MAIN CONCEPT Multimedia Technologies

MainActor v5
Linux Video Editing

www.mainconcept.com

Welcome to MainActor v5

- Linux Video Editing -
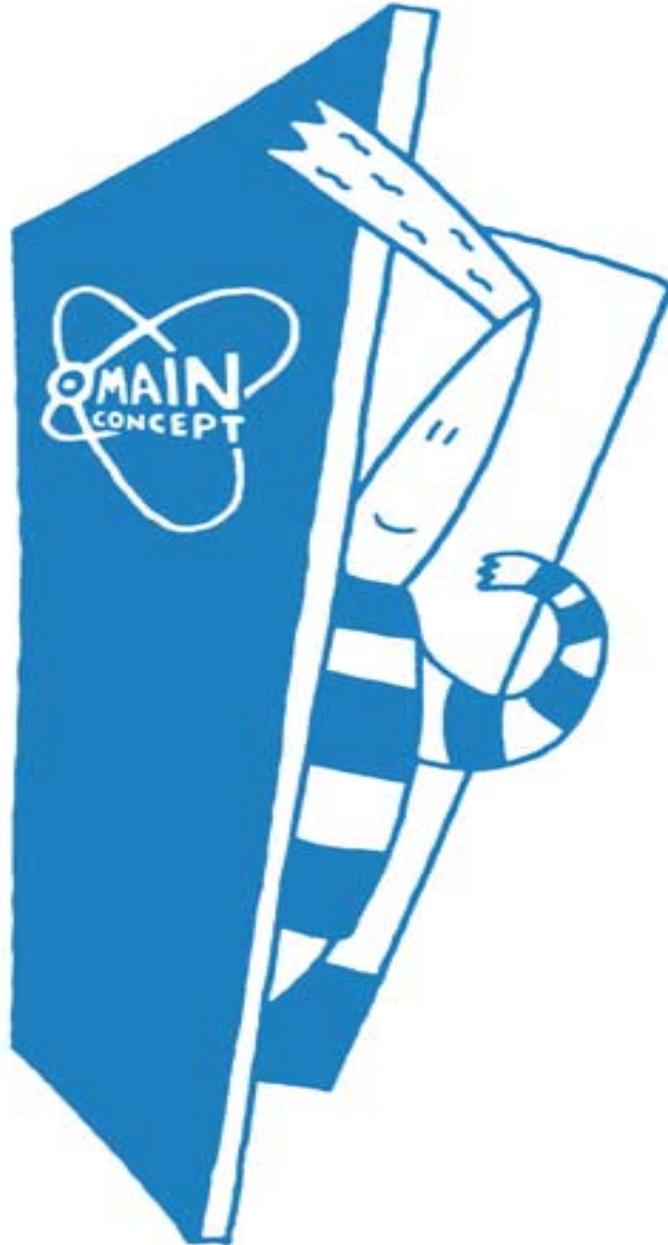
MainActor v5.2 Linux

In principle, the options and functions in MainActor v5 for Linux are the same as in the Windows version. Unfortunately, due to the operating system some features are not or not yet available under Linux in the final version.

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Introduction

Congratulations!

Welcome to MainActor v5! MainActor v5 is a powerful video-editing software for Windows. It enables you to import, edit and produce your videos in professional quality on a personal computer. The new unique MainConcept program combines video-editing with compositing.

With the new MainActor v5 you can capture your videos from an analog or a digital camcorder, video recorder (VCR) or even a DVD player, and cut as well as edit them to your heart's content. The program allows working with the DV and MPEG format. DV (Digital Video) is used by digital camcorders. In contrast the MPEG format is used for DVDs, Video CDs (VCDs), Super Video CDs (SVCDs) or other common formats. There are two different MPEG types: MPEG-1 features a lower but still good quality. MPEG-2 offers an excellent quality. The DV and MPEG format enable the user to do professional video-editing in highest quality. Therefore, numerous special effects, transitions and filters are at

your disposal. Import your video and audio clips in order to organize and edit them in a project on a track-based interface. The usage of several timelines makes it easy to work on different projects simultaneously. The diverse modules of MainActor v5 can be arranged according to you wishes so that you are able to create your individual interface. With MainActor v5 it is possible to produce your own spectacular films easily.

In the end you can export your project for the most common formats. A multitude of render settings allow the user output at the highest level. The default settings of the integrated MainConcept MPEG Encoder for Video CD, Super Video CD and DVD already guarantee results of extraordinary quality.

The manual is supposed to give you an overview of the general functions of the new MainConcept program. This manual has been simultaneously developed together with the software so that some screenshots may differ from the original program. Furthermore, it is possible that some functions are not implemented yet although they are explained in this manual. But they will be soon...!

However, we want to wish you a lot of fun with our latest product. If you have any suggestions on how to improve MainActor v5 please send us your feedback to the following email address: **suggestions@mainconcept.com**

Throughout the MainActor v5 manual you will be guided by a new character. It signals you when you have to pay attention or gives you some advice. But it also introduces the little tutorials in this manual. Here are the different characters and their functions:

When you see this little fellow with the megaphone you have to pay attention. He gives advice as well as some clever tips and tricks for working with MainActor v5. But sometimes he signals also a warning for the user, that some settings should only be changed by professionals.

This is the teacher in our MainActor v5 manual. The fellow with his little pointer introduces the tutorials you find throughout this documentation. Simply repeat the steps, described in these examples and try for yourself what interesting features the new MainActor offers. You will see: in no time at all you create impressive films with our video-editing software.

Unfortunately, the guy with the question mark appears only once. Well, let's say it is a good thing that he only appears once, and we hope that you will never need him. He gives you some information on how to reach the MainConcept support team.

Installation

From time to time, MainConcept will release new versions of MainActor v5 for Linux containing tweaks and new features. Before you install MainActor, we highly recommend checking the MainConcept website to see if a newer version is available for downloading.

