl + Q

## Audio effects

These options open the individual effects from the audio effects folder in the Media Pool.

## Audio effect presets

This option opens the audio effect presets in the Media Pool.

## Load audio effects

This command enables a saved effects combination to be loaded for the currently loaded object. If multiple objects are selected, then the effects combination will be applied to each selected object.

Keyboard shortcut: Ctrl + +

## Save audio effects

This command saves the current effects combination for each object separately.

Keyboard shortcut: Shift + +

## Reset audio effects

This option allows you to deactivate all currently used effects entirely if you want to undo the changes.

Keyboard shortcut: Ctrl + Alt + +

## BPM Wizard

Read the section concerning the Tempo and beat recognition (view page 232) in the chapter "Audio" for more about this.

Keyboard shortcut: Alt + Shift + K

## Volume curve

The most important effect, the volume, is available here directly. The volume is also available via the Media Pool under "Effects -> Audio effects -> General (view page 152)", where it may also be animated.

Keyboard shortcut: Ctrl + Shift + V

## Title Effects

### Title Editor



Opens the Title editor for the selected photo, video, or title object.

Keyboard shortcut: Ctrl + T

### Load title template

Use this command to load previously saved title effects for the current object.

Shortcut: Alt + Shift + T

### Save title template

You can save the current effect combination for each title object separately and apply it to other title objects later.



Shortcut: Alt + T

## Design elements

**Picture-in-picture:** These are various effect templates for image stacking.

**Collages:** These work similarly to normal picture-in-picture effects but more objects are used. Depending on the collage, arrange the selected objects one after the other and drag the collage onto the first object.

**Test images:** These are professional test images for calibrating your system. You can also use the colored backgrounds for your own color transitions, for instance. The special "User" template opens a color selection dialog where you can choose the desired color.

**Backgrounds:** Here you can find static and animated photo and video backgrounds. Video backgrounds are capable of being looped, meaning that their length can be extended by duplication.

**Image objects:** Here you will find various image objects like black bars, thought bubbles for cartoons, etc.

**Intros/Outros:** These are beginning and end scenes for films with various themes.

You can find additional information in the "Effects (view page 153)" chapter, in the section "Design element in Media Pool".

## Effects library

Using these menu choices, you can control the corresponding directories in the Media Pool (view page 25, view page 47).

## Windows Menu

### Window arrangement

#### Standard

This option switches from the multiple monitor setting (see below) back to the standard single monitor setting.

## Multi-monitor with maximized preview monitor

This option can be used when several computer monitors are connected. It enlarges the preview monitor for a fullscreen display on one of the connected monitors. The other elements are displayed on a second monitor.

## Reset window arrangement

If you have moved the windows around in MAGIX Movie Edit Pro 2016, you can put them back to the original position using this command.

Keyboard shortcut: F9

## Cut Trimmer

Shows or hides the "Cut trimmer" window. This allows you to make fine adjustments to the position of the selected video or image objects and their handles – as well as the transition characteristics (transition type, length). Please read the "Fine adjustment of video ("Trimming") (view page 112)" chapter for more details.

Keyboard shortcut: N

## Object trimmer

Shows or hides the trim window. This enables the position of the selected video or image object and its handles to be adjusted more finely. Read the chapter "Adjusting videos precisely" ("Trimming") (view page 112).

Keyboard shortcut: Shift + N

## Mixer

With this option you can open and close the real-time mixer. Further information can be found in the Mixer (view page 192) chapter.

Shortcut: M

## Master audio effect rack

Opens or closes the master effects rack; you can also use the "Master FX" button in the mixer window for this.

Shortcut: B

## Mastering Suite

This opens the Mastering Suite.

## Program monitor

Opens and closes the video window. If the standard layout is chosen the Mediapool can be shown in a freely scalable and moveable window.

Keyboard shortcut: Shift + V

## Media Pool

With this option you can hide the Media Pool or make it visible again.

Shortcut: F

## Project

Shows/Hides the project window

## Activate next window

This option activates the next window respectively and allows better control with keyboard shortcuts in MAGIX Movie Edit Pro 2016.

## Show movie overview

With this option, you can display an overview of the entire arrangement on the video screen. It is particularly suitable for long and complex arrangements to prevent you from losing track. You can view the whole movie and you are, despite this, able to access the object you're looking for in a split second – you can zoom in directly on the video monitor or move around the clip displayed in the project window.

Keyboard shortcut: Shift + A

## Optimize movie view



The zoom level is set to 100% so that you can see every object and the entire film.

The start and end markers are set to the beginning or end, so that the entire movie can be played.

Keyboard shortcut: Ctrl + F

## Zoom horizontal

Here you will find a range of functions for altering the visible time axis section.

## Zoom vertical

The number of simultaneously visible tracks can be changed here. The more tracks are visible, the smaller they will appear.

## Remove all movies from project

Closes all opened movies.

## Share Menu

Here you will find many options for quickly and easily publishing your data from the program on the web. Additionally, data transfer into other programs for specialized editing, if you have such programs installed, is enabled.

## Youtube / Vimeo / Facebook

This is the direct link to YouTube, Vimeo or Facebook.

### Youtube / Facebook

Uploads the current film to the selected portal or to the selected community. Enter the data for video into the fields provided, so that the search function for this portal can also find this video.

MAGIX Movie Edit Pro 2016 partially uses the H.264 format for this, which is a component of the MPEG-4 codec. Since Flash supports this format directly and most communities and portals use the format, the film does not need to be re-rendered on the corresponding server. This avoids loss of quality.

When HD material is uploaded, a resolution of 720p is used for the HD format.

### Upload all selected media in Media Pool

Uploads the media selected in the Media Pool to the corresponding portal or the selective community.

**Note:** To import and export AVC(HD) and MPEG-4 files, the MPEG-4 codec must first be activated (view page 338). A dialog will open if the codec is required.

## MAGIX Online Album

Here you have the option of uploading media from a movie or the complete movie to your MAGIX Online Album.

## showfy

Here you can access the options for uploading media from a movie or a complete movie to your showfy account (view page 263).

## Back up to CD or DVD

This option opens MAGIX Speed burnR for burning files directly to CD or DVD.

## Additional options

The additional options in the "Share" menu vary depending on the installed software. For example, you can edit photos or graphics in Xara Web Designer or Xara Photo & Graphic Designer, the audio can be improved in MAGIX Audio Cleaning Lab, or you can add audio dubbing to your movie with MAGIX Music Maker.

## Help Menu

### Help

This command is available for almost every feature of the program, and it opens the "Help" file for the corresponding topic. Use this command to get help on any of MAGIX Movie Edit Pro 2016's functions.

Keyboard shortcut: F1

### Context help

The mouse cursor will turn into an arrow with a question mark.

Click on any button of the main screen, to open program help which will describe the control element in question.

Shortcut: Alt + F1

## PDF manual

Opens the manual in PDF format. Similar to the Help feature that can be accessed by pressing F1, this manual contains all of the important information about the program.

## Quickstart/Recording/Editing/Burning and exporting tutorial video

Displays tutorial videos on different video editing topics in MAGIX Movie Edit Pro 2016.

**Tip:** If you are using MAGIX Movie Edit Pro 2016 for the first time, we recommend you view the tutorial videos first. They will give you a quick introduction to the most important topics.

## Display tooltips

Tooltips are small information windows that open up automatically if the mouse pointer stops briefly on a button or some other area. They provide information about the function of the button. These information boxes can be switched on or off with this option.

## magix.info

Ask magix.info a question.

You can also present your own videos on magix.info.

## Online video tutorials

There is a series of video tutorials about MAGIX Movie Edit Pro 2016 on the MAGIX Website that provide clear, descriptive explanations for many of the features.

**Note:** An Internet connection is required.

## Online tutorials

Interesting tutorials and useful tips for working with MAGIX Movie Edit Pro 2016 can be found on the MAGIX website.  
An online connection is required.

## Register online

This option opens the MAGIX homepage for online registration where you can register as a MAGIX user.

Registration grants you access to the MAGIX support website where various program updates and help programs can be downloaded.

## Online Update

Connects directly to the online update page where you can get the latest version of your program.

## Download video effects plug-ins

This command lets you download new video effects plug-ins (view page 158).

## About MAGIX Movie Edit Pro 2016

Displays copyright info and version number of MAGIX Movie Edit Pro 2016.

## Context menu (right click)

Context menu can be reached by right clicking on a selected object. It offers functions which are available and can be expected in the given context.

## Video objects

### Create frame table (new)

Sometimes, rebuilding a frame table can get rid of problems in certain MPEG files. For example, such problems can be present if the navigation (positioning of the playback marker, transport) is bumpy or doesn't function at all.

Normally, when loading MPEG video, a frame table is not created in order to speed up the loading process. If you do create one anyway, MPEG files are normally noticeably faster and easier to edit.

### Audio functions

Here you'll find various options for editing the audio track. These correspond to the menu options "Effects" > "Audio object effects" with the following exceptions:

### Create wave form

In most cases, the waveform display of an audio file will not be required. However, if you require this, e.g. to navigate while cutting video, a waveform display can be produced manually via this function.

### Adjust loudness of selected objects

This function adjusts the loudness of all selected objects to fit the last activated object.

You can find more information about this under "Adjust loudness of selected objects" (view page 172).

### Mute/activate audio object

Mutes the audio track of the video object without deleting it or reactivates the previously muted audio track in a video object.

### Remove/restore audio object

This option allows you to remove or restore an audio object to simplify the display. The audio itself is not affected or deleted.

### Video/audio on one track

Video material and the corresponding audio material (original sound) will be displayed as one object on one track. Using the top object handle you can adjust the video's opacity. The lower object handle adjusts the object's volume.

### Video/audio in separate tracks

Audio material will be displayed on a separate track below the corresponding video material. This makes it easier to make advanced adjustments to audio material that go beyond changing the soundtrack's volume.

### Align other audio objects with this track

Use this feature to automatically align audio objects or combined objects that contain an audio or video track with the same or similar audio material. Each object must be in a separate track to do so.

- First click on the reference object that the other objects should be aligned to.
- Then select all the objects that you want to align to the reference object by holding down the Ctrl key.
- Then select the option "Align other objects with this track" from the context menu.

The objects are moved over each other so that your tracks run parallel.

**Tip:** This feature is especially useful for editing video material in the multicam mode (view page 129).

### Scene recognition

Calls up the automatic scene recognition, which "cuts up" longer videos into scenes for storage in the "Takes" directory.



Keyboard shortcut: Shift + Z

## Image stabilization

Select which image stabilization you want to use. In the Media Pool, you can choose between the normal image stabilization dialog (view page 167) and proDAD Mercalli 2.0 (view page 142). Both will allow you to correct blurry footage. Try both to see which one gets you better results.

Image stabilization keyboard shortcut: CTRL + L

## Cut Trimmer

Shows or hides the "Cut trimmer" window. This allows you to make fine adjustments to the position of the selected video or image objects and their handles – as well as the transition characteristics (transition type, length). Please read the "Fine adjustment of video ("Trimming") (view page 112)" chapter for more details.

Keyboard shortcut: N

## Object trimmer

Shows or hides the trim window. This enables the position of the selected video or image object and its handles to be adjusted more finely. Read the chapter "Adjusting videos precisely" ("Trimming") (view page 112).

Keyboard shortcut: Shift + N

## Snap markers

**Set snap marker:** To set a snap marker, select an object and place the playback marker at the position where you would like the snap marker to be. You can set as many snap markers as you like per object.

You can move a snap marker with the mouse using drag & drop.

Shortcuts: Ctrl+P

A snap marker will be set where the playback marker is located in the selected object.

**Delete all snap markers:** This deletes all snap markers for all objects in a film.

**Show or hide snap markers:** You can hide snap markers if required and show them again later.

## Insert still image at the playback marker

MAGIX Movie Edit Pro 2016 can create a still frame of an object at the playback marker position. This is inserted for the length of the standard display time (Program settings > Video/Audio > Standard display time) in the original object.

## Insert still image in range

The start of the range is inserted as a still shot over the length of the range.

## Motion

Lets you move video objects on the screen. See "Movement" in the "Video effects" chapter.

## Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

## Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 167)".

## Interpolation for interlace material

Choose this option to remove interlace artifacts from your video image. If, for instance, you extract freeze frames from a video, ridge structures appear in sequences which feature movement.

## Anti-flicker filter

Choose this option for still pictures with detailed structures and high contrast. This filter reduces line flickering during TV playback.

## Border cropping adjustment:

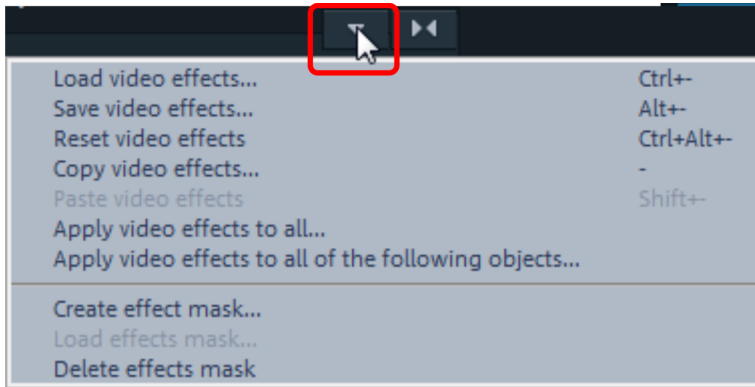
Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 170)" ("Effects" menu) will be applied.

## Background design

These options allow you to design the background of an image using a simple editor. You can use a color or an image or video file.

## Video effects

The entries for this submenu are directly available in the Media Pool.



## Copy/insert/cut/delete object

These options correspond to the menu options under "Edit".

## Save objects as takes

The selected objects are saved in the takes directory. To use takes, please read the chapter "Saving objects separately (view page 115)" in the PDF manual.

Keyboard shortcut: Strg + F

## Fade in date as title

MAGIX Movie Edit Pro 2016 can add a time or date ("time code") to the picture material. To add a time code, right-click the video object and choose the "Fade in date as title" option from the context menu.

If you're using a DV-AVI file (a digital recording from a camcorder, for instance), the recording date will be used from the chosen place. If you're using a different file, the creation date will be used as the time code. The title editor is then opened in order to customize the entry.

In the preview monitor context menu you will also find the "Display play time" option. This will create a time code.

## Object properties

This function displays all the information about the currently selected objects such as file name, position on the hard-drive, tempo, etc. The Object Editor also defines the

foreground and background color of every object in the projects. Depending on the type of object, the elements displayed will vary.

## General information

The name of the selected object, the fore/background color and aspect ratio for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

## Calculation of intermediate images (only for video objects)

**Interlace properties:** Normally, MAGIX Movie Edit Pro 2016 automatically makes suitable settings for this. Adjustments still need to be made to faulty video footage. If playback of the exported movie is very jittery, if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

**Deinterlace options:** Normally, the setting **Automatic interlace processing** does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Movie Edit Pro 2016 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace" (view page 370).

**Interpolate intermediate frames:** Activate this function in order to smoothen motion during playback in order to get a more fluid image.

## Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. You set the tempo with the BPM Wizard.