If you downloaded the software, run the rpm-file that you downloaded in **YAST** and **K-Package** under SuSe. You can install MainActor v5 in the same way as you would do with other programs. Then follow the prompts on your screen.

Another way to install MainActor v5 is using a command line in the **Shell**. Simply enter „rpm -i (name of the file)" in the panel and press *Enter*.

It may take a few moments for the installation to start. This is because the installer program is decompressing large amounts of data. Then MainActor v5 will be installed on your Linux distribution.

Depending on the Linux distribution you use, the installation of the software and the starting process of the application might vary. Please read the documentation of your Linux distribution how to install software and how to launch programs on your system correctly.

MainActor v5 Linux is now installed on your computer. You can launch it from the shortcut icon that now appears on your desktop (depending on the installed Linux distribution). You can also start the application from the **Shell** by entering mactor and pressing the *Enter* key.

Overview

What is MainActor v5?

MainActor v5 is the successor of the popular MainActor 3.65. The new version of the video-editing software contains a lot of improved features of the old edition as well as numerous new functions which make it easy to edit your videos in professional quality.

The powerful MainActor v5 allows you to capture, edit and export your videos with your computer. Our new software offers innumerable audio and video tracks for working on a project. You can add transitions and effects to the clips in order to produce professional videos. The MainConcept product offers the time-saving background rendering as well as fast rendering and smart rendering for enhancing the productivity. The windows-based interface helps you to have all the important functions within easy reach. You can arrange the different windows according to your wishes, i.e. you can create your individual interface.

With the different tools you can edit and arrange your clips easily. The simple drag-and-drop interface enables you to place clips in a project directly in the timeline. It is possible to preview the clips in the **Media Player** before you use them. With the new MainActor

you can cut your videos to the desired length before you position them in the timeline, e.g. the user does the basic setup of his clips in a special Media Player and the fine-tuning in the Timeline later on.

The Timeline offers three different modes for inserting clips. The **Fill** mode simply places a clip in the Timeline. When you insert a clip in the **Overwrite** mode the clip will overwrite the video which is on the current position in the Timeline. Finally, you have an improved **Insert** function here. When you drag and drop a clip onto the Timeline using this mode the clip will be placed between two videos, and the duration will be defined automatically.

MainActor v5 includes innumerable transitions and special effects for creating impressive videos. To apply an effect or a transition you simply drag it onto the desired clip in the Timeline so that it appears on an individual track.

You can adjust further settings by double-clicking on an effect or transition. The settings are transferred to the **Effects** window where you can set e.g. the intensity, duration, frequency, opacity etc. This new feature makes it easy to create impressive effects in no time at all.

Furthermore, MainActor v5 offers several possibilities for editing the sound of a video. The user can adjust several settings concerning the volume, and add a different audio track to a clip. It also contains some sound effects for enhancing your videos.

In the following we will show you how to use the new MainActor v5 by introducing the key parts of the new software so that you get acquainted with them.

The different components of MainActor v5 are:

- The Timeline window
- The Browser window
- The Effects window
- The Preview window
- The Media Player
- The Menus

In the following we only want to give you an overview of the new MainConcept application. We will explain the different components of the interface in more detail later.

The Timeline Window

The Timeline window gives an overview of your project. In a project you import and edit your clips, add effects as well as transitions, and finally produce your finished video in a variety of formats.

In the Timeline window you can edit your imported clips on different video (**V1**) and audio (**A1**) tracks. It is also possible to organize and work with several timelines at the same time. Click on the tab to change the Timeline pane. The user has different areas for working with his video and audio data. The upper part of the Timeline window is for the video stream, and the lower one for the audio stream. Of course, you can change the size of each area so that you can minimize one part when you do not need it at the moment. You can also use the up/down and left/right controls in the window to scroll through a project.

The window shows the video as well as audio clips which are used in the current project. You can also see the length of the individual clips and the whole project. The video clips are placed on the **V1, V2, V3**... tracks. Each effect or transition is represented by a separate track directly under a clip. They can be identified by their names. You can also change the duration of both effects and transitions here. A new feature of MainActor v5 is that you can adjust a lot effect settings in a different window. Here you can also change the effect parameters by defining different keys, and changing the course of the curve in a polydiagram. This is called keyframe animation. Depending on the effect or transition you can adjust a lot of different settings over time.

As we mentioned before, the audio streams are placed on separate audio tracks (**A1, A2, A3...**). You can import individual audio files, and add audio effects to the Timeline. You can also change the settings for the volume (**Master volume, Left** and **Right channel**). It is even possible to change the volume over time. Then you simply define new keys in a polydiagram and change the course of the curve. If you want a better view of the Timeline you can hide both the curves of the audio and the video tracks.
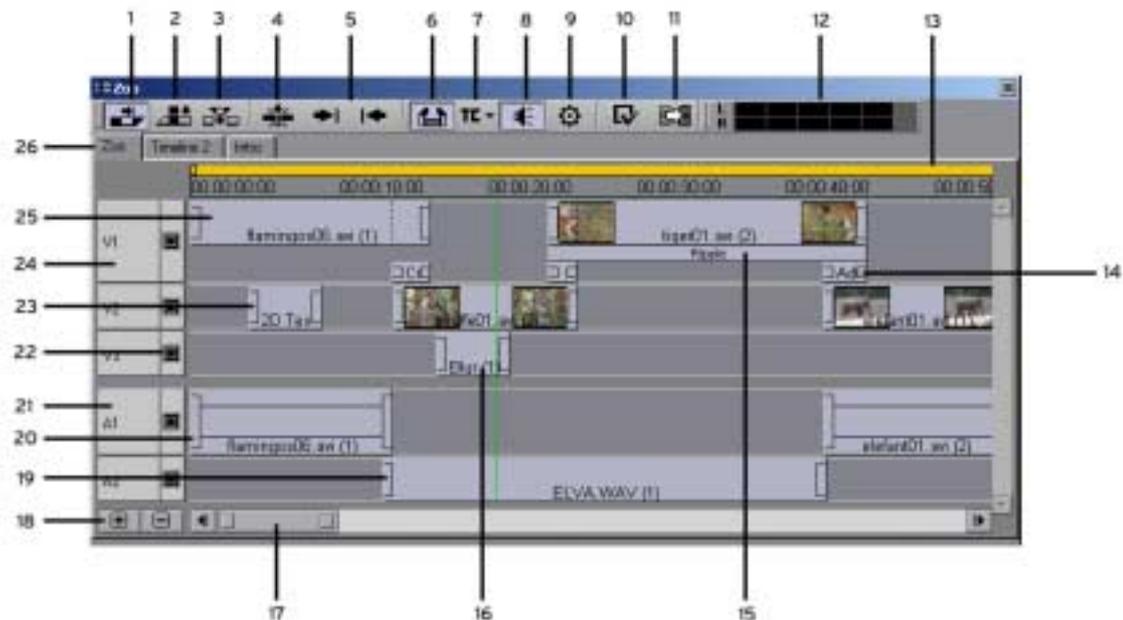
Button bar:

1. Insert mode
2. Overwrite mode
3. Fill mode
4. Cut
5. Jump to previous/next clip or cut
6. Toggle clip ends on/off
7. Change Timeline display
8. Sound on/off
9. Background Renderer on/off
10. Timeline Settings
11. Export/Render Timeline
12. Audio level (left and right channel)

In the Timeline:

13. Rendered area
14. Transition between two clips
15. Effect/filter on complete clip
16. Effect on a clip over a certain time segment
17. Control for moving around in a project
18. Zoom in/out Timeline
19. Audio clip/stream
20. Lever for extending a clip
21. Audio track
22. Enable/disable functions for a track
23. 2D Text on clip over a certain period of time
24. Video track
25. Video clip/stream
26. Timeline tabs

The numerous buttons, tabs and the drop-down menu on top of the Timeline work area perform the following functions:

The three buttons on the left activate certain modes for adding clips to the timeline.

The **Insert** mode is a normal placing function. It allows you to position clips freely on the timeline wherever you want to. When you add a clip between two videos, the duration will be defined automatically. The two clips on the left and right are moved according to the needed space, so that no gaps or blank space occurs in the timeline.

The **Overwrite** mode works like an eraser. If you add a clip to the timeline it overwrites the space it will need for its size, i.e. it deletes audio and video material which is placed on the current position.

The **Fill** mode enables you place a clip in a gap between two clips. In this mode only the free space will be filled with the clip, so that gaps can possibly occur. When you add a clip in **Fill** mode, a separate audio track is generated.

The next four buttons perform the following functions:

This button enables you to cut a clip directly in the timeline. Mark the corresponding clip and move the slider to the desired position. When you press this button the clip is divided.

By pressing this button you jump to the next cut or the beginning as well as the end of the next clip in the Timeline. The button also enables you to skip forth from clip to clip in a project.

By pressing this button you jump to the previous cut or the beginning as well as the end of the previous clip in the Timeline. The button also enables you to skip back from clip to clip in a project.

This button toggles the clips' ends on/off, i.e. when you activate this option it is possible to shorten as well as in some cases lengthen the clips, effects and transitions on the timeline. You simply click on the little lever at the beginning or end of a clip, so that it is highlighted, and drag it to the desired length.
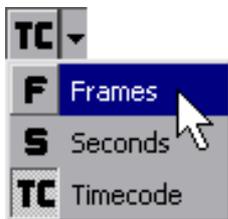
The drop-down menu in this bar allows you to change the Timeline display. When you click the button a drop-down menu appears. Here you can choose the preferred display: **Frames** (F), **Seconds** (S) and **Timecode** (Tc).

The button with the loudspeaker allows you to toggle the sound playback of the timeline on and off.

The **Toggle background rendering on/off** button allows you to enable or disable the background renderer. This feature already renders changes in the Timeline while you are editing your project. This unique time-saving option can greatly reduce the amount of time it takes to finish a project. When you press this button while holding the *Shift*-key, the background rendering for all Timelines is disabled.

The **Change timeline settings** button enables you to open a window where you can change a lot of general parameters for your project in the timeline (see the chapter **The Menus** for details).
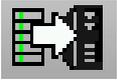
The **Export the timeline** (or Render) button opens a window where you can adjust numerous settings for the output file (see the chapter **The Menus** or **Exporting a Project** for details).
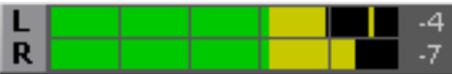
The **audio level** display shows the volume of your audio stream, i.e. it visualizes the volume of the left and right audio channel.

The tabs on top of the Timeline window allow you to switch to other timelines if you work on more than one project simultaneously. Simply click on the desired tab in order to skip to another project. You can create new timelines by choosing the **Create new** option in the **Timeline** menu. It is even possible to give every timeline an individual name. We will explain this task to you in detail later on.

The yellow line above the tracks indicates the area which will be rendered.

When you click the right mouse-button in the **Timeline** window, the following list appears.

Select All clips is self-explanatory. You simply mark all existing clips in the Timeline.

Select None deselects all chosen clips.

Cut, Copy, **Paste** and **Delete** are normal functions for working with clips in a single Timeline or between different Timelines.

Add video track adds another video track to the current project in the timeline.

Add audio track adds another audio track to the current project in the timeline.

Delete selected tracks is self-explanatory.

Resync clips allows you to rearrange the audio and video which has previously been separated so that they become synchronized again.