## Metadata (only when metadata is found in the object)

Metadata from images or AVCHD videos will appear here - if available. In this way you can find additional information about the object.

## Image objects

### Change photo length

This dialog gives exact values regarding the display duration for the selected photo. You may select multiple photos beforehand to change their display duration at once.

### Edit in Xtreme Photo Designer

This loads the image in MAGIX Xtreme Photo Designer for detailed editing.

## Save photos with effects

This option enables you to save photos with effects from MAGIX Movie Edit Pro 2016 as a new image file.

## Create panorama...

Opens the dialog for setting a panorama. Place as many photos in the correct order as you like, and align brightness and color settings to get the best results. You should make sure that the photos harmonize at the transitions.

## Cut automatically to fit screen

This function ensures that images don't have black edges (in case they don't fit into the given format).

## Export to MAGIX Online Album

Log in to the MAGIX Online Album service and load images and music into the album to share them with your friends and acquaintances in the Internet. The assistant will lead you step-by-step through the uploading process. After the process is finished, you can access your updated MAGIX Online Album.

## Export to MAGIX Online Print Service

Use MAGIX Online Print Service to order high-quality photo prints or fantastic printed photo gifts of your valuable digital photos simply with one click.

# Transitions



The context menu for transitions can be accessed via the A/B button on each background object. Along with the various transitions you will find the following options:

## Save as transition template

Saves your transition as a template, which you can then select via the transitions context menu.

## Apply to all objects in the track

Applies the current transition to all transitions between two objects in the selected track.

## Apply to all of the following objects in the track

Applies the current transition to all transitions between two objects in the selected track that are behind the object that you are currently editing.

## Random transitions in the track

Provides all transitions between objects in the currently selected track with random transitions.

## Transition length

You can set the length of a transition in "Transition length" in the transition menu. If you select "Apply to all", the selected length will be used for all transitions in your movie.

## Settings...

The transitions page in the Media Pool with the settings for the corresponding transition will be displayed. Depending on the transition, different settings are available.

# Audio objects

The options in the context menu for audio objects correspond to the menu options "Effects" > "Audio effects" and the "Edit" menu with the following exceptions:

## Audio effects curves

This feature provides direct access to diverse object effects, and these can be automated using a curve. All of the audio effects listed here are found in the Media Pool under "Effects -> Audio effects -> General".

## Adjust loudness of selected objects

This function adjusts the loudness of all selected objects to fit the last activated object.

You can find more information about this under "Adjust loudness of selected objects" (view page 172).

## Display track curves

The most recently selected track curve is displayed on the object for editing. Use of a curve causes the parameters set in the mixer to be disregarded.

**Note:** The track curves of audio objects can be animated in the same way as video effects. Read more about this in the chapter "Animating objects (view page 161)".

## Reset track curves

All track curves can be reset with this function. The settings made in the mixer will be applied to the track again.

**Caution!** Before applying this function, make sure none of the track curves will be need in the future.

## Export to MAGIX Online Album

Log in to the MAGIX Online Album service and load images and music into the album to share them with your friends and acquaintances in the Internet. The assistant will lead you step-by-step through the uploading process. After the process is finished, you can access your updated MAGIX Online Album.

## Align other audio objects with this track

Use this feature to automatically align audio objects or combined objects that contain an audio or video track with the same or similar audio material. Each object must be in a separate track to do so.

- First click on the reference object that the other objects should be aligned to.
- Then select all the objects that you want to align to the reference object by holding down the Ctrl key.
- Then select the option "Align other objects with this track" from the context menu.

The objects are moved over each other so that your tracks run parallel.

**Tip:** This feature is especially useful for editing video material in the multicam mode (view page 129).

## Object properties

This function displays all the information about the currently selected objects such as file name, position on the hard-drive, tempo, etc. The Object Editor also defines the foreground and background color of every object in the projects. Depending on the type of object, the elements displayed will vary.

## General information

The name of the selected object, the fore/background color and aspect ratio for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

## Calculation of intermediate images (only for video objects)

**Interlace properties:** Normally, MAGIX Movie Edit Pro 2016 automatically makes suitable settings for this. Adjustments still need to be made to faulty video footage. If playback of the exported movie is very jittery, if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

**Deinterlace options:** Normally, the setting **Automatic interlace processing** does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Movie Edit Pro 2016 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace" (view page 370).

**Interpolate intermediate frames:** Activate this function in order to smoothen motion during playback in order to get a more fluid image.

## Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. You set the tempo with the BPM Wizard.

## Metadata (only when metadata is found in the object)

Metadata from images or AVCHD videos will appear here - if available. In this way you can find additional information about the object.

## Text objects

### Title Editor



Opens the Title editor for the selected photo, video, or title object.

Keyboard shortcut: Ctrl + T

### Disable effects

All effects applied to the text will be deactivated.



## Load title template

A dialog for loading a title template will open.

## Save as title template

This allows you to create your own templates using your title creations. The function "Load title template" enables these templates to be used again quickly.

## Save as special effect

This function saves the title with all objects that have been grouped (view page 284) with the title object. This enables you to create title templates that contain all required overlay objects.

## Convert to 3D title

The title object will now be turned into a MAGIX 3D Maker object, and a limited version of MAGIX 3D Maker will open.

## Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 167)".

## Border cropping adjustment:

Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 170)" ("Effects" menu) will be applied.

## Object properties

This function displays all the information about the currently selected objects such as file name, position on the hard-drive, tempo, etc. The Object Editor also defines the foreground and background color of every object in the projects. Depending on the type of object, the elements displayed will vary.

## General information

The name of the selected object, the fore/background color and aspect ratio for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

## Calculation of intermediate images (only for video objects)

**Interlace properties:** Normally, MAGIX Movie Edit Pro 2016 automatically makes suitable settings for this. Adjustments still need to be made to faulty video footage. If playback of the exported movie is very jittery, if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

**Deinterlace options:** Normally, the setting **Automatic interlace processing** does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Movie Edit Pro 2016 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace" (view page 370).

**Interpolate intermediate frames:** Activate this function in order to smoothen motion during playback in order to get a more fluid image.

## Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. You set the tempo with the BPM Wizard.

## Metadata (only when metadata is found in the object)

Metadata from images or AVCHD videos will appear here - if available. In this way you can find additional information about the object.

## MAGIX 3D Maker objects

### Edit settings...

A limited MAGIX 3D Maker version is opened to edit the selected object.

### Insert still image at the playback marker

MAGIX Movie Edit Pro 2016 can create a still frame of an object at the playback marker position. This is inserted for the length of the standard display time (Program settings > Video/Audio > Standard display time) in the original object.

### Motion

Lets you move video objects on the screen. See "Movement" in the "Video effects" chapter.

## Section

Places video objects in a particular part of the screen. Please read the "Video effects" chapter for more details.

### Attach to picture position in the video

This can be used to attach the current video, image, or (3D) text object to a movement path in another video object. Read more about this in the chapter "Magnetic objects (view page 167)".

### Interpolation for interlace material

Choose this option to remove interlace artifacts from your video image. If, for instance, you extract freeze frames from a video, ridge structures appear in sequences which feature movement.

### Anti-flicker filter

Choose this option for still pictures with detailed structures and high contrast. This filter reduces line flickering during TV playback.

### Border cropping adjustment:

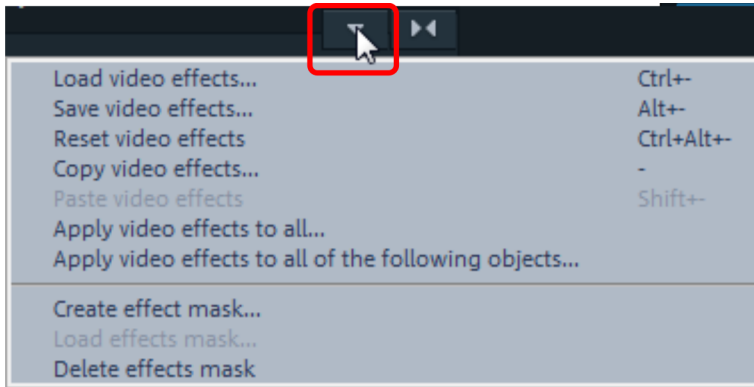
Select this option if the edges are cropped during playback on your television. Values stored in "Movie effects settings (view page 170)" ("Effects" menu) will be applied.

### Background design

These options allow you to design the background of an image using a simple editor. You can use a color or an image or video file.

## Video effects

The entries for this submenu are directly available in the Media Pool.



## Save objects as takes

The selected objects are saved in the takes directory. To use takes, please read the chapter "Saving objects separately (view page 115)" in the PDF manual.

Keyboard shortcut: Strg + F

## Fade in date as title

MAGIX Movie Edit Pro 2016 can add a time or date ("time code") to the picture material. To add a time code, right-click the video object and choose the "Fade in date as title" option from the context menu.

If you're using a DV-AVI file (a digital recording from a camcorder, for instance), the recording date will be used from the chosen place. If you're using a different file, the creation date will be used as the time code. The title editor is then opened in order to customize the entry.

In the preview monitor context menu you will also find the "Display play time" option. This will create a time code.

## Object properties

This function displays all the information about the currently selected objects such as file name, position on the hard-drive, tempo, etc. The Object Editor also defines the foreground and background color of every object in the projects. Depending on the type of object, the elements displayed will vary.

## General information

The name of the selected object, the fore/background color and aspect ratio for the object in unselected status can be changed here. Additional information is also displayed about which file the selected object points to.

## Calculation of intermediate images (only for video objects)

**Interlace properties:** Normally, MAGIX Movie Edit Pro 2016 automatically makes suitable settings for this. Adjustments still need to be made to faulty video footage. If playback of the exported movie is very jittery, if flickering occurs, or if some effects do not look how they should, you can reverse the source material frames.

**Deinterlace options:** Normally, the setting **Automatic interlace processing** does not have to be changed. The frames are processed separately and passed to the encoder when exported. If necessary, MAGIX Movie Edit Pro 2016 will perform high-quality interlacing. If "No interlace processing" is set, then it is assumed that the source material contains full frames.

For more information on interlacing, please see "Interlace" (view page 370).

**Interpolate intermediate frames:** Activate this function in order to smoothen motion during playback in order to get a more fluid image.

## Tempo/Pitch (audio objects only)

If there is information about the tempo, then the tempo can be doubled or halved here. You set the tempo with the BPM Wizard.

## Metadata (only when metadata is found in the object)

Metadata from images or AVCHD videos will appear here - if available. In this way you can find additional information about the object.

## Timeline

Marker -> Reset selected range

Deletes the range start and the range end.

Edit range

Choose whether the selected area, bordered by the start and end marker in the timeline, should be cut, copied, deleted, inserted or extracted, or do you wish that an empty space is inserted.

### Start preview rendering...

Starts Preview rendering (view page 214).

Shortcut:                      Ctrl + R

### Remove range(s) for preview rendering...

Removes preview rendering ranges. If multiple sections were defined and the playback marker is placed over one of these sections, you will be asked whether you would like to remove only this "Section" or "All".

## Problems and solutions

### File will not load

If files do not load, the following problems could be the cause:

- **Problem:** The format is not supported by MAGIX Movie Edit Pro 2016.  
**Solution:** None.
- **Problem:** You do not have the necessary user privileges.  
**Solution:** Check to make sure you have the necessary user privileges. You need reading and writing privileges in the source folder as well as in the project folder.
- **Problem:** There is not enough space on the hard drive.  
**Solution:** Check to see how much free space is available on the hard drive. If needed, delete unnecessary files to free up space or extend storage space with another storage device.
- **Problem:** The corresponding codec needs to be activated.  
**Solution:** Read the Import formats (view page 19) section.
- **Problem:** The codec used in the AVI file is not installed.  
**Solution:** Read the "General tips for AVI videos" (view page 333) section in "Appendix: Digital video and storage media".

### Choppy or uneven playback

Don't panic if the picture on your screen is choppy or uneven. The finished product will look perfect and play smoothly. Don't forget that MAGIX Movie Edit Pro 2016 calculates all effects in real time. This lets you see for yourself what sort of influence each of the effects will have on your video footage. Some effects make even today's high-performance PCs work quite hard, and often, a steady, continuous video stream is simply not possible on your PC. The final product, free from previous choppiness, is only available after rendering it to DVD or exporting it. For that reason, you should first edit the movie in its raw version without effects. The preview generally delivers a steady picture, allowing you to work quickly and quietly. Towards the end, you can add effects to your movies to give them a special touch of Hollywood!

### Problems and Remedies regarding the Auto Remix Assistant

**Problem:** The playback stutters, the metronome is suspended, the computer is overloaded... (on older computers.)

**Remedy:** We recommend changing to wave drivers ("P" key, "Playback parameter" dialog) instead of DirectSound.

**Problem:** The metronome does not work and there are no lines on the the wave-shaped display.

**Probable cause:** The material does not contain beats or the song contains a passage without beats.

**Remedy:** The song should be limited in such a way that only rhythmic passages are contained.

**Possible 2nd reason:** Inaccurate tapping or a false BPM value has been entered.

**Remedy:** Try the tempo correction buttons or tap until the "locked" condition is attained.

**Problem:** The metronome sounds inaccurately or is jerky, the lines in the wave-shaped display are irregular and thinly drawn.

## Activation problems

### The MAGIX website won't open

Check your Internet connection; you may have to use manual dial-up.

### The form for ordering via post/fax won't open

- Check that an adequate text editing program is installed and activated (for example, MS Word).

### I still haven't received an email with the activation code

- Check that your inbox isn't full.
- Have a look in your spam folder.

You can always send questions via email to our support whenever you like. Please have the following information at hand so that we can assist you as quickly and as specifically as possible.

- Complete product name
- Exact version number (to be found in the about box in the "About" menu item of the "Help" menu)
- Encoder/Decoder name
- Your user code (accessible via the "Activate via post/fax" dialog)

**Problem:** I have installed MAGIX Movie Edit Pro 2016 on a new computer, installed a new hard drive in my old computer (sound card, memory...), or installed it multiple times on the same computer. My activation code is no longer accepted!



If the program cannot be activated again after it has been activated multiple times, please contact the MAGIX customer service.

## Keyboard shortcuts

**Tip:** In Windows, keyboard settings are changed using the Alt + Shift key combination. Those who often use keyboard shortcuts can accidentally change their keyboard settings, so that they keys don't correspond to the pictured symbols. To prevent this, you can remove the check mark found by going to "Control panel" > "Regional and language options" > "Languages" tab > "Details" > "Keyboard" > "Change keyboard combination" under "Change input layout".

## Playback functions

Start / Stop	Spacebar
Increase playback speed in stages	L Shift + L
Stop playback (playback marker is stopped at the current position)	K
Reverse playback or rewind in stages	J Shift + J
Speed up fast forward	Shift + Right arrow (Hold keys down)
Speed up rewind	Shift + Left arrow (Hold keys down)
Restart beginning at playback marker	Backspace
Playback marker back to the beginning	Home
Playback marker to end	End
1 frame back	Left arrow
1 frame forwards	Right arrow
5 frames back	Ctrl + Left arrow key
5 frames forward	Ctrl + Right arrow key
Set project marker	Ctrl + Enter key
Play from range start to range end	#
Playback at current frame	+
Activate smooth playback for preview	P

## Monitors

Fullscreen video monitor	Alt + Enter key
Other resolution	Alt + G
Adjust video monitor to movie settings	Ctrl + G
Adjust video monitor to selected video	Ctrl + Shift + G
Anaglyph display	Ctrl + .
Display partially interlaced (left image first)	Alt + .
Standard (2D)	.
Side-by-side display (left picture on the left)	Shift + .

## Project window view

Enlarge section	Ctrl + Up
Shrink section	Ctrl + Down
Play movie fullscreen	Alt + Enter key
Movie overview	Shift + A
Optimize view	Shift + B
Zoom 1 frame / 5 frames	Ctrl + 1/2
Zoom 1s / 5s / 1min / 10min	Ctrl + 3/4/5/6
Entire movie	Ctrl + 8

## Move view and start marker

To next object edge	Alt + W
To previous object edge	Alt + Q
To movie start	Home
To movie end	End
To beginning of range	Ctrl + Home
To end of range	Ctrl+End
Scroll left by page	Page up

Scroll right by page	Page down
To scroll grid unit to left	Ctrl+Pg Up
To scroll grid unit to right	Ctrl+Pg Dn
To next project marker	Ctrl + Shift + PgDn
To previous project marker	Ctrl + Shift + Page up
To next snap marker	Ctrl+Alt+Pg Dn
To previous snap marker	Ctrl+Alt+Pg Up
To next scene marker	Shift + Page down
To previous scene marker	Shift + Page up
To next chapter marker	Alt+Pg Dn
To previous chapter marker	Alt+Pg Up
Go to right marker	W
Go to left marker	Q
To next empty range	<
To previous empty range	Shift + <
To next selected object	Shift + W
To previously selected object	Shift + Q
Select next object	Ctrl+W
Select previous object	Ctrl + Q

## Transport control in the Media Pool

Set start of range	I
Set end of range	O
Go to the start marker	Shift + I
Go to the end marker	Shift + O
Select range above blank space	X
Play from start to end marker	#

## Mouse Modes

Mouse mode for individual objects	6
All tracks mouse mode	7
Single track mouse mode	8
Curve Mode	9
Object stretch mode	0
Preview audio objects	Alt + 6
Context Help	Alt + F1

## Insert modes

Automatic application	1
Single-track ripple	2
Multitrack ripple	3
Exchange	4
Overwrite	5

## File menu

New project	Ctrl + N
Open project	Ctrl + O
Save project	Ctrl + S
Save project as...	Shift + S
Record audio/images/video...	R
Export to device...	H
Batch conversion	S
Burn CD/DVD -> Manually compile files...	Ctrl + B
Cleaning Wizard	Ctrl + Shift + Y
Load backup project	Ctrl + Shift + O
Exit	Alt + F4

## Manage movies

New	Ctrl + Alt + N
Remove from project	Ctrl + F4
Export	Ctrl + Alt + L

## Export movie

Export as AVI	Ctrl + Alt + A
Export as DV AVI	Ctrl + Alt + D
Export as MPEG video	Ctrl + Alt + P
Video as MAGIX video	Ctrl + Alt + M
Video as Quicktime Movie...	Ctrl + Alt + Q
Uncompressed movie	Ctrl + Alt + U
Video as MotionJPEG-AVI	Ctrl + Alt + O
Video as sequence of frames	Ctrl + Alt + E
Windows Media Export	Ctrl + Alt + V
Video as MPEG-4 video	Ctrl + Alt + G
Video as HEVC video	Ctrl + Alt + I
Audio as WAV	Ctrl + Alt + W
Export as transition	Ctrl + Alt + T
Single frame as BMP file	Ctrl + Alt + B
Single frame as JPEG	Ctrl + Alt + J
Animated GIF	Ctrl + Alt + F

## Backup copy

Copy project and media into folder	Alt + S
Copy movie and media into folder	Shift + R

## Settings

Movie	E
Program	Y
Proxy and preview rendering	Alt + R

Keyboard shortcut

Ctrl + Shift + U

## Edit menu

Undo

Ctrl + Z

Restore

Ctrl + Y

Cut objects

Ctrl+X

Copy objects

Ctrl+C

Paste objects

Ctrl+V

Duplicate objects

D

Delete objects

Del

Select all objects

Ctrl + A

### Edit

Split scene

T

Remove scene start

Z

Remove scene end

U

Remove scene

Ctrl + Del

Split movie

Alt + Y

Musical editing adjustment

Ctrl + Shift + M

### Edit range

Cut range

Shift + Del; Alt + X

Copy range

Alt + C

Delete range

Alt + Del

Insert range

Alt + V

Extract range

Shift + X

Insert empty space into selected range

C

Group objects

G

Ungroup objects

Shift + G

### Wizards

Slideshow Maker	Ctrl + M
Soundtrack Maker	Ctrl + Shift + S
Mixdown audio	Shift + D
Merge audio and video	Shift + M
Start preview rendering	Ctrl + R

### Markers

Set project marker	Ctrl + Enter key
Set chapter markers	Shift + Enter key
Set chapter markers automatically	Alt + Shift + Enter key
Delete chapter markers	Ctrl + Shift + Enter key
Delete all chapter markers	Ctrl + Alt + Enter key
Set range start	I
Set range end	O
Jump to range start	Shift + I
Jump to range end	Shift + O
Select range above blank space	X

### Move view

Mute audio tracks (Multicam)	see "Move view" (view page 321)
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## Effects menu

Movie effects settings	Ctrl + Shift + H
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## Video object effects

Scene recognition	Shift + Z
Image stabilization	Ctrl + L
Edit with MAGIX Photo Designer	Alt + Shift + D

## Video effects

Brightness	Alt + Shift + H
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Contrast	Alt + Shift + O
Gamma	Alt + Shift + G
Saturation	Alt + Shift + F
Color correction	"Alt + Shift + C"
Chroma key video level	Alt + Shift + B
Sharpness	Ctrl + Alt + S
Video effects plug-ins	Ctrl + Shift + P
Load video effects	Ctrl + -
Save video effects	Alt + -
&Reset video effects	Ctrl + Alt + -
Copy video effects	-
Paste video effects	Shift + -

## Movement effects

Position/size	Alt + Shift + I
Section	Alt + Shift + P
Camera/zoom	Ctrl + Alt + Z
Rotation/mirror	Alt + Shift + R

## Audio object effects

Normalize	Alt + N
Volume reduction	Alt + L
Audio cleaning	Alt + A
Echo/reverb	Shift + H
Timestretch/resample	Ctrl + Shift + Q
Load audio effects	Ctrl + +
Save audio effects	Shift + +
Reset audio effects	Ctrl + Alt + +
BPM wizard	Alt + Shift + K
Edit wave files externally	Alt + Z

Volume curve

Ctrl + Shift + V

## Title effects

Title editor

Ctrl + T

Load title effects

Alt + T

Save title effects

Ctrl + Shift + T

## Effects libraries

Audio and video effects

Ctrl + Shift + E

Transition effects

Ctrl + Shift + B

Title effects

Alt + Shift + L

## Window menu

Edit trimmer

N

Object trimmer

Shift + N

Mixer

M

Master audio effect rack

B

Program monitor

Shift + V

Media Pool

Shift + P

Reset window arrangement

F9

Switch to next window

Ctrl + TAB

Movie overview

Shift + A

Optimize movie view

Ctrl + F

Zoom horizontally/vertically

See project window view (view page 321)

## Help menu

Help

F1

Context help

Alt + F1

Display tooltips

Ctrl + Shift + F1

## Edit keyboard shortcut

In this dialog you can specify keyboard shortcuts for all menu function of MAGIX Movie Edit Pro 2016. This allows you to adapt existing shortcuts to your requirements or to add new ones.

The settings are automatically saved in a file upon closing the program, i.e. they will be available the next time the program is used.

The display of the entire menu tree is the key function of MAGIX Movie Edit Pro 2016.

### Add keyboard shortcut

To add a keyboard shortcut, proceed as follows:

- Look for the required menu point and select it with a simple mouse click. Under "Current menu point" the currently selected menu point will be displayed.
- Then, click on the "New keyboard shortcut" field.
- Type in the keyboard shortcut. You can also use combinations of any key with "Shift", "Alt", and "Ctrl".
- Then click on "Assign shortcut". If the shortcut should already have been assigned a corresponding warning will be displayed.

**Note!** Please do not use the space bar, "Esc", or "Insert" key ("0" in the number block), since the functions of these keys are permanently assigned in MAGIX Movie Edit Pro 2016 and can not be changed.

### Keyboard shortcut list

**Reset:** Activates all preset shortcuts again.

**Load:** Previously saved shortcuts are loaded and activated again.

**Tip:** MAGIX Movie Edit Pro 2016 offers additional presets for those switching from other programs. These settings make it considerably easier to switch to MAGIX Movie Edit Pro 2016.

If you have used MAGIX Video Pro X3 and want to use its keyboard shortcuts, load Video\_Pro\_X3.ssc.

**Warning:** The current settings will be overwritten during loading! Save your current keyboard shortcuts in advance if you would like to keep them.

**Save:** The current keyboard shortcuts can be saved after naming the file appropriately.

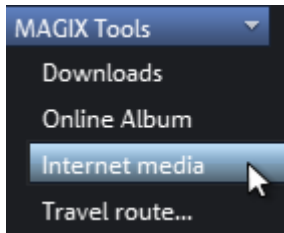
**List:** This button opens a window where a complete list of current keyboard shortcuts appears. The included Copy button can be used to copy this list to the Windows clipboard and then edit and print it using a text editor.

# Integrated browser

The integrated browser offers many useful functions that help you collect material for using in your project. All kinds of media can be collected – images, videos, sound or simply text can be all integrated using the built-in browser with great results.

**Tip:** You must have an Internet connection to use the full range of options offered by the integrated browser.

## Open browser



The integrated browser is opened by clicking on the "Internet media" button in the Media Pool ("Import" tab).

## Navigation in the browser



**One page back:** Switches to the previous page.



**One page forward:** Switches back to the page before the "One page back" button was pressed.



**Stop:** Stops loading the selected page.



**Reload:** The current page will be reloaded.



**Home:** Returns to the home page.

In the address header, next to the navigation buttons, you can simply enter an Internet address like <http://www.magix.com>. Press the enter button and the corresponding page will be loaded.

## Loading Internet media

The buttons described here are used to collect and load media directly from the Internet into the current film. The corresponding functions can be found in the context menu of the browser.



**Save selected text:** The selected text will be saved. It can then be edited using the title editor (view page 130).



**Start screen capture:** Opens the capture dialog for starting screen capture.



**Download selected images:** The selected images will be saved to your computer.



**Import screen capture of the opened Internet page:** The loaded Internet page will be saved as an image file.



**Start audio recording:** A dialog for audio recording opens.

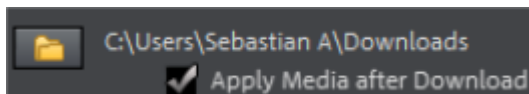
**Hint:** For recording from the Internet, it is important that the sound card is selected as the sound source.

## Accept media after download

This option makes sure that the downloaded media are loaded into the current movie right away.

## Define the path for saving Internet media.

To define the path for saving Internet media, simply click on the folder symbol and navigate to the desired folder. Confirm your selection with OK.



## Annex: Digital Video and Data Storage

### MPEG Compression

MPEG means "Moving Picture Experts Group" and defines a workgroup which cooperates with the International Standards Organization (ISO) as well as the international Electro Technical Commission (ETC) to develop standards for video and audio coding.

Generally, the graphic data rate of the digital video standard is 167 megabits per second, which, when not compressed, requires a far higher storage capacity than a DVD can offer. A one-sided DVD 5 with 4.7 GB storage capacity is enough for 4 Minutes. For this reason, the available pictorial material must be effectively compressed – a function which is achieved with the MPEG procedure.

This procedure is based on the simple fact that up to 96% of digital video data consists of repetition and can be compressed without visible degradation of the pictorial quality.

Each MPEG compression is, however, a data reduction and as such connected with information loss. If the video consists of very extensive details, or if the content changes very fast, then the picture may blur (dependent on the strength of the compression and the quality of the encoder).

Errors can also result from so-called compression artifacts such as small color defects or images that are too dark.

At average compression rates under 3 megabits per second it is probable that you will notice reduced quality. At rates around 6 megabit per second the degradation in quality becomes almost invisible.

### General notes on AVI videos

The AVI format (**A**udio **V**ideo **I**nterleaved) isn't actually a proper video format! Rather, it is a so-called "container", where the conventions for transferring audio and video files to the program are only loosely defined. The codec (**c**oder/**d**ecoder) actually defines what storage format is used. A codec compresses audio/video data into its own unique format which can only be read by the codec itself and is decoded when the film is played.

In concrete terms, a computer-generated AVI file **can only** be loaded by and played on a different computer if the same codec is installed on it.

Many codecs (e.g. Intel Indeo<sup>®</sup> video) have now become standard components of the Windows installation. Others are not standard. If you are generating an AVI file for future play on another computer using one of these codecs, you should first install this codec on the other PC. The best method available is to copy the codec installer to your export directory and burn it every time you create a video disc (slideshow disc) for play on computers.

You may encounter some problems when using older video editing cards with codecs which only function with the card's hardware. Such AVIs can **only** be used on the computer which was used to create them. Try to avoid using this kind of codec.

## Overview of the different disc types

MAGIX Movie Edit Pro 2016 supports numerous disc types, and these depend on whether you want to burn a movie or slideshow and which disc type you are using (CD, DVD, or Blu-ray Disc<sup>TM</sup>), or the type of playback device or quality required.

The table below will explain which disc types are best for different cases, the differences in quality, and how much storage space each format requires.

More detailed information, consult the chapters concerning the individual disc types.

Disc type	Data storage medium	Menu	Quality	Length (optimal quality)
DVD	DVD	Yes	***	98 min.
Blu-ray Disc (view page 336)	Blu-ray Disc	Yes	*****	110 min.
AVCHD (view page 336)	DVD/Blu-ray Disc	Yes	*****	30 min./DVD 160 min./Blu-ray Disc

\* The display time for some DVD players can be determined in this menu. The amount of image material that can be put onto a CD or DVD depends on the sizes of the picture files.

## Digital Versatile Disc (DVD)

### Quality

Featuring a resolution of 720 x 576 (PAL) and encoded with MPEG-2, 25 frames per second provides very good results.



## Writable data storage formats

The recordable DVD market is currently split into three types: "DVD-RAM", "DVD+RW", and "DVD-RW".

**DVD-R/+R:** This medium may only be written to once. The DVD-R may be specified with file structures for DVD video, DVD audio, or DVD-ROM.

**DVD +RW:** +RW drives allow re-writable DVDs to be created which may be read by almost any commercial DVD-ROM or DVD player. The companies involved are mainly Philips, Sony, HEWLETT PACKARD (as well as Ricoh, Yamaha and Mitsubishi).

**DVD-RW:** This is a write/erase DVD technology promoted by Pioneer and Sharp. This format was developed by the Pioneer company and should be compatible with existing DVD players.