Select All clips	
Select None	
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del
Add video track	
Add audio track	
Delete selected tracks	
Resync clips	
Detach audio from video	
Show parameters	
Hide waveform	

**Detach video from audio** enables you to separate video from audio.

With **Show parameters** you copy the settings of the selected clips, effect, transition etc. into the Effects window.

Show/Hide waveform activates the audio stream's wave for defining the volume in the Timeline.

The Browser window

The **Project** pane is the browser of MainActor v5 which enables you to organize media files as well as effects, transitions and even a 2D-text engine. Clicking the desired tab enables you to switch through the different categories **Project**, **Effects** and **Keyword Search**. The drag-and-drop interface allows the user to place video and audio clips directly on the Timeline. You can use transitions and effects in the same way.
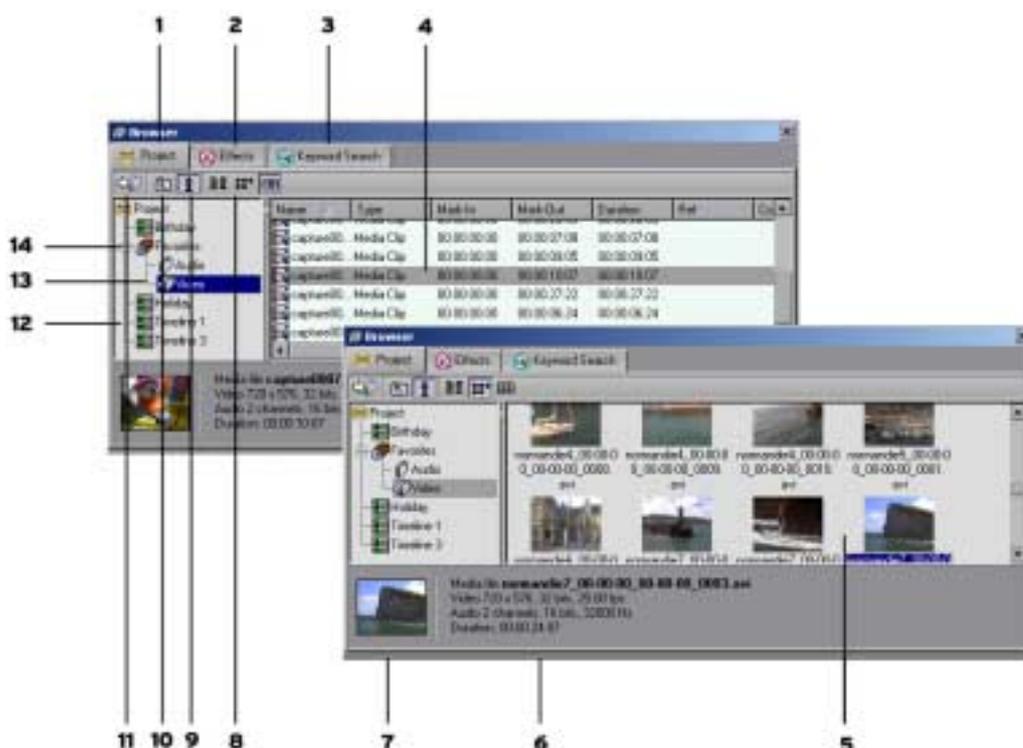
1. Active Project tab
2. Effects tab
3. Keyword Search tab
4. Several information about the media files in a folder (type, mark-In/Out, duration...)
5. Thumbnails of media files
6. Information about selected media file
7. Thumbnail of selected video clip

8. Active Detailed view mode button, Icon view, and List view
9. Detailed clip information on/off
10. Up
11. Add media clips button
12. Timeline icons
13. Open folder for media files
14. User defined clipboard

Depending on the chose view mode, the Browser gives information about the media clips, e.g. their names, type, resolution and length. It also displays information about the audio settings.

When you click the ℹ️ button, the Browser shows some information about the clip, effect, transition or source at the bottom, such as name, resolution, channels, duration etc. The small thumbnail on the left displays which file is selected at the moment. If a filter, source or transition is selected, you a preview and a short description of it.

When you start MainActor v5 for the first time the **Project** pane is empty. But it is possible to organize innumerable multimedia clips in this pane. It is advisable to create own clipboards (also called bins) and folders for video and audio files, especially when several users work on different projects. You can add video and audio files to these user defined clipboards and folders respectively. You can drag-and-drop the clips directly in the Timeline from there.

The **Project** pane can also contain clipboards and folders with edited effects, sources, titles or transitions as well as user defined audio and video clip segments. After you have changed their parameters in the **Effects** window, you can drag-and-drop it from there directly into the **Browser** window for using them in future projects.

Besides, the icons for bins, folders, video and audio clips the **Project** pane also includes a **Timeline** icon . It contains the contents of a complete Timeline, i.e. all clips, transitions, effects etc. This option is very useful when you want to combine several Timelines. Simply drag this icon into a new Timeline, and the complete contents is placed to the new one.

Depending on what item you right-click in the **Project** pane of the Browser (e.g. bin, folder, clip, Timeline), a list of different options appears on the screen. In the following we want to introduce the most important options here in detail. However, most of the settings are self-explanatory.
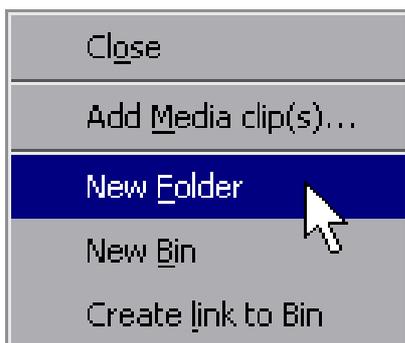
A new clipboard can be generated by moving the cursor into the left area of the **Projects** pane. Here you have to press the right mouse button and select **New Bin** from the menu's list. Follow the instructions in the dialog box to compile it. A MainActor v5 clipboard is saved with the file extension „mccb" (MainActor clipboard). Now you can add media clips or folders to the clipboard. The contents of a bin is automatically saved when you save the current project in the Timeline.