**DVD-RAM:** DVD-RAM technology is based on either Phase Change, MOs, or hard disks, etc. and is now almost 100% incompatible with all available players.

Due to the small storage capacity and incompatibility with DVD players, setting on this standard is not recommended.

**Note:** MAGIX Movie Edit Pro 2016 supports DVD±R and DVD±RW, but not DVD-RAM.

**Blank discs:** Single-sided recordable blank discs featuring a capacity of 4.7 GB and a duration of approx. 2 hours.

## Copy Protection

**Macrovision (APS):** The movie industry claims that even DVD-ROM drives and decoders or diagram cards with composite outputs or s-video outputs must support the Macrovision analog copy protection (APS). Only some older DVD players do not possess APS.

APS adds additional signals to a DVD's stored graphical data. The data is almost unchanged. These supplementary signals disturb the synchronization and the automatic recording regulation of most video recorders to prevent recording of the video. They are not noticeable on the television or the monitor, however.

**Content Scrambling System (CSS):** CSS prevents saving and duplication of DVD video tracks to hard disk. The VOB streams of DVDs without CSS can otherwise (like other video files) be loaded via the Import Video button

There are further types of copy protection besides APS and CSS which ensure that retail DVDs cannot be copied without distortion

## Blu-ray Disc

Since early 2008, Blu-ray Discs are viewed as successors to DVDs and offer especially high storage capacity of up to 27 GB in a single layer (double-layer up to 54 GB) with very few write errors.

The term Blu-ray Disc comes from the blue color of the laser. Because a color cannot be registered as a trademark, the letter "e" was removed from the word "blue".

The high storage capacity of the Blu-ray Disc suits high definition videos and slideshows in high quality perfectly, since these are characterized by large file sizes (depending on material approximately 40 MB/sec) and very high memory use. The MPEG-2 codec is used to create video.

Companies that were involved in developing Blu-ray technology have united themselves into the Blu-ray Disc Association (BDA).

### Blu-ray Discs come in three varieties:

- Only readable **BD ROM** (comparable to DVD video),
- rewritable **BD-RE** (comparable to DVD±RW or DVD-RAM),
- and as a disc that can be written to only once **BD-R** (comparable to DVD±R).

## AVCHD disc

Use this format to create a high-resolution video. You can burn Blu-ray (BD-R/RE) blanks as well as conventional DVD±R/RWs. In contrast to Blu-ray Discs (view page 336), MPEG-4/AVC codec (view page 356, view page 344) is applied as the video format, which requires less memory at a comparable image quality.

### Compatibility

**AVCHD disc on Blu-ray blank:** Since this is a BD-conformant format, the disc created can be played back in any conventional Blu-ray player. Playback problems can almost always be traced to incompatibilities between Blu-ray blanks and Blu-ray players. In this case, consult the instructions for your Blu-ray player or ask the manufacturer which blanks are compatible with the device.

**AVCHD disc on DVD blank:** The DVDs created with AVCHD video are not supported by all Blu-ray players. The behavior of the devices is quite different. Normal DVD players cannot replay AVCHD discs, since the AVC format is not supported.

For this, the playback device needs to be able to support the following formats:

- AVCHD disc: AVCHD 1.0
- AVCHD disc with 50p frames: AVCHD 2.0

**Note:** To import and export AVC(HD) and MPEG-4 files, the MPEG-4 codec must first be activated (view page 338). A dialog will open if the codec is required.

## Activate codecs

Special encoders/decoders are needed to use and generate various file formats.

### Why is activation required?

To import (decode) or export (encode) certain video and audio formats you will require a specific codec to be able to read in and export these formats. As soon as a corresponding decoder or encoder is needed, MAGIX Movie Edit Pro 2016 will notify you and ask you if you would like to activate it.

The integration of decoders and encoders from third parties into programs usually costs the software publisher money. These codecs are therefore added to MAGIX programs via a voluntary activation, which may be free or require a charge for expensive specialist codecs. It is therefore possible for MAGIX to provide an optimum price/performance ratio for your software in the future.

### Which codecs does this pertain to?

The following codes are automatically activated when needed:

- MPEG-2/MPEG-4 basic (standard)

These codes are needed for importing and exporting MPEG-2 and MPEG-4 videos. The codecs are activated simultaneously and are free.

Use cases:

- MPEG-2: MPEG-2 import and export as well as burning DVDs and Blu-ray discs.
- MPEG-4: MPEG-4 import and export as well as burning AVCHD discs.

- Audio expansion package

This package is necessary for certain audio file formats, including but not limited to: AC3 with stereo and 5.1 Surround Sound. Activation is free.

You can also activate the following codecs:

- MPEG-2 (MainConcept)

This codec can also be used for MPEG-2 (Standard). Activation is free (view page 339).

- MPEG-4 (MainConcept)

This codec can also be used for MPEG-4 (standard). Activation is fee-based (view page 339).

## Activate MPEG-2 (MainConcept) for free

### Requirement

- MAGIX Movie Edit Pro 2016 is already registered in your name.

**Note:** If you have not registered MAGIX Movie Edit Pro 2016, you can do this at any time.

### Activation

1. Open the menu "Help" > "Install additional programs".
2. Select "MainConcept MPEG-2 codec".

The codec will be activated. MAGIX Movie Edit Pro 2016 checks the registration data, downloads the corresponding codec and installs it. In some cases, MAGIX Movie Edit Pro 2016 needs to be restarted in order to use the codec.

**Note:** After successfully activating the MainConcept codec, you need to specify under Program settings that this is the preferred codec to be used.

## Activate MPEG-4 (MainConcept) (fee-based)

### Requirement

- MAGIX Movie Edit Pro 2016 is already registered in your name.

**Note:** If you have not registered MAGIX Movie Edit Pro 2016, you can do this at any time.

### Instructions

1. Open the menu "Help" > "Install additional programs".
2. Select "MainConcept MPEG-4 codec".

MAGIX Movie Edit Pro 2016 will check to see if the codec has already been licensed to another MAGIX software and will use that license if this is the case.

If the codec has not already been licensed, then the fee-based activation will continue.

The activation dialog will appear.

3. Click on "Activate online".

Your Internet browser will open.

If you have not already activated MAGIX Movie Edit Pro 2016, a website for registering MAGIX Movie Edit Pro 2016 will open.

You will then be forwarded to a website where you can request the corresponding activation to be carried out.

4. Enter the requested information and complete the order.

Normally you will receive the activation code within a few minutes. In some cases, this can take longer.

**Note:** In the event the activation code does not arrive after a longer period of time, check to make sure the e-mail was not accidentally sent to your spam folder.

5. Copy the activation code from the e-mail.
6. Paste the activation code into the input field in the activation dialog.
7. Click on "Activate..."

The codec will be activated. MAGIX Movie Edit Pro 2016 checks the registration data, downloads the codec and installs it.

In some cases, MAGIX Movie Edit Pro 2016 needs to be closed and restarted in order to start using the codec.

**Note:** After successfully activating the MainConcept codec, you need to specify under Program settings that this is the preferred codec to be used.

## MPEG-2 encoder settings (Standard)

In the "Advanced Settings" you can make detailed adjustments to the MPEG-2 data flow.

The advanced settings are divided into "Video", "Audio", and "Multiplexer".

### Video

**Tip:** For more information read the MPEG glossary (view page 368). Many of the terms used here are explained in detail in the glossary.

**Bit Rate Mode:** The bit rate indicates how much data is saved in the video per second (at playback speed). This makes the bit rate the deciding parameter with regard to the file size and quality of the video to be encoded. A higher bit rate means better quality, but also a larger file size.

- **Constant:** The exact value entered in "Average bit rate" is applied which enables precise calculation of the video size.
- **Variable:** The value entered in "Average bit rate" is used as an approximate guideline for the value applied to the video. This means that the size of the video can only be estimated.
- **Constant quantization parameter:** This parameter ensures that the video quality remains the same throughout.

**Average bit rate (kbps):** The bit rate entered here is used as the average rate applied to the video. The size of the video to be exported can only be approximated.

**Maximum bit rate (kbps):** This is the maximum bit rate for the video stream, i.e. the maximum number of bits the decoder is allowed to transfer per second. This parameter only takes effect in the "Variable" bit rate mode.

**CPB (Coded Picture Buffer):** The entered value specifies the maximum amount of storage space for an encoded frame. Higher values can improve quality, but might also cause problems during export. If export is aborted, lower this value. The setting "0" means that the encoder has determined the disk space.

**Maximum GOP length:** The maximum GOP (view page 370) length is determined here. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video.

**Tip:** A good rule of thumb is to enter the frame rate as the GOP length.

**GOP structure:** The GOP structure is the sequence of the various frames. At the beginning of a GOP there is an I-Frame, at the end there are several B-Frames, followed by a P-Frame (view page 372). The sequence of B-Frames und P-Frames repeats until the end of the GOP.

**Example:** A GOP with a length of 20 and the "IBBP" structure will look like this:

<b>No.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Frame</b>	I	B	B	P	B	B	P	B	B	P	B	B	P	B	B	P	B	B	P	B

**Profile:** Profiles define the encoder properties that are supported.

- **SIMPLE:** Intended to be used as the basic profile for applications with limited computational power, e.g. video conferences or mobile phone videos. This profile does not allow B-Frames, which first and foremost means more data traffic, but contributes to better reliability.
- **Main:** This profile was originally intended for the broadcast industry and for backup purposes. It has become less popular since the development of the "High Profile" for this purpose.
- **HIGH:** This profile is used for broadcast and backup applications and is also sometimes used in the HDTV industry (**H**igh **D**efinition **T**elevision). This profile is used for Blu-ray discs.

**Note:** You should only change this setting when there are problems playing back the generated video.

**Level:** MPEG 2 defines various levels. The level determines which bit rate and resolution are possible for the video. With the "Auto level" option, the encoder determines the level automatically on the basis of the set video format, the specified bit rate and the profile.

**Coding quality:** This is the easiest way to set the ratio between coding duration and quality. Select the setting which best suits your needs.

**Hardware acceleration:** MAGIX Movie Edit Pro 2016 supports the use of "Quick Sync Video" hardware acceleration. This can noticeably speed up the encoding process.

**Smart Copy:** If this option is activated, unedited MPEG 2 material with hard cuts is transferred without changes. This drastically accelerates the encoding process. The transfer always takes place on the GOP borders is not frame-precise.



**HRD (Hypothetical Reference Decoder):** When this option is activated, a virtual decoder checks the data stream for compatibility with the video standard during the encoding process. This ensures that the generated video is compatible with various playback devices, but it also slows down the encoding process.

## Audio

**Sample rate (Hz):** Here you can set the sample rate for audio encoding. For DVDs the standard is set to 48 kHz. If you change the settings here, it may result in not being able to play back the sound or the entire video.

**Channels:** Determines the number of audio channels.

- Mono: 1 channel, mono sound
- Stereo: 2 channels, one for left and one for right.
- Surround: 6 channels (5.1)

**Bitrate (kBit/s):** The desired bit rate is entered here.

**Audio encoder:** This is where you define how audio material will be coded, or whether it should be written to the exported file as an uncompressed PCM data. If PCM is used, you can no longer adjust sample rate and bit rate.

## Image settings

**Interlace:** Specifies whether the video is coded in frames or fields (in interlaced scanning, also "Interlaced").

- **Progressive**  
The video is coded in frames.
- **Bottom field first**  
The video will be interlaced. The lower lines (Bottom field) are used for the first field and upper lines for the second.
- **Top field first**  
The video will be interlaced. The upper lines (Top field) are used for the first field and the lower lines for the second.

## MPEG-4 encoder settings (standard)

In the „Advanced Settings“ you can make detailed adjustments to the MPEG-4 data flow.

The advanced settings are divided into "Video", "Audio", and "Multiplexer".

### Video

**Note:** The preset values and status of the control element (locked/unlocked) depend on the selected export preset.

**Bit Rate Mode:** The bit rate indicates how much data is saved in the video per second (at playback speed). This makes the bit rate the deciding parameter with regard to the file size and quality of the video to be encoded. A higher bit rate means better quality, but also a larger file size.

- **Constant:** The exact value entered in "Average bit rate" is applied which enables precise calculation of the video size.
- **Variable:** The value entered in "Average bit rate" is used as an approximate guideline for the value applied to the video. This means that the size of the video can only be estimated.
- **Constant quantization parameter:** This parameter ensures that the video quality remains the same throughout.

**Average bit rate (kbps):** The bit rate entered here is used as the average rate applied to the video. The size of the video to be exported can only be approximated.

**Maximum bit rate (kbps):** This is the maximum bit rate for the video stream, i.e. the maximum number of bits the decoder is allowed to transfer per second. This parameter only takes effect in the "Variable" bit rate mode.

**CPB (Coded Picture Buffer):** The entered value specifies the maximum amount of storage space for an encoded frame. Higher values can improve quality, but might also cause problems during export. If export is aborted, lower this value.

**Maximum GOP length:** The maximum GOP (view page 370) length is determined here. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video. A general rule: The shorter the GOP, the more compatible the generated video file.

**Tip:** A good rule of thumb is to enter the frame rate as the GOP length.

**GOP structure:** The GOP structure is the sequence of the various frames. At the beginning of a GOP there is an I-Frame, at the end there are several B-Frames, followed by a P-Frame (view page 372). The sequence of B-Frames und P-Frames repeats until the end of the GOP.

**Example:** A GOP with a length of 20 and the "IBBP" structure will look like this:

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Frame	I	B	B	P	B	B	P	B	B	P	B	B	P	B	B	P	B	B	P	B

**Profile:** Profiles define the encoder properties that are supported.

- **Main:** This profile was originally intended for the broadcast industry and for backup purposes. It became less popular when "High Profile" was developed for exactly these applications.
- **HIGH:** This profile is used for broadcast and backup applications and is also sometimes used in the HDTV industry (**H**igh **D**efinition **T**ele**v**ision). This profile is used for Blu-ray discs.

**Note:** You should only change this setting when there are problems playing back the generated video.

**Level:** H.264 defines different levels. The level determines which bit rate and resolution are possible for the video.

With the "Auto level" option, the encoder determines the level automatically on the basis of the resolution of "AVC preset" video formats, the set bit rate and the profile.

**Coding quality:** This is the easiest way to set the ratio between coding duration and quality. Select the setting which best suits your needs.

**Hardware acceleration:** MAGIX Movie Edit Pro 2016 supports the hardware acceleration "Quick Sync Video" for AVCHD exports, AVCHD and Blu-ray discs. This can noticeably speed up the encoding process.

**Smart Copy:** If this option is activated, unedited AVCHD material with hard cuts is transferred without changes. This drastically accelerates the encoding process. The transfer always takes place on the GOP borders is not frame-precise.

**HRD (Hypothetical Reference Decoder):** When this option is activated, a virtual decoder checks the data stream for compatibility with the video standard during the encoding process. This ensures that the generated video is compatible with various playback devices, but it also slows down the encoding process.

**Interlace:** Specifies whether the video is coded in frames or fields (in interlaced scanning, also "Interlaced").

- **Progressive**

The video is coded in frames.

- **Bottom field first**

The video will be interlaced. The lower lines (Bottom field) are used for the first field and upper lines for the second.

- **Top field first**

The video will be interlaced. The upper lines (Top field) are used for the first field and the lower lines for the second.

## AAC audio

**Note:** The preset values and status of the control element (locked/unlocked) depend on the selected export preset.

**Sample rate:** Here you can see the sample rate for audio encoding.

**Channels:** Determines the number of audio channels.

- Stereo: 2 channels, one for the left side and one for the right.
- Surround: 6 channels (5.1)

**Bitrate (kBit/s):** The desired bit rate is entered here.

**Audio encoder:** Shows which audio encoder is being used.

## Image settings

**Interlace:**

- **Bottom field first**

The video will be interlaced. The lower lines (Bottom field) are used for the first field and upper lines for the second.

- **Top field first**

The video will be interlaced. The upper lines (Top field) are used for the first field and the lower lines for the second.

## Multiplexer

**Streamable:** The generated video is suitable for live playback on websites.

**HTML Start file:** MAGIX Movie Edit Pro 2016 generates an HTML file with a video player that opens the HTML file and plays it back.

## HEVC encoder settings

In the "Advanced Settings" you can make detailed adjustments to the HEVC data flow.

The advanced settings are divided into "Video", "Audio", and "Multiplexer".

Below is an explanation of all the settings that can be changed.

### Video

**Average bit rate (kbps):** The bit rate entered here is used as the average rate applied to the video. The size of the video to be exported can only be approximated.

**Maximum bit rate (kbps):** This is the maximum bit rate for the video stream, i.e. the maximum number of bits the decoder is allowed to transfer per second. This parameter only takes effect in the "Variable" bit rate mode.

**CPB (Coded Picture Buffer):** The entered value specifies the maximum amount of storage space for an encoded frame. Higher values can improve quality, but might also cause problems during export. If export is aborted, lower this value.

**Maximum GOP length:** The maximum GOP length is determined here. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video.  
A general rule: The shorter the GOP, the more compatible the generated video file.

**Tip:** A good rule of thumb is to enter the frame rate as the GOP length.

**GOP structure:** The GOP structure is the sequence of the various frames. At the beginning of a GOP there is an I-Frame, at the end there are several B-Frames, followed by a P-Frame. The sequence of B-Frames and P-Frames repeats until the end of the GOP.

**Level:** HEVC defines various levels. The level determines which bit rate and resolution are possible for the video. With the "Auto level" option, the encoder determines the level automatically on the basis of the set video format, the specified bit rate and the profile.

**Coding quality:** This is the easiest way to set the ratio between coding duration and quality. Select the setting which best suits your needs.

## Audio

**Sample rate:** Here you can see the sample rate for audio encoding.

**Bitrate (kBit/s):** The desired bit rate is entered here.

## Multiplexer

**Streamable:** The generated video is suitable for live playback on websites.

**HTML Start file:** MAGIX Movie Edit Pro 2016 generates an HTML file with a video player that opens the HTML file and plays it back.

# MPEG-1/2 Encoder Settings (MainConcept)

## General settings

**MPEG type:** Here you can set the output type of the created MPEG file. You can either adjust the encoder settings freely, for instance, to export your video in the corresponding format, for further use in other programs or on your own website.

**Video format:** Automatically specifies the video format, aspect ratio and frame rate (see video settings (view page 351)). You can choose between PAL or NTSC.

**Interlace mode:** The movie is encoded interlaced (i.e. in two half-screens, so-called fields). This is essential for later playback on TV screens. If you want to view the exported movie on your PC only and like a "cinemascope" view, you can also encode by frame (progressively). Some video projectors also support playback of progressively encoded image material. See Interlace (view page 370).

**Bit rate:** The bit rate determines the memory requirements of the completed video. The amount of data available can be used differently for different display modes. 20 MB can be 4 seconds of DVD Video or 5 minutes of Internet streaming at the thumbnail size. The quality of an MPEG video is measured by the "width" of the created "data stream", the bit rate. This is the amount of the transmitted data per time unit; it is stated in kBit/s or bit per second.

**Quality:** Determines the quality of the encoding process, to be more precise, the quality of the motion estimation (view page 368). The higher the quality, the better the finished video will look; however, encoding will take considerably longer. The preset value of 10 is a good compromise between speed and quality.

**Smart Rendering:** With Smart Rendering you can considerably reduce the encoding processing strain for MPEG files. With the production of MPEG files, only those parts of the movie that were changed in the program (e.g. by video cleaning or effects) are re-encoded. Please note: The MPEG files contained in the movie **must** have the same format, i.e. the bit rates (variable or constant), image resolutions and video formats must match.

**Smart copy (quick, GOP-precise copying):** This special mode of Smart Rendering enables MPEG material to be transferred without having to encode it for the target medium, thereby increasing the encoding speed manifold. The video material cannot appear to have been altered in any way, only hard cuts (without fades) are permitted. These won't be executed precisely to the frame, but rather take place at the next GOP borders. For this reason, cuts should be set somewhat more generously.



To burn DVDs in original 5.1 surround sound without having to re-encode, this option **must** be activated.

**Conclusion:** Displays an overview of all settings of the encoder.

**From file:** Allows you to rip the necessary settings from an existing MPEG file. This can be useful, for instance, if you want to merge MPEG files together without re-rendering via Smart Rendering.

## Video settings

**Frame rate:** PAL requires 25 frames/sec, NTSC 29.97 frames/sec. Please note: encoding NTSC material as PAL or vice versa may be possible; however, it will result in jittery images.

**Aspect ratio:** Lets you set the image side or pixel ratio. With MPEG-2 the image format is displayed as image ratio; correspondingly there is 1:1 (square screen, not recommended), 4:3 (regular video), 16:9 (widescreen) and 2.21:1 (cinemascope). This applies irrespectively of the selected video format.

For MPEG-1 the pixel format is set; the options here are 1:1, CCIR601 (represents normal 4:3 video) for 625 lines = PAL and 525 lines = NTSC and the same for 16:9.

The option **Auto** is set as default. Here you can adjust the Movie settings (view page 284) accordingly.

**Resolution:** Width and height of the video corresponds with the settings in the export dialog.

**GOP structure:** Here you can change the settings of the GOP (view page 370) sequence, i.e. the number of P frames and B frames per I frame within a GOP. Please note that the total length of the GOP must not exceed 15 frames, which corresponds to the default setting (1 I frame + 4 P frames + 5\*2 B frames = 15 frames).

However, you can reduce the length of the GOP sequence (while compromising the image quality at the same bit rate). This speeds up the encoding process considerably as the motion estimation while encoding P and B frames requires high CPU performance. The speed of decoding, i.e. playback, is also increased.

If I frame is set to 1, each frame is an I frame. If the value is set higher, the setting describes the total length of the GOP.

**Auto GOP:** Closed GOPs do not contain relations to frames from subsequent GOPs. MPEGs where all GOPs are closed, make MPEG editing easier as the I frames only can

be edited alone if the GOP is closed. Auto GOP closes GOPs at scene changes, whereby two different and complex procedures ("fast" and "VCSD") are used.

### Bit rate mode

In "constant bit rate" mode a bit rate that constantly remains the same is used. With a constant bit rate the full power of MPEG compression can not be used properly as bandwidth for non-moving scenes is lost.

"Variable bit rate" mode attempts to adjust the available storage space to the requirements of the video you want to encode. The actual bit rate fluctuates around a mean value. During calm sections of the video it may drop to a minimum value, if there are movements in the scene it may rise to the maximum value. There are two different regulation processes (mode 1 and mode 128).

## Advanced video settings

**MPEG profile and level:** The MPEG-2 standard defines various "profiles" and "levels". For creating DVDs you can use the "Main profile & Main level". The high profile adds additional properties to the data stream, such as the option of displaying an image at a reduced resolution for restricted transmission quality (SNR scalable profile) or locally scaled, for instance an HDTV data stream on a standard TV set). The 4:2:2 profile is used if the image data is to be encoded for alternative chroma scanning (view page 369). However, these profiles are only supported by very few encoders, mainly for professional use.

The different levels define the restrictions to the image resolution and the maximum data rate. Low level can only reach a reduced resolution (352 x 288 = CIF), high level or High-1440 enables encoding in HDTV format.

**Estimate movement:** These parameters are controlled by the quality controller (see General Settings).

### Other

**Noise sensitivity:** This factor defines how sensitive the encoder will react to noise in the source material. If your source material only contains little noise (digital recordings, computer animations or already de-noised by video cleaning), you don't have to change the default value 4, or you can even reduce it in order to increase the quality further.

However, if you want to encode noisy material, a factor that is too low will considerably increase the encoding time without producing higher quality. For an unedited analog video you can increase the factor to 8-14.

**Noise reduction** (click on noise sensitivity): A noise filter is used which has adjustable settings from 1-31.

### Advanced parameters

Additional expert settings are available in the tree to the right of the window. These should only be changed by experienced users. They have been optimized for general applications to such an extent that adjustment is only necessary in exceptional cases.

## Audio settings

**Audio type:** You can use MPEG Layer 1/2 audio or "AVCHD audio track". Select "No audio" in the export dialog.

**Sample rate:** You can set a sample rate of 32, 44.1 or 48 kHz for the audio track. VCDs and SVCDs require 44.1 kHz, DVDs require 48 kHz. To reduce the size of audio data it is recommended to lower the bit rate instead of the sample rate.

**Mode:** You can use Mono, Stereo, Joint Stereo or Dual Channel. If the audio type "AVCHD audio track" is used, "5.1 surround" mode may also be selected.

- Dual Channel enables encoding of two mono tracks (e.g. different language sound tracks) that can be switched during playback.
- Joint Stereo is an optimized stereo encoder which takes advantage of the fact that the signal of both stereo channels is largely identical. Use Joint Stereo if you can only use small audio bit rates but still require a stereo signal.
- 5.1 Surround is available only for surround projects for burning DVDs. During this process, all 6 surround channels in the audio stream are encoded.

**ATTENTION!** For surround projects, "AVCHD audio track" should be selected in "Audio type" and "5.1 surround sound" in "Mode".

**Bit rate:** Here you can set the bitrate of the audio signal. The higher the bitrate, the better the playback quality. VCD requires 224 kBit/s, and for SVCDs and DVDs you can select a value between 384 kBit/s and 448 kBit/s.

## AVCHD audio track details

**Note:** These functions are available only in the "5.1 Surround" mode.

**Dialog normalization:** Here you can set the level of spoken dialogs in dB. This value will be used to adjust the total volume of DVD movies and different programs that

can be received by the DVB. To do this, you must first measure the volume of spoken dialogs in your movies. The values 1 to 31 correspond to volume levels of -1 to -31 dB.

**Note:** Use the mixer's peakmeter to set the volume level. This process produces only approximate results because the exact measurement requires a mean value, which cannot be easily measured with MAGIX Movie Edit Pro 2016.

The displayed value serves also as a reference value for "Dynamic Range Control". Areas that are softer than speech will be made louder, and louder areas will be made softer to avoid overmodulations.

Calculation example for "Normalization dialog"

Let's assume you have created a movie in MAGIX Movie Edit Pro 2016 and dubbed it in Samplitude/Sequoia. After the transfer of the surround tracks from Samplitude/Sequoia you measure the volume of the spoken dialog.

The maximum modulation level for Dolby® Digital audio is 31 dB over the set reference value for surround stereo systems. For this reason the normalization dialog has a value range of 1-31, describing the volume of the spoken dialog in dB.

If you have spoken dialogs with a volume level of, for example, -21 dB, you should enter value "21" into the normalization dialog, so that the total volume can be lowered to the reference level set in the surround decoder or amplifier. This is usually -31 dB below the digital uppermost level.

Measured volume level in spoken dialogs	Value set in "Normalization dialog"	Damping in Dolby® Digital audio stream
-25 dB	25	-6 dB
-30 dB	30	-1 dB
-31 dB	31	0 dB
-5 dB	5	-26 dB

**Note:** The set value does not directly alter the created audio material, but simply delivers information about the ideal damping to the surround decoder, making sure that the dynamic range is not restricted.

**Background:** Action-filled movies have larger volume differences between spoken dialogs and loud scenes (for example during explosions), and because of this, their dialogs are softer than in quieter films, which can be modulated higher.

**Surround mix level/Center mix level:** These settings lead to an additional damping of the surround channels and the central channel. Both settings are preset to -3 dB.

**LFE channel:** Here you can switch off the LFE channel (**L**ow **F**requency **E**ffect), for example if you want to eliminate undesirable rumbling sounds in the low frequency range. Normally you should leave this option activated.

**LFE filter:** The LFE filter is a low pass filter, which lets through only the lowest frequencies. If you are dubbing a project in Samplitude/Sequoia, and have applied the LFE filter, you can switch off this function here, since this filtering has already been accomplished.

## MPEG-4 encoder settings (MainConcept)

MPEG-4 is actually a collection of highly efficient codecs for video and audio based on the MPEG standard. Compared to MPEG-2, the same quality can be achieved with smaller file size.

**Recommendation:** Check the presets that the program offers to find the right preset for each application and the right playback device. These presets are optimized for typical applications.

The advanced settings in "**Advanced**" are divided into "Video", "Audio", and "Multiplexer".

Under "**Video**" there is a choice between "MPEG-4 Simple" (MPEG-4 Visual/MPEG-4 Part 2) (view page 362) and "MPEG-4 H.264" (AVC/MPEG-4 Part 10) (view page 357).

Depending on the purpose of application of the material to be exported, either one of these encoder settings can be selected for compressing the video material. Refer to the manual for the playback device to find out which encoder is supported.

Under "**Audio**", "AAC" (view page 365) is preset. If you have chosen an AVCHD transport stream from the presets, "AVCHD audio track" will be available.

Under "**Multiplexer**" you can adjust certain presets, e.g. container format and streaming properties. This is only recommended for experts.

The option "Export as website" also creates an HTML page in an integrated Flash player that can play back the video created. Read the topic "Embed Flash videos into your own web site".

**Tip:** First, check if there is a suitable preset in the export dialog for your purposes. Advanced users can make specific adjustments to these three areas using the advanced settings.

## Video codec

### MPEG-4 H.264

The MPEG-4 H.264/AVC codec is suitable for all types of material; however, it requires relatively higher CPU power for later decoding.

In the advanced encoder settings of the AVC encoder the "Generic" options in "Main Settings" are mainly interesting.

The AVC preset and video format can be adjusted here. For instance, if DVD quality is desired you should select "DVD". The video format should be selected specific to the country so that the material can be played on the devices most commonly available in these countries. For instance, you should select PAL for Germany, SECAM for France and NTSC for the US.

### MVC

MVC: Multiview Video Coding (MVC) is an expansion for stereoscopic applications. Activate this to export MVC files.

**Note:** MVC is only available in the Video deluxe Pro versions.

### 2-pass

The video to be exported will be encoded twice. The first run-through serves to calculate the streaming rate for each section (for video this is per frame). The second run-through is when the actual video is created with the streaming rates that were calculated in the first run-through. The result is an improved image quality, but encoding takes place approximately twice as long.