The clipboard is automatically loaded when you open the project in MainActor v5 again which goes with it. When you want to use a bin for another project you have to choose the option **Create link to bin** from the list above. In the following window you browse for the preferred clipboards.

To create a folder you simply select the appropriate clipboard and press the right mouse-button. Use the **New Folder** option to add a new folder to the bin. By choosing **Rename** after you have marked the folder you give it a desired name. In our example we chose **Video** and **Audio** as names for the folders. Of course, you can create more folders with different names. You can delete a folder by selecting it and choosing **Delete** from the list on the left.

You also find a normal **Copy**, **Cut** and **Paste** functions here for copying and cutting folders, clips etc. within the Browser.

The **Delete** option deletes a selected item from a bin or folder in MainActor v5. In doing so, only the link is removed but not the actual file.

Use the **Close (Save)** option to close and save the contents of a clipboard.

When a file is selected in a clipboard, and you press the right mouse button, the following options appear. Most of them are self-explanatory. So we only explain one of them.

The **Scenalyze...** option enables you to apply a scene detection to a clip in the browser. The clips you obtain during this process are added to a special folder in the **Project** pane of the Browser. You can run this option on a DV or an MPEG file.
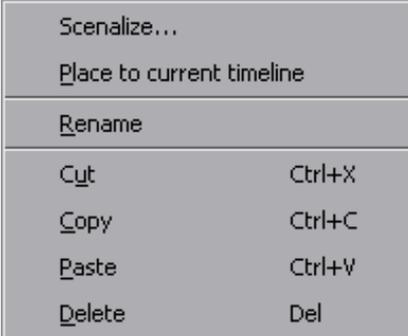
Scenalize...	
Place to current timeline	
Rename	
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Delete	Del

Place to Timeline adds a clip to the Timeline at the current slider position.

The options **Rename**, **Cut**, **Copy**, **Paste** and **Delete** are self-explanatory.

Now you can add media clips to the **Video** and **Audio** folders. Use the option **Add Media clip(s)...** to insert the desired clips into these folders. It is also possible to press the ![button] button to open the **Add Media file(s)** window. The appearing window offers also some additional functions for working with clips.
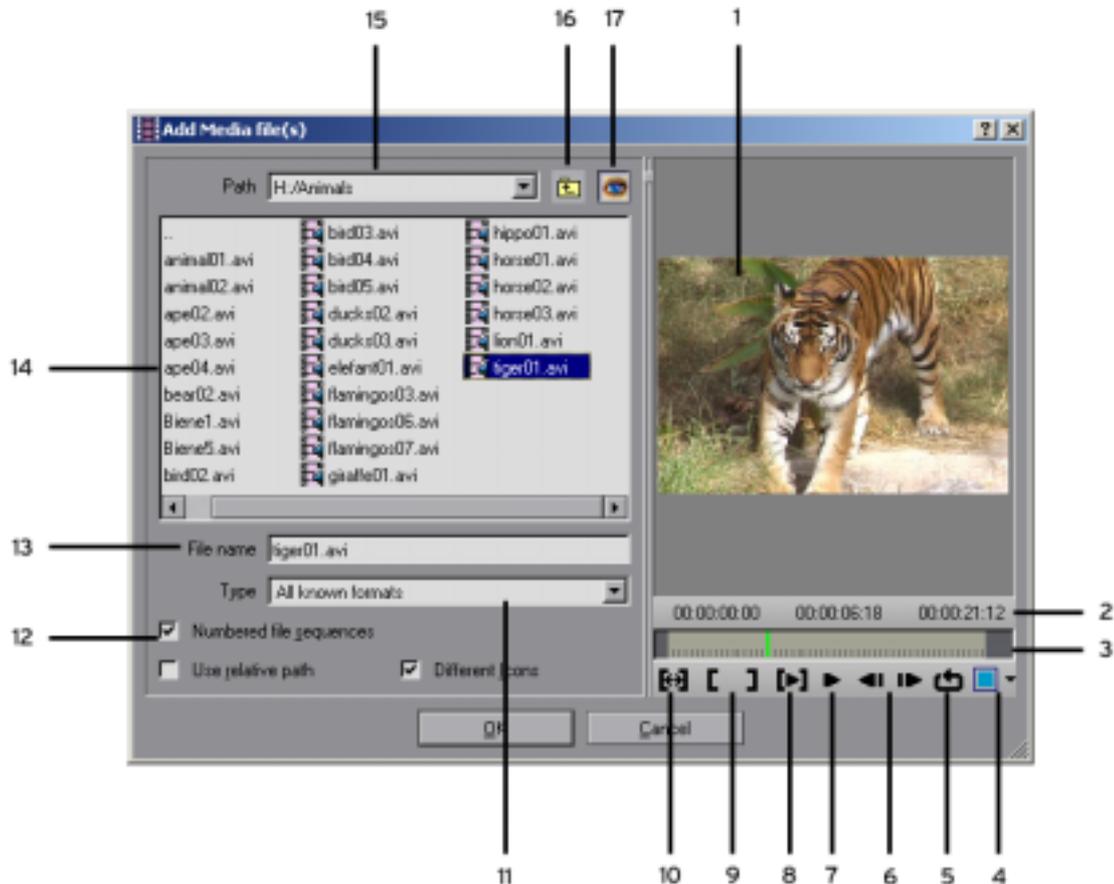
Preview area:

1. *Preview area*
2. *Set In/Out points manually, current position*
3. *Time display*
4. *Set fields mode, Deinterlace video*
5. *Loop*
6. *Frame foward/backward*
7. *Play/Stop*
8. *Play In/Out segment*
9. *Set In/Out point*
10. *Reset In/Out points*

File browser area:

11. *File type*
12. *Addtional settings for displaying and loading files*
13. *File name*
14. *Audio and video files*
15. *Current folder location*
16. *Up*
17. *Hide preview area*

In the **Add Media file(s)** window above you search for and select video as well as audio files you want to copy into the Clipboard for using them in projects. Mark the desired file and confirm with **OK** so that the clip is copied into the Clipboard and into the preferred

folder. You can also select several clips all at once. When you want to abort the task click the **Cancel** button.