### Smart Render and Smart Copy

**Smart Render** lowers the demand on the encoder for AVCHD material. In the production of AVCHD files, only those parts of the movie that were changed in the program (e.g. by video cleaning or effects) are re-encoded. Please note: The AVCHD files contained in the movie **must** have the same format, i.e. the bit rates (variable or constant), audio formats, image resolutions and video formats must match.

The Smart Rendering special mode „**Smart Copy**“ enables AVCHD material to be transferred without having to encode it for the target medium which greatly increases the encoding speed. The video material cannot appear to have been altered in any way, only hard cuts (without fades) are permitted. These won't be executed precisely

to the frame, but rather take place at the next GOP borders. For this reason, cuts should be set somewhat more generously.

## Hardware acceleration - CUDA, Quick Sync Video, OpenCL

MAGIX Movie Edit Pro 2016 supports hardware acceleration for AVCHD exports as well as AVCHD and Blu-ray discs. This can noticeably speed up the encoding process.

The hardware acceleration that is applied depends on the encoder being used and the hardware built into the system.

- **Quick Sync Video:** Intel processors starting with „Sandy Bridge“ when using a standard MPEG-4 encoder (view page 356, view page 344) or a Main Concept MPEG-4 encoder (view page 356, view page 344).
- **CUDA:** NVidia graphic cards when using a Main Concept-MPEG-4 encoder (view page 356, view page 344).
- **OpenCL:** AMD graphic cards when using a Main Concept MPEG-4 encoders (view page 356, view page 344).

**Note:** Ask your graphics card manufacturer whether your graphics card supports hardware acceleration. Make sure that all the necessary drivers are installed.

If your system does support hardware acceleration, you can activate it in the "Encoder Settings" dialog under "Advanced..." > "Hardware acceleration".

## Advanced video settings

### Generic

### AVC preset

This is where the actual video stream that will be exported is selected.

- **Baseline:** According to ISO/ICE 11172-1/2 standard
- **Main:** Corresponds with ISO/ICE 13818-1/2 standard
- **High:** High Profile
- **SVCD:** Corresponds with MPEG-2 Super VideoCD
- **D1:** Corresponds with MPEG-2 DVD
- **DVD:** DVD video
- **Blu-ray:** Blu-ray-Disc
- **Blu-ray HD:** Blu-ray-Disc in High Definition
- **Sony PSP:** Sony PSP-compatible format
- **HD 1280x720p:** High Profile with a resolution of 1280x720p (progressive)
- **HD 1440 x 1080i:** High profile with a resolution of 1440 x 1080i (interlaced)
- **Apple iPod:** Apple iPod-compatible stream.



## Profiles

### Profiles

Profiles define the encoder properties that are supported.

- **Baseline profile:** The basis of applications with limited computing performance, especially for video conferences or videos on mobile telephones.
- **Main profile:** This profile was originally intended for the broadcast industry and for backup purposes. It has become less popular since the development of the "High Profile" for this purpose.
- **High profile:** This profile is used for broadcast and backup applications, and it is also used sometimes in the HDTV industry (**H**igh **D**efinition **T**ele**v**ision). This profile is used for HD-DVD and Blu-ray Discs, for example.

### Level

H.264 defines different levels. The level determines which bit rate and resolution are possible for the video.

With the "Auto level" option, the encoder determines the level automatically on the basis of the resolution of "AVC preset" video formats, the set bit rate and the profile.

## Frame type

"Picture type" specifies which parts of a frame should be used as the basis for the encoding:

- **Progressive Frame:** A single image from a video sequence, also called a fullscreen.
- **Interlaced Field:** This is half an image. Two of these are combined to produce a frame. Read more about this explanation regarding "Interlace (view page 370)".
- **Interlace Frame:** The encoder creates a „Frame field“ which is the basis for the encoding.

## Field order

**Note:** This parameter is only available if the setting "Field" is selected for "Frame type".

In case of interlaced streams, the half-image sequence is set. Read more about this explanation regarding "Interlace (view page 370)".

## Slice count

A frame can be divided into multiple slices for encoding. Specify the maximum number of slices are permitted. If set to "0", then the number will be determined automatically.

## Rate control

The bit rate indicates how much data per second is saved in the video (playback speed). This makes the bit rate the deciding parameter with regard to the file size and quality of the video to be encoded. A higher bit rate means more quality but also a larger file size.

## Mode

- **Constant bit rate:** The constant bit rate should only be used if the device used to play the video supports constant bit rates.
- **Constant quantizer:** In this mode, a fixed colour quantization is used for the macro blocks. Under Advanced settings, a value between 1 and 32 can be set independent of the respective frame (I-Frame (view page 370), P-Frame, or B-Frame (view page 372)). The higher the value, the stronger the quantization: small values produce qualitatively high-quality images and the data rate increases, and larger values produce a reduction in data, but the quality suffers.
- **Variable bit rate:** The bit rate varies. For faster movements in the video, the bit rate increases, and for still images or slow pans, a lower bit rate is sufficient for creating the video in constant quality.

## Pass

Here you can choose whether you want to manually perform one-pass or multi-pass encodings (2-pass, multi-pass)

**Note:** The 2-pass option in the main dialog of the MPEG-4 export is recommended. This automatically performs two encoder passes.

If you want to perform 2-pass encoding manually, you must select "Multi-pass analysis" in the first pass and "Multi-pass encode" in the second pass.

- **Single pass:** The encoder process takes place without prior analysis. This requires the least amount of time.
- **Multi-pass analysis:** Analysis data is calculated during encoding and used for multi-pass encoding.
- **Multi-pass encode:** Assumes that an analysis has already been performed. The analysis data is used during encoding to optimize the results.

### Bit rate (Bits/s)

- In "**Constant bit rate**" mode: Exactly those values entered are applied to be able to calculate the size of the video precisely.
- In "**Variable bit rate**" mode: The values entered here are applied to the video as an average as a guideline. The size of the video to be exported can only be approximated.

### HSS rate

This is the maximum bit rate that should be present in the video stream, i.e. maximum number of bits that may be transferred to the decoder.

**Note:** This option is only available in "Variable bit rate" mode. "Use HRD" must also be activated.

### Aspect ratio

In the film industry, this is an indication of the ratio between width and height of a rectangle, monitor, or screen.

There are 3 different sizes available:

- **Picture Aspect Ratio** (also **Display Aspect Ratio, DAR**): This indicates the desired aspect ratio of the video to be exported. Here are some examples of typical aspect ratios: at home **4:3**, **16:9** (typical for TV sets) or **16:10** (widescreen-flatscreens, widescreen notebooks), **3:2** for 35mm films and photos. In cinemas you mostly find **1.85:1**.
- **Pixel Aspect Ratio (PAR, pixel aspect ratio)**: Indicates the aspect ratio of individual pixels. The majority of computer monitors have quadratic pixels (**PAR=1:1**), for analog television monitors (PAL at 4:3) **128:117**.
- **Sample Aspect Ratio (SAR, also Storage Aspect Ratio)**: Aspect ratio of the saved resolution (number of pixels), e.g. 720:576 at PAL. It also calculates picture aspect ratio and pixel aspect ratio: **SAR = DAR / PAR**.

**Note:** In the standard case, the "Aspect ratio" remains set the way it is. You should only change the settings if the resulting video is exported distorted or stretched or if you need to correct the video because it is in the wrong aspect ratio.

### GOP structure

#### Max GOP length

Determines the maximum GOP (view page 370) length. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video.

## Max b-frames count

The maximum number of b-frames (view page 372). Several cases of application, e.g. video conferences require "no b-frames" in order to achieve the shortest possible reaction times during transfer.

## Scene change detection

If this option is activated the scenes will be detected during encoding, thus allowing you to insert an I frame (view page 370) after a scene change.

## MPEG-4 simple

If MPEG-4 H.264 cannot be played back on your device, use MPEG-4 Simple.

**Note:** We recommend that only advanced users make adjustments to the advanced settings. You can use the technical specifications of your playback device to help with this.

## Advanced video settings

### Generic

### MPEG-4 preset

Different presets located within the encoder.

**(A)SP@L0-L5:** (Advanced) Simple Profile in Level 0-5

**(Q)CIF (Common Intermediate Format):** CIF is a video format produced as soon as 1990 with the video compression format H.261. At that time, the format was used for video telephone conferences.

The "Q" in QCIF stands for "Quarter", and since resolution is halved in terms of height and width compared to CIF, the entire size is only a quarter of CIF.

QCIF was popular with mobile telephone manufacturers, since the resolution of 176 x 144 pixels was sensible for the first affordable SmartPhones (144 x 176).

**(Half)D1:** D1 corresponds with MPEG-2 DVD. HalfD1 has exactly half of the entire number of pixels, meaning that the pixel number of the height and weight is 2/3 of D1.

**720p:** Video stream with a resolution of 1280 x 720p (progressive).

**Apple iPod:** Apple iPod-compatible stream.

**Sony PSP:** Sony PSP-compatible stream.

## Profile/Level

**Profiles:** Profiles define the encoder properties that are supported.

**Level:** The level determines which bit rate and resolution are possible for the video.

## Picture type

"Picture type" specifies which parts of a frame should be used as the basis for the encoding:

- **Frame:** A frame is a single image from a video sequence, also called a full image.
- **Field:** A half-image, two of which combine to produce a frame. Read more about this explanation regarding "Interlace (view page 370)".

## Field order

**Note:** This parameter is only available if the setting "Field" is selected for "Frame type".

In case of interlaced streams, the half-image sequence is set. Read more about this explanation regarding "Interlace (view page 370)".

## Slice count

A frame can be divided into multiple slices for encoding. Specify the maximum number of slices are permitted. If set to "0", then the number will be determined automatically.

## Rate control

The bit rate indicates how much data per second is saved in the video (playback speed). This makes the bit rate the deciding parameter with regard to the file size and quality of the video to be encoded. A higher bit rate means more quality but also a larger file size.

## Mode

- **Constant bit rate:** The constant bit rate should only be used if the device used to play the video supports constant bit rates.
- **Variable bit rate:** The bit rate varies. For faster movements in the video, the bit rate increases, and for still images or slow pans, a lower bit rate is sufficient for creating the video in constant quality.
- **Constant quality:** Similar to the "Variable bit rate" mode, the bit rate varies according to the video material. The quality depends on the selected profile and can be changed.

- **Constant quantizer:** In this mode, a fixed colour quantization is used for the macro blocks. Under Advanced settings, a value between 1 and 32 can be set independent of the respective frame (I-Frame (view page 370), P-Frame, or B-Frame (view page 372)). The higher the value, the stronger the quantization: small values produce qualitatively high-quality images and the data rate increases, and larger values produce a reduction in data, but the quality suffers.

### Bit rate (Bits/s)

- In "**Constant bit rate**" mode: Exactly those values entered are applied to be able to calculate the size of the video precisely.
- In "**Variable bit rate**" mode: The values entered here are applied to the video as an average as a guideline. The size of the video to be exported can only be approximated.

### Max. rate

This is the maximum bit rate that should be present in the video stream, i.e. maximum number of bits that may be transferred to the decoder.

**Note:** This option is only available in "Variable bit rate" mode.

### Pixel aspect ratio

Specifies the page ratio of the individual image points (pixels).

**Meaning:** Different television norms and the standard pixel ratio. Select a setting and the results are displayed as "X" and "Y".

**X/Y:** The actual pixel ratio. If under "Meaning" the setting "Custom" is selected, then a custom ratio can be set.

### GOP structure

#### Max key interval

Determines the maximum GOP (view page 370) length. High values mean improved compression. Lower values create stronger security protection and enable improved access to individual frames for processing the video.

### B-frames count

The number of B-Frames (view page 372). Several applications, e.g. video conferences, require a setting of "0" for this, i.e. no B-Frames, in order to enable the shortest possible reaction times for transfer.

## Scene change detection

If this option is activated the scenes will be detected during encoding, thus allowing you to insert an I frame (view page 370) after a scene change.

## Audio codec:

Under "Audio", "AAC" (view page 365) is preset. If you have chosen an AVCHD transport stream from the presets, "AVCHD audio track" will be available.

## AAC

AAC was developed by MPEG, the Moving Picture Experts Group, as an audio data compression process that was specified as a further development of MPEG-2 Multichannel in the MPEG-2 standard.

AAC is equally suitable for encoding general audio information and not especially optimized for certain types of audio material.

AAC audio can be encoded with a sample rate of 8000, 16000, 24000, 32000 or 48000 Hz in either mono or stereo. By default, the sound is set to 48000 Hz stereo. The higher the sample rate is, the larger the resulting file and higher the audio quality. You can use the technical specifications of your playback device to help with this.

### Advanced audio settings:

- The **bit rate** can be set between 6 and 512 kbit/s. 160 kbits/s is active by default. The higher the value is, the larger the resulting file and higher the audio quality. After a certain limit, additional improvements to audio quality will not be perceived. Bit rates under 64 kb/s are not recommended.
- As an **MPEG version**, set MPEG-4 or the older, proven MPEG-2 format.
- For the **File Header Type**, choose either RAW or ADTS. The "Header" indicates an explanatory head for the beginning of the file segment, which in fact takes up extra space, but is required for decoding under circumstances.
  - **RAW** indicates material which does not include a file header in audio format. The audio material is therefore transferred directly without any special additional information (raw). This requires that decoding routines are able to process the material without the explanatory file header. Especially in case "exotic" sample rates are set, this can lead to problems during RAW encoding.
  - **ADTS** indicates a file header type which contains information for encoded audio material. In case of doubt, select this file header type, since fewer problems can be expected in this case.

**Profiles:**

- **Low complexity:** Data is present in a form that hinders different decoding algorithms (noise replacement), but enables others (temporal adjustment noise formation).

**Note:** For example, Apple iPod requires "low complexity encoding". However, you don't need to worry if you select the right preset for Apple iPod in the export dialog.

**AVCHD audio track**

If you have chosen an AVCHD, AVCHD transport stream, or Blu-ray (H.264) from the presets, "AVCHD audio track" will be available.

**Note:** 5.1 surround is only available in MAGIX Movie Edit Pro 2016 Plus and Premium.

**Multiplexer**

The Multiplexer combines audio and video streams so they can be played back together on playback devices.

**Output format**

**MPEG-4 file:** This is an MPEG standard (ISO/IEC-14496) with the original goal of supporting devices with less computing performance. Currently, MPEG-4 has reached a wide bandwidth of application, from HD video to support for mobile telephones.

**JPEG2000 file:** DCI (Digital Cinema Initiative) has been replaced by the JPEG2000 format for encoding movies. The current distribution and presentation of films has been taken over by digital projectors that play back **high-resolution Mj2 streams** in outstanding image and sound quality.

**3GPP file:** A standard supported by plenty GSM and UMTS mobile telephones. 3GPP is very similar to the MPEG-4 standard, but also supports formats that are not permitted by MPEG-4.

**Streamable format**

Activate this option if you would like to create files that can be integrated into and played back on websites. This way the file can be played back without having to be completely preloaded.



**Note:** This setting is recommended if you choose the option "Export as website".

### **For Sony PSP**

Switch on this option if the video should be played back with the Sony PSP.

### **For iPod**

Switch on this option, if the video should be played back with the Apple iPod.

## MPEG glossary

### Motion estimation

Motion estimation is a further element for reducing data used in MPEG encoding.

Motion estimation also occurs in the B and P frames. The image difference that still exist after prediction (view page 372) are examined. Complex algorithms are used to search for an original occurrence of the macro block in the reference frame of each macro block of the P or B frame (these are units of 2x2 blocks specially combined for this purpose), which have been moved either by movement or by camera pan. They can then be left out in the P and B frame. Only the information by how far and to where the macro block has been moved is saved instead. This vector is called the motion detector.

In the General encoder settings (view page 350), you can specify the quality of the final MPEG video. This factor also influences the time required for encoding. The longer it takes, the better the quality.

### Bit rate

MPEG is a format used for storage and transferring. With older formats (e.g. AVI) you could predict that 20 seconds of movie would result in 20 MB of data. The file size is this a direct measurement of quality.

This is different for MPEG: The amount of data available can be used differently for different display modes. 20 MB can be 4 seconds of DVD Video or 5 minutes Internet streaming in thumbnail format. The quality of an MPEG video is measured by the width of the created data stream, the bit rate. This is the amount of the transmitted data per time unit; it is stated in kBit/s or bit per second.

Bits, not bytes are used, since the data word width has to address the transmission restrictions.

The file size can be calculated from the average bit rate, if its length is known:

$$F = (BRV + BRA) * t$$

F=File size

BRV=  
Video bit rate

BRA=  
Audio bit rate

t=Length in s

## Block

For almost all image file editing techniques the image is subdivided into 8 x 8 pixel blocks (image points). This should be noted if you would like to use user-defined image resolutions (width/height), and they should always be a multiple of 8.

## Chroma format

The color value of each image point consists of the color values for the primary colors red, green, and blue (RGB), and for traditional and technical reasons it is transformed into one brightness value ( $Y = 0.299 \cdot R + 0.587 \cdot G + 0.114 \cdot B$ ) and two color difference values ( $U = R - Y$ ,  $V = G - Y$ ).

The Y value alone produces the black and white picture. These signal components allow brightness and color information to be handled separately. The first data reduction occurs when single rows comprising a picture are read. Because the human eye has a lower color resolution than a brightness resolution, the color components are recorded only for every other point of a row (4:2:2) for each four pixels grouped (4:1:0), i.e. color signal under-sampling.

**4:2:2** This corresponds to the established TV standard. One piece of color information is transmitted per row for two pixels which corresponds to a 2/3 compression of the output data.

**4:1:0** This is the color coding used for DVDs and most other consumer video applications. For each 4 pixels grouped together on two rows, one unit of color information is saved. This corresponds to a output data compression of 1/2.

## Field

A half-image, i.e. two halves which combine to produce a frame (see de-interlacing (view page 370)).

## Frame

A frame is a single image from a video sequence which is also called a full image. PAL video, for example, contains 25 frames per second, NTSC 29.97 frames.

Video recordings, with the exception of computer animations and still frames, don't contain full images. Instead, they have double numbers of half-images (fields) which are transmitted in an interlaced state. However, we still refer to frames, since many predecessors of MPEG compression are based on such frames. Video editing literature usually refers to frames.

## GOP

**Group of Pictures:** The sequence of I frames and the P and B frames that belong to them.

e.g. I B B P B B P B B I ...

(This GOP has a length of 9, with 2 P frames and 2 B frames)

I frames contain the entire image information of a frame, while P and B have part of the information. So-called prediction (view page 372) and movement approximation are methods used for reduction.

The combination P B B is called a subgroup.

I frames must appear in regular intervals in the data stream for image and sound to be synchronized. Between the I frames only a limited count of P and B frames is allowed. This explains a few things: Since P and B frames contain only differential information, these differences will be larger with time, since more and more changes take place from frame to frame. A large count does not make much sense, since GOP has a maximum length of 15 (4P, 2B) in PAL and 18 (5P, 2B) in NTSC. (More than 2 B frames between P frames is not allowed).

In a **closed GOP**, B frames of the last subgroup may contain only backward predictions or references to the preceding P frame, but no references to the following I frame, since it belongs to the next GOP.

## I frames

**Intra-frames:** In these pictures, the entire image information of a frame is saved and only information from this frame is used ("intra-frame encoded"). In contrast to the I frame, P and B frames save only the differences between the current frame, and preceding and/or following frame are also found in MPEG video (P frame = "predicted frame", B frame = "bidirectional frame", see Prediction (view page 372)).

## Interlace

For historical reasons, pictures in a movie are always recorded and transmitted in the form of two fields, first the lines with even numbers and then those with odd numbers. These fields are alternatively displayed with a double-frame rate. The (lazy) eye of the viewer or the processing of the TV tube puts the two frames together to form one.



The output image



First field



Second field

You normally don't have to worry about field processing. The video material goes through the entire processing chain as fields and is exported again as fields or burned onto DVD or shown on TV when played back on a DVD as a full picture. Only in certain rare conditions is it necessary to delve deeper into this process. Two problems can occur:

## Interlace artifacts

To be displayed on a computer monitor the two fields must be combined to form a full screen.

These two fields are not the same, since two fields are created during the recording (between which a  $1/50$  of a second gap is evident). Moving objects can therefore produce artifacts at the vertical edges.



Typical interlacing errors

You can use so-called "de-interlacing" to avoid these artifacts. A picture in between the two fields is created (interpolated). So if you want to create stationary pictures from movies, then you should definitely use a de-interlace filter.

In the system settings (File menu-> Program settings (More information can be found in the section "Folder" on page 74)) you can set the preview monitor display to use hardware de-interlacing during video recordings, for the video recorder, and for display in the arranger.

## Incorrect field rate

If you move around the series of fields in a movie data stream you can see strong jitter and flicker effects. Picture objects move in a backward movement - two steps forwards, one back - since a delayed field is shown before the previous one. This can

happen in the processing chain if you export video material improperly with the wrong field order and then import it into different material.

We use MXV or MPEG "Top field first" format for all analog recordings ("odd" in other programs). DV-AVI on the other hand is saved with "Bottom Field First".

You can correct the field series for each video object in its object settings (view page 305). See: Menu -> Effects -> Object properties

## P frames and B frames

P frames save only the difference between the current picture and the preceding I frame. The "P" comes from the term "prediction" which describes this process.

B frames save the differences between the current picture and the I or P frame preceding and following. This includes the information that was the same before and remained the same after the current frame. Both directions are analyzed (indicates the "B" in the name, i.e. "bidirectional-predicted"). You can read more under prediction (view page 372).

## Prediction

Prediction is a method of data reduction used by the MPEG format. The image elements already known from the previous or following frames are removed from the data stream.

### How does it work?

The encoder has a precisely defined GOP, for example IBBPBBPBB. This sequence is transmitted together with the encoder, which always knows exactly which kind of frame comes next. I, P, and B frames are differentiated.

Hint: When we talk about pictures, we mean frames of the video output, and I, P and B frames are the frames of the encoded video. Just as in movement approximation, blocks (8x8 pixels) are united into macroblocks (16x16 pixels) during prediction.

The first frame is always the I frame. It is completely encoded from the first picture. Afterwards, the 4th picture is analyzed for the creation of the first P frame. (As already said, the encoder, and later the decoder, will know that two B frames belong between them.) This image will also be completely encoded, and afterwards all macroblocks that haven't changed in comparison to the I frame will be deleted. They will be replaced by corresponding references for the decoder that tell it "you already know what should be shown here, and you can get it from the last I frame".

Now, the 2nd will be completely encoded, and all macroblocks identical to the first I frame **and** the following P frame will be removed. References to previous frames are called **backward predictions**, and references to following frames are called **forward predictions**. The third picture will be edited in exactly the same fashion.

The fourth picture we have already explained, and now we need the next P frame, or picture number 7. Pictures 5 and 6 are B frames again, which are compared to P frames to both sides of them (picture 4 and 7); these are followed by the last two B frames. These have a special place, since in closed GOPs, they may contain only **backward predictions**, and no references to the next I frame, because it belongs to the next GOP.

Something else: Since the decoder is no prophet, the P frames are always transmitted before the B frames! The GOP explained above will be encoded and transmitted in the order it is written.

Original      I<sub>0</sub> B<sub>01</sub> B<sub>02</sub> P<sub>01</sub> B<sub>11</sub> B<sub>12</sub> P<sub>02</sub> B<sub>21</sub> B<sub>22</sub><sub>11</sub>  
 GOP

Data stream    I<sub>0</sub> P<sub>01</sub> B<sub>01</sub> B<sub>02</sub> P<sub>02</sub> B<sub>11</sub> B<sub>12</sub> B<sub>21</sub> B<sub>22</sub><sub>11</sub> ...      for closed GOPs

I<sub>0</sub> P<sub>01</sub> B<sub>01</sub> B<sub>02</sub> P<sub>02</sub> B<sub>11</sub> B<sub>12</sub> I<sub>1</sub> B<sub>21</sub>B<sub>22</sub> P<sub>11</sub>...      For open GOPs

Due to this nested structure, it is easy to see that during direct editing of MPEG material, complicated computations have to take place! These are made easier using a **frame table**. A frame table contains a list, where the information of every frame in the data stream is found, identifying the type of frame it is.

Using Movement prediction (view page 368) P and B frames are likewise reduced.

## Quantization scaling

The single pictures in MPEG are saved using a compression method comparable to JPEG with bitmaps and associated with quality loss. For this single images are divided into 8 x 8 blocks (view page 369).

Each one of these blocks is then transformed into an 8 x 8 matrix (a table with rows and columns) using a **DCT** (discreet cosinus transformation) mathematical method. Each of these values is produced using all 64 individual pixels of the block, but the values in the matrix are ordered in such a way that the image information is ordered according to its importance.

This matrix will then be multiplied by another matrix, i.e. the **quantization matrix**. Exactly how and why this matrix must be created is the biggest secret of encoder programmers, since this determines the quality of the whole encoding process. What

is known is that the result should contain as many zeros as possible! These zeros correspond to the "unimportant" image elements mentioned and will not be transmitted in the data stream.

Depending on the encoder parameters regarding the target bit rate, fewer or more values of the matrix will be declared unimportant by dividing the quantization matrix by the **quantization scaling factor**. Since only whole numbers are used, a division can produce a zero if the remainder is discarded.

This factor is also a direct measure of the sought image quality of the MPEG data stream, since the "Q" in "Q" factor stands for quantization and quality.



## If you still have questions

**Tip regarding special program versions:** This documentation describes the full functionality of MAGIX Movie Edit Pro 2016. However, you may be using a restricted version of MAGIX Movie Edit Pro 2016, and full functionality may not be available.

### Tips for Program Help

When the program is open, you can access the Help feature by pressing F1 on your keyboard. The program Help contains tips on how to use the program and lots of additional information. Many important terms are indicated in the text in *italics*. Simply click on these terms for a more detailed explanation of what they mean.

**Context Help:** Press the "F1" key on your keyboard at any point in the open program and Help will open with the matching help topic.

**Search function:** This feature can be used to look for specific words in the Help section. Enter either the individual word or use logical operators (e. g. OR, AND, NEAR) to refine your search if you have several search words.

- **OR** (between two words): all topics which contain both words or one of the words will be listed.
- **AND** (between two words): only those topics will be listed which contain both words.
- **NEAR** (between two words): only those topics will be listed which contain both words. A maximum of 6 additional words are allowed between two search words.
- **NOT** (before a word): topics which contain this word will **not** be listed.

**Print:** The print function can be used to print out specific Help topics or entire topic sections. The print button is located at the very top of the toolbar in the Help window.

# Glossary

## Symbols & Numeric

### 1080i/1080p

1080i or 1080p are the so-called Full HD resolutions. These have a resolution of 1920 x 1080 pixels. The "i" stands for "interlaced" (view page 382) and means that each field is stored, as with interlaced scanning. The "p" stands for "progressive" and means that entire images are stored.

### 720p

This is the "small" HD resolution, which is sized at 1280 pixels x 720 pixels. The "p" stands for "progressive", i.e. full images are always displayed.

## A

### Aliasing

Aliasing, or alias effects, are mistakes that appear during digital scanning of sounds, videos or images when the sample frequency (in audio editing) or resolution (in video editing) used are too low.

### ATN:

This abbreviation stands for "Absolute Track Number". Which is the actual time code of DV and HDV recordings recorded using the helical scan method.

### Audio

This is then referred to as "audio" when the sound signal is saved directly as such on the PC. The actual sound is recorded or played back here.

### audioid

audioid is a process used to determine the title and artist name base on musical properties. An Internet connection is required to access the audioid database.

### AVCHD

Stands for "Advanced Video Codec Definition". It is an HD format for video cameras, which has been developed by Panasonic and Sony. In comparison to the "HDV" format, a clear improvement in quality can be seen here.

MPEG-4 AVC/H.264 is used for video encoding and AAC or AC3 for audio encoding. The maximum bitrate is 25 Megabits/sec.

## AVI

The AVI format (**Audio Video Interleaved**) isn't actually a proper video format! Rather, it is a so-called "container" for which the conventions for transferring audio and video files to the program are only loosely defined. More in this topic can be found in General notes on AVI videos. (view page 333)

## B

### Backup disc

Copying of files to a different file storage medium to secure these files is called backing up, or creating a backup.

### Browser

A browser (also known as web browser, or Internet browser) is a computer program that displays websites. The best-known browsers are Internet Explorer, Firefox, Safari, and Opera.

### Button

Refers to an element of the graphic user interface of a program. The button initiates an action in the program via left mouse click.

### Button

Refers to an element of the graphic user interface of a program. The button initiates an action in the program via left mouse click.

## C

### Cache

Simply stated, this is a temporary folder where frequently accessed files are saved so that they can be quickly launched while you are working.

### CC

CC stands for "Connectivity Co-ordination" and describes how the change of a domain name from one provider to another occurs (domain transfer).

### Clip level

Signifies the volume level at which the recorded signal is overmodulated, or "clipped".

### Clipboard

The clipboard is used to temporarily store objects during execution of commands like "copy" and "cut".

### Clipboard

The clipboard is used to temporarily store objects during execution of commands like "copy" and "cut".

### Compatible

Different devices are compatible with each other if they operate together without any errors occurring.

### Context menu

Context menu can be reached by right clicking on a selected object. It offers functions which are available and can be expected in the given context.

### Copyright

Protection of intellectual and creative property against unauthorized copying.

### Copyright

Protection of intellectual and creative property against unauthorized copying.

### CPU

**Central processing unit:** The name for the main processor of the computer (CPU). Modern computers have even two or more processors, or one processor with several cores.

## D

### Dialog

A dialog opens in a new window and lets the user interact with the program. This means that the dialog can present information to the user and/or expects to receive input from the user.

A dialog can contain various user elements which can be manipulated by a simple mouse click. Keyboard entries are also possible.

## Disc project

A "Disc project" includes everything that you want to put on your CD and DVD.

This normally contains one or more movies and includes a menu structure/menu design which allows you to choose a movie later on the CD or DVD.

## Disc types

The disc types determines the format and medium (CD, DVD, Blu-ray disc, etc.) to which the current project will be burned.