You can add or delete multiple files at once. To select multiple consecutive items, hold down the *Shift* key, and click on the first and last file in the series you want to choose. The objects in between will also be selected. To choose multiple non-consecutive items, hold down the *Ctrl* key and click on the objects you want to select. In the **Add Media file(s)** window, you can also select multiple items by clicking and dragging in the area containing the items.

The **Add Media file(s)** window allows you to preview the complete clip, and trim your videos in advance by setting in points and out points. Use the controls under the preview area to define the frames. When you confirm with **OK** only the previously selected frames are copied to the Clipboard window.

It is also possible to hide the preview area. Simply click the button in order to close the player. When you click the button again the preview area appears again.

On the left of the window there are also three checkboxes which perform the following functions:

The **Numbered file sequence** option is useful when you want to import e.g. a series of numbered pictures and clips. When the checkbox is ticked the image files are handled as a single clip. If the checkbox is disabled all these files are displayed, so you can import them individually.

If the checkbox **Use relative path** is enabled the imported files are handled using a relative path.

The **Different Icons** checkbox enables you to specify whether MainActor v5 should display only one icon for audio as well as video files, or whether you want to display different icons for video and audio files.

When you have copied the selected clips to the clipboard, you can use them in your projects. Simply drag-and-drop them in a video or audio track in the Timeline window.

Beside the **Project** pane you also find the **Effects** pane here. You reach it by clicking the **Effects** tab. The window contains several folders which include both special effects and transitions.

1. Project tab
2. Active Effects tab
3. Keyword Search tab
4. List of transitions
5. Icon view of effects
6. Description of the selected effect
7. Open effects folder
8. Preview of the selected effect (transition, source, filter)

9. List view mode button, and activated Icon view mode button
10. Detailed effect information on/off
11. List of transition folders
12. Audio, Filters and Sources folders
13. Up

When you click a folder its content is displayed on the right side of the **Effects** pane as shown in the top image. When you click an effect or a transition in the left part of the window a preview or icon, and a short description of the chosen item appears in the right part of the **Effects** pane (lower image).

You apply an effect by dragging-and-dropping it from the Browser directly on a clip or under the clip on a different track. The name of the effect appears under the chosen clip now. When you double-click the effect you copy its settings to the **Effects** window. In this window it is possible to change the parameters of the effect (or a transition) but this is described in detail later on.

A transition is used in a similar way. You have one clip on Track 1 (**V1**) and a second one on Track 2 (**V2**). Now you drag-and-drop a transition on the beginning of the second clip

so that its name appears under the clip. A double-click on the transitions' name copies its settings to the **Effects** window where you can adjust several parameters.

An additional feature in the Browser window is the **Keyword Search** panel.
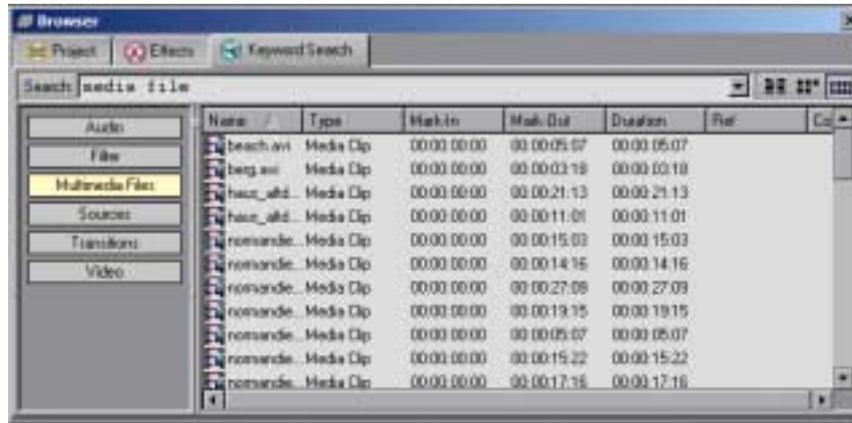

The **Keyword Search** engine with its quick access buttons allows you to look for certain items within MainActor v5. You can search for video, audio, transitions, effects, filters and so on. You can also search for keywords manually. Simply enter the keyword's letters into the *Search* prompt. MainActor v5 gives you helpful suggestions if it finds letters and words which match with the entered letters. You can drag-and-drop the items from the **Keyword Search** pane directly on a track in the Timeline.

It is even possible to create own keyword buttons and edit them. Move the cursor into the button area of this pane and press the right mouse button. Choose **New Keyword button...**, and follow the instructions on the screen. Afterwards, you can edit the new button. Move the cursor onto the new keyword button and press the right mouse button. Then choose **Edit Keywords...** from the appearing list.

The Effects window

The MainActor v5 **Effects** window offers a lot of settings for effects, sources, transitions, clips and streams. You can adjust a lot of effect parameters in the effects' setting windows in order to fine-tune them. You reach it by double-clicking the desired effect track. After you have edited an effect, filter, transition etc. you can save it with the new settings in a clipboard in the Browser's **Project** pane for future use.
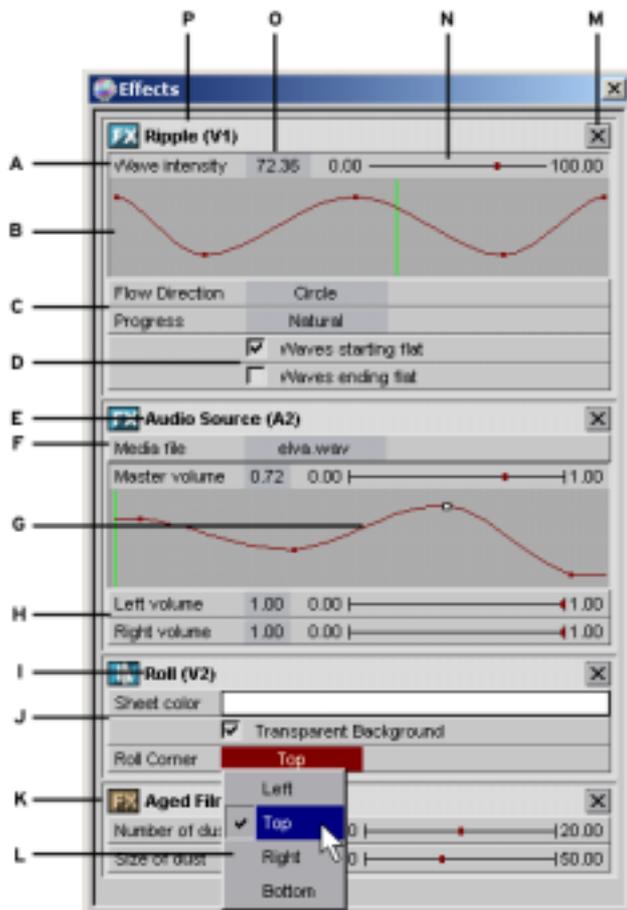
A. Video effect/filter option button which opens the polydiagram
B. Polydiagram for editing an effect over time
C. Video effect parameters
D. Additional checkboxes for editing an effect
E. Audio source on track
F. Name of audio clip/stream; click the name to change it
G. User defined keys over time in a polydiagram (volume)
H. Volume settings for audio source/ stream
I. Name of transition
J. Several transition settings
K. Icon for dragging-and-dropping user-defined effects, filters, sources and transitions into the Browser in order to use them for future projects
L. General transition settings in drop-down menu
M. Close transition/effects settings
N. Slider for setting a certain effect value
O. Display button for setting the value manually
P. Name of the video effect/filter on track

When you copy an effect or a transition into the **Effects** window you can change its parameters in the relevant settings window. There are various ways to change the parameters as shown in the screenshots. Simply click the effects' or transitions' settings, and perform the desired changes, e.g. by dragging a slider, choose another option from a drop-down menu or entering new variables. Each effect has predefined settings which can be used easily. Settings are available for audio and video effects as well as for transitions.

You can adjust the volume for audio files or audio streams, too. Double-click the audio clip so that the settings are copied into the **Effects** window. It is possible to change the audio

track's master volume by dragging its slider. You can also turn up or turn down the volume of both the left and the right speaker separately.

To save an edited effect, source, title, transition or even cut audio and video streams, click the small **FX** icon or the thumbnail on the top left in the header and drag it into clipboard or folder of the **Project** Browser. You can now use it for future projects as usual.

Click the little **X** in order to close the effect's setting window. You find it in each name bar for the effect, transition, audio stream etc.

The Preview window

MainActor v5 contains a typical **Preview** window in order to have a look at your project or clips before you export them. You can change the size of the window and place it on the screen wherever you like.

Under the preview area you find several buttons which perform different functions for watching a video or project.

A. *Preview area*
B. *Limit marks (beginning and end of yellow line)*
C. *In-point specification, Current frame, Out-point specification*
D. *Set In-point, Set Out-point*
E. *Preview In/Out segment*
F. *Start/stop preview*
G. *Display with green slider for moving through a clip or a project*
H. *Frame back, Frame forward*
I. *Loop*
J. *External Display Plug-ins*
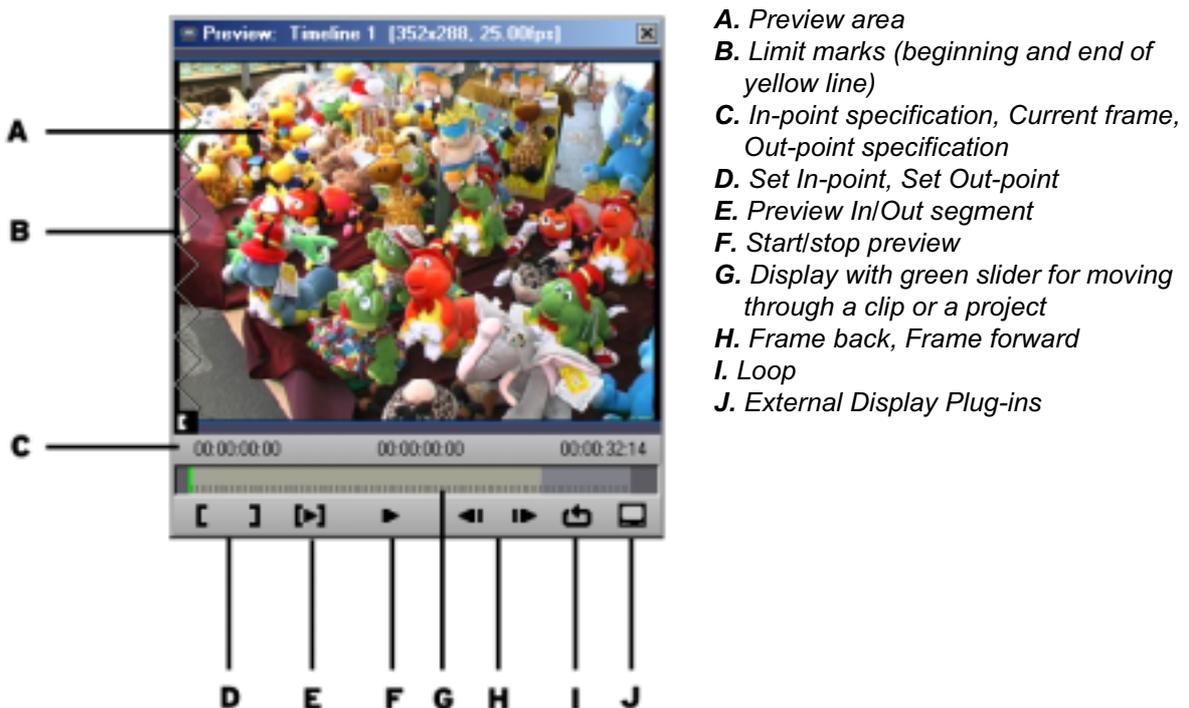
In the **Preview** window you do not only have the opportunity to preview your project or clips but also to set different in points and out points, so that only certain segments are played back or used in a project. By using the green slider you move quickly through your clips and projects. Move the slider to the position where the playback shall start. Then