## Dissolve

Transitions, Dissolve. Can be used to fade between objects.

## DNS

The abbreviation DNS stands for Domain Name Service and refers to a provider of Internet services that registers domain names for customers.

## Domain

A domain is the website's Internet address. It consists of the name of the Internet protocol (usually http://), the computer or network name (such as www), the second-level domain (such as magix), and the top level domain (like .com, .net).

Altogether we have: protocol://networkname.second-level-domain.top-level-domain (such as "http://www.magix.com").

Domains are allocated by a country's so-called NIC (Network Information Center). In Germany the DENIC is responsible for the release of domains.

## Domain transfer

See CC. If you already have a domain, you can move it from your previous provider to another provider.

## Downmix

A method developed for audio technology to turn a Surround Sound recording into a version with fewer channels. Most often (as is the case with MAGIX Movie Edit Pro 2016) this will be a stereo version.

## Drag & drop

Enables files and objects to be moved freely between various applications (or within an application) by dragging the object and letting it drop using the mouse cursor.

## F

### Fader

Used for visual input of values. Similar to volume control on a mixing board, you can control various parameters by sliding the fader. A very common example for this is the zoom slider that lets you see a picture in more detail.

### Field

A half-image, two of which combine to produce a frame (see interlace).

### Flip menu

Drop down menus create menus consisting of lists of selectable choices. They look very similar to text input fields, but have a button with a downward-pointing symbol on the right-hand side.

### Frame

A frame is a single image from a video sequence which also called a full image.

A PAL video contains 25 frames per second; NTSC contains 29.97 frames.

## H

### Handles

Handles are the five little rectangles at the edges of selected objects. All curve points can be moved by holding down the left mouse button.

**Length handles:** Bottom right and bottom left. You can use them to change the length of an object.

**Transition/Fade handles:** Top right and top left. These can be used to softly fade an object in or out.

**Volume/Brightness handle:** Above-center. You can use it to adjust the volume or the brightness.

## Hard disk

Storage medium with the largest storage capacity where the operating system(s), programs, and files are saved. A hard disk can be built into the computer, but there are also external hard disks which can be used with different computers via a USB connection (portable drives or external hard disk).

## Hard disk drive

Storage medium with the largest storage capacity where the operating system(s), programs, and files are saved. A hard disk can be built into the computer, but there are also external hard disks which can be used with different computers via a USB connection (portable drives or external hard disk).

## Hardware

The all-encompassing name for all internal components of a computer. For example hard disk, graphics card, mainboard, etc. External peripheral devices are also considered hardware, i.e. printer, scanner, monitor, etc. The synchronization of single hardware components is coordinated by the software.

## HDD

Storage medium with the largest storage capacity where the operating system(s), programs, and files are saved. A hard disk can be built into the computer, but there are also external hard disks which can be used with different computers via a USB connection (portable drives or external hard disk).

## HDTV

This acronym stands for "**H**igh **D**efinition **T**ele**v**ision.

## HTTP

Stands for Hyper Text Transfer Protocol and is used for transferring websites onto the Internet (from web server to the browser). For this reason, the abbreviation **http://** always comes before the Internet address. This is automatically inserted and does not have to be entered when entering the Internet address.

## Hyperlink

Hyperlinks (or in short "links") are references to other websites/online documents (or other computer networks). They build the base of the World Wide Web (WWW) as it is only via these hyperlinks that networking or interlinking between the billions of website out there is actually possible.

# I

## ID3 tags

ID3 tags contain title information that can be added to a music title. This includes the title, artist, album, as well as the genre, year of release, and other criteria that can help searching through a database. The database is created using this information.

**Info:** Title information will only be saved for MP3s in the so-called ID3 tags (Identify an MP3), but other formats offer similar possibilities, like "Vorbis comment" for the OGG Vorbis format, for example.

## Image

An image is a representation of a CD, DVD, hard drive, or another storage medium that is saved as a file.

The difference from a copy or backup is that an image contains information about the structure of the original storage medium, and not just individual files. This enables 01:01 copies of complete storage media to be created.

**Caution!** Copyright laws forbid copying of commercial CDs/DVDs, and for this reason, this process can be prohibited by copy protection.

## IMAP

Stands for Internet Message Access Protocol and is an advanced process of receiving emails.

## Interlace

Describes the creation of a full image from 2 half-images (fields).

In this process, even and odd lines are alternately assigned to one of the two fields.

The human eye perceives both of the projected half-images as a single full image, so that despite the slow image repetition rate (25 Hz for PAL, 29.97 for NTSC) a subjectively fluid image is seen.

## Intro

"Intro" means the introduction or opening credits of a movie.



## J

### jpx

A format developed by MAGIX which is used for photo editing. It enables free experimentation with effects without altering the original file. The effects settings are also displayed when the photos are opened using a different MAGIX program.

## M

### Menu

Menus contain practically all the program functions. They can be opened using a simple mouse click on the corresponding menu. Keyboard shortcuts, if available, are also found at the end of menu entries.

The graphical surface of a CD/DVD will also be represented as a menu.

### Menu bar

Almost every program has a menu bar. It can normally be found underneath the title line of the program. A simple mouse click opens a corresponding menu.

### MIDI

MIDI files do not contain the actual sounds like audio files, but only the note control information which can be interpreted during playback by the synthesizer chip on the sound card or an external synthesizer.

### MMC

MMC stands for MIDI Machine Control and is part of the MIDI protocol. Transport control and position data is conveyed using MMC.

### Motherboard

This is the centerpiece of hardware components of a computer. All other hardware components like CPU, RAM, hard disk, additional drives, graphics cards, as well as other cards for specialized uses are connected to the motherboard.

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This is the centerpiece of hardware components of a computer. All other hardware components like CPU, RAM, hard disk, additional drives, graphics cards, as well as other cards for specialized uses are connected to the motherboard.

## MOV

MOV is a video and audio format developed by Apple, which has since become widely used with Windows. QuickTime supports lots of compression technology, which make it possible to optimize audio and video and even graphics for the Internet and multimedia/video applications. Conventional (hardware) DVD players are not able to play this format.

## Movie

In MAGIX Movie Edit Pro 2016, an arrangement of various objects (videos, photos, text, sound, etc.) is called a movie. A movie file has an "mvm" extension.

## MP3

MP3 (actually MPEG-1 layer 3) is currently the most important standard for compressing audio files.

## MPEG

MPEG is short for "Moving Picture Experts Group" and refers to a committee concerned with the standardization of video and audio data compression as well as container formats.

## MS audio

A process developed by Microsoft for compressing audio files with properties similar to those of MP3.

## MTC

MTC stands for **M**IDI **T**ime **C**ode and it transmits the exact playback position via MIDI. In this way, programs and devices can be synchronized with each other.

## MXV

This is the MAGIX video format for quicker processing with MAGIX products. It offers very low loss of quality, but it cannot be played via conventional DVD players.

## N

### Noise Sample

Sample of a noise that is to be removed

### NTSC (USA, Japan)

NTSC stands for "**N**ational **T**elevision **S**ystems **C**ommittee". This is a US institution that defined the first color carrier system for TV which is now used in most of America and some East Asian countries.

The image repetition rate for NTSC is 29.97 Hz.

### Numeric keypad

Also known as the numpad, or the number block.

## O

### Offset

With an offset of 60:00:00 (1 hour) you can, for example synchronize a tape whose time code that starts at 1 hour, MAGIX Movie Edit Pro 2016 however, still starts the tape beginning at 0.

### OGG VORBIS

This is a new, royalty-free format with similar properties to MP3.

## P

### PAL (Europe)

Phase **A**lternating **L**ine, or **PAL**, is a process for color transmission for analog TV that is primarily used in Europe, but also in Australia, South America, and many African and Asian countries.

The image repetition rate for PAL is 25 Hz.

### Play marker

The play marker is a red vertical line which moves from left to right during playback. It indicates the current play position.

## Playlist

Arrange your songs in playlists from various sources in different formats and in whatever way you like, sometimes updated daily.

**Important:** Playlists are only links to songs on your hard drive or in your CD drive.

When you add a song to your playlist whose real source is a CD in your computer's drive, the song will no longer be playable when the CD is removed from the drive.

Similarly, when you move a folder on your hard drive, the playlist will no longer be able to play the song, since the link is no longer valid.

For the latter, however, there is a simple solution: If you know where the song has been saved, then you can redefine the path. A corresponding dialog window is provided for this purpose. You can reset the path by navigating through the Explorer folders. The playlist is now correct once again.

## Plug-in

Plug-ins are additional programs that expand the functionality of the main program. They are inserted into the main program.

## POP3

Stands for Post Office Protocol (version 3) and is used in standard email programs for receiving email (for example, Outlook Express). POP3 enables email to be collected by the provider's email server and loaded into your email program.

## Project

A "Disc project" includes everything that you want to put on your CD and DVD.

This normally contains one or more movies and includes a menu structure/menu design which allows you to choose a movie later on the CD or DVD.

## Provider

A provider or ISP (Internet Service Provider) offers Internet services like webhosting or domains (DNS). In relation to the MAGIX Website Service, MAGIX is the provider.

## R

### RAM (Random Access Memory)

This is a hardware component of a computer. RAM is needed to temporarily save files. This type of storage is erased when the computer is shut down or reset. The larger this storage is, the faster you can work with programs to change and save files.

### Ratio

The aspect ratio is the ratio between the height and width of a rectangle. In practice these are photos, screens or projection screens. This method can also be used to describe the aspect ratio of pixels.

Here are some examples of typical aspect ratios: at home **4:3**, **16:9** (typical for TV sets), or **16:10** (widescreen flat screens, widescreen notebooks), **3:2** for 35 mm films and photos. In cinemas you mostly find **1.85:1**

### Red Book

Specific standards have been established for the different CD types in order to unify their data structure and to make them compatible with the different CD drives. Their names refer to the color of the books where these standards were written.

The term "Red Book" is common language for the Compact Disc Audio Standard. The requirements listed here have to be observed for industrial CP production. Audio CD players only read CDs created according to the Red Book format. It is therefore necessary to first convert PC files into this format before writing them onto an audio disc compatible with any audio CD player.

### Restore

Restoration of files originating from a backup is called "Restoring".

### RM

RealMedia includes all of the media formats from software developer RealNetworks. RealMedia especially refers to the "RealVideo" video format and the "RealAudio" sound format. The quality of RealVideo files is comparably good at high compression rates, but does have some loss of quality. These formats cannot be played back by (hardware) DVD players.

## S

### Scene

Freely definable section of a video in MAGIX Movie Edit Pro 2016.

In general, a scene is a segment of a film that is a product of various settings and conveys a certain action.

### Screenshot

A screenshot is an image composed of all visible screen elements (messages, open dialogs, etc.) at a certain time. By pressing the "Print screen" key on the keyboard, this image is saved into the clipboard. Next, open a program which can edit images and select "Insert" (shortcut "Ctrl+V") in a new document to add the screenshot for editing and saving.

Note: Press "Alt + Print screen" on the keyboard to capture the active window only.

### Slider

Used for visual input of values. Similar to volume control on a mixing board, you can control various parameters by sliding the fader. A very common example for this is the zoom slider that lets you see a picture in more detail.

### SMTP

Stands for Simple Mail Transfer Protocol and enables the exchange of emails across computer networks.

### Software

The name for all non-physical functional components of a computer. This primarily includes computer programs and files that are meant to be used by computer programs.

### Submenu

Along with normal entries, a menu can contain submenus that offer additional functions. These provide a better overview of the menus.

## T

### Timeline

In the Timeline-Mode (view page 30), the media being used is always displayed on a timeline that runs from left to right.

### Toolbar

Here you will find small buttons that provide a function when clicked. For example, you can cut out a selected object by clicking on the scissors.

### Toolbar

All basic functions of the corresponding program can be found here. The corresponding functions can be called up via mouse click.

### Top-level domain

Top-level domains (TLD) are always those separated by a dot at the end of an Internet address (for example, "http://www.magix.com" < here, .com is the top-level domain). Among these are also country top-level domains, such as .co.uk, .us, .de as well as so-called generic top-level domains like .net, .org, .biz, and so on.

### Traffic

Traffic (data transmission) occurs within your MAGIX Website Service as soon as data is transferred across the Internet: for example, when uploading or downloading files to your website or when someone else opens your website.

## U

### Universal Plug & Play; UPnP

Universal Plug 'n' Play (UPnP) is a network protocol which enables data exchange between different devices (PCs, hi-fi systems, video cameras, PDAs, and web servers). UPnP allows various devices to participate in network-wide communication, i.e. the initialization of functions and other device functions. Long-winded configuring or installing of drivers is not required as the devices can handle their own functions and data sources by themselves. Find out more at [www.upnp.org](http://www.upnp.org).

**Hint:** To work with UPnP you have to activate it first. This can be found under "Options" ("Y" -> UPnP).

## URL

URL stands for Uniform Resource Locator and describes where a source can be found online (for example, a website). The address or the path to the storage location of a file on your computer is known as a URL. Often the term URL is used as a term for the domain. The URL for the MAGIX website is: <http://www.magix.co.uk>

## V

### VirtualDub plug-in

Plug-ins are additional programs that expand the functionality of the main program. They are inserted into the main program.

VirtualDub plug-ins are also referred to "VirtualDub filters" and have the "VDF" file extension. You can use them to apply additional video effects to video objects.

### VST and DirectX plug-ins

Plug-ins are additional programs that expand the functionality of the main program. They are inserted into the main program.

Two standards exist for audio editing: VST (Steinberg) and DirectX (Microsoft). VST has asserted itself stronger in the current market.

## W

### WAV

Wave (\*.WAV) is a standard uncompressed audio format.

### Wave

Wave (\*.WAV) is a standard uncompressed audio format.

### Wave file

Wave (\*.WAV) is a standard uncompressed audio format.

### Webhosting

This means that an Internet Service Provider makes domains and webspace available to its customers. With the MAGIX Website Service, MAGIX provides webhosting to its customers.



## Webmail

Webmail enables the customer to view and receive the contents of their email inbox without having to install email software on their computer. Customers of the MAGIX Website Service can use MAGIX Webmail for this.

## Webmaster

A webmaster is responsible for the administration and maintenance of a website. Often, the webmaster is also the owner of the website as well as the domain that belongs to it. Once you have registered a domain in the MAGIX Website Service, an email account will automatically be set up, for example: "mailto:webmaster@domainname.co.uk".

## Webserver

Webserver refers to the computer on which your host saves your website's pages and which makes your pages accessible on the Internet 24-hours a day.

## WMA

A process developed by Microsoft for compressing audio files with properties similar to those of MP3.

## WMV

Windows Media Video (WMV) is a trademark video codec from Microsoft. If you have Windows installed on your PC, then playing WMV files shouldn't be a problem. Only a few (hardware) DVD players are able to play this format. Read more about this in your DVD player's manual.

This video format is very good for web videos as it allows relatively high compression rates.

## World Wide Web (WWW)

WWW stands for "World Wide Web" and is the most used service of the Internet. On the WWW, web browsers (for example, Internet Explorer) are used to display information via websites. The process is colloquially called "Surfing the Internet".

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