press the **Set In point** button (**D**). Afterwards, drag the slider to a desired end position of your project or clip, and press the **Set Out point** button (**D**). To preview this segment click the **Play** button (**F**). When you press the button again the playback will be stopped. There are also some other functions here we will describe in detail later on.

When a clip is dragged from the **Media Player** into the **Preview** window, it is placed on a Track at the current slider position in the Timeline.

When you have a wheel on your mouse and use it while the **Preview** window is active, you can scroll one frame or more frames forward as well as backward.

When you press the right mouse-button in the **Preview** window, a list with different options appears on the screen. The options perform the following functions:

Fit image	Enter
Resize to 1:1	1
Resize to 1:2	2
Zoom In	+
Zoom Out	-
Safe frame	
Limit marks	
See Alpha channel	
Export...	Ctrl+E
Settings...	

Fit image fits the picture exactly to the **Preview** window's size.

The option **Resize to 1:1** displays the clip in its original size.

Resize to 1:2 displays the video by half of the original size.

Zoom In maximizes the preview area.

Zoom Out minimizes the preview area.

If you enable the **Safe Frame** option, a frame within the preview area is displayed. It indicates the area, which will be visible on TV after exporting the project. **Safe Frame** is a useful option while working with titles.

Limit Marks enables or disables the display which appears at the beginning or end of a clip as well as a project.

See Alpha channel makes the alpha channel visible for tweaking some effects which work with it.

The **Export...** option open the corresponding window. We will explain the **Export** window and its settings in detail later on.

The **Settings...** option opens the **Timeline Settings** window where you can change the current parameters for working in the Timeline. We will explain the various settings of this window later on.

The **External Display Plug-ins** button enables you to watch a project on the monitor of a DV camcorder. It is even possible to play back the Timeline to a DV camcorder by using this option.

You have also the opportunity to use your TV as control monitor. Most DV camcorders have a video output that runs parallel to the FireWire® output. This allows the user to connect the camcorder to a normal TV which offers a far more larger preview area.

Additionally, the PC monitor can modify the video image, because contrast, brightness and colors of the original clip might not be displayed correctly. You can use the TV as a good supplemental monitor to the usual PC monitor.
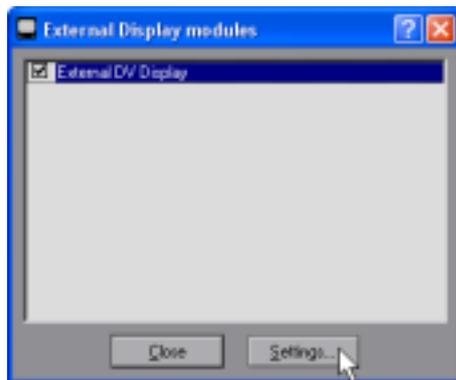
Set your DV camcorder to *VCR* mode. Then click the **External Display Plug-ins** button to open the list of modules which are connected to your system. At first, activate the checkbox **External DV Display**. As you can see the **Settings...** button at the bottom of the window is enabled now. Clicking this button opens another window where you can adjust the necessary settings for using your DV camcorder as a control monitor or playback device.

The **External DV Display Settings** window offers two different options for configuring your DV device:

The drop-down menu **Device** enables you to specify the correct DV device which is connected to your computer. It might be possible that several devices are connected to your computer, so you have to choose the one you want to use for playback or as a monitor.
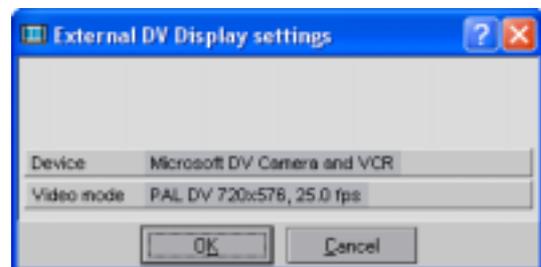
Under **Video Mode** you select the correct video standard of the DV device: PAL or NTSC.

To play back a project from the Timeline to a DV camcorder you have to perform the following steps. You have to use the DV devices own controls to start the playback. At first, start the preview of your project in the **Preview** window by clicking its **Playback** button. Then press the **Record** button on your DV camcorder to start the playback session. Now the Timeline is recorded to the tape in your DV camcorder. To finish the playback, press the **Stop** button on your camcorder.

The Media Player

The **Media Player** allows you to see and/or hear clips in advance before using them in a project. To watch a clip in advance double-click its name in the **Project** pane. But it is much more than a normal Media Player, because it allows you to cut clips before using them in the actual project.

A. Preview area
B. In-point specification, Current frame position, Out-point specification
C. Mark In/Out for the whole clip (Reset in/out points)
D. Set In-point, Set Out-point
E Preview In/Out segment
F. Start/stop preview
G. Slider for moving through a clip
H. Frame back, Frame forward
I. Loop
J. Set fields mode (No fields, Upper field, Lower field, and three different Deinterlace modes)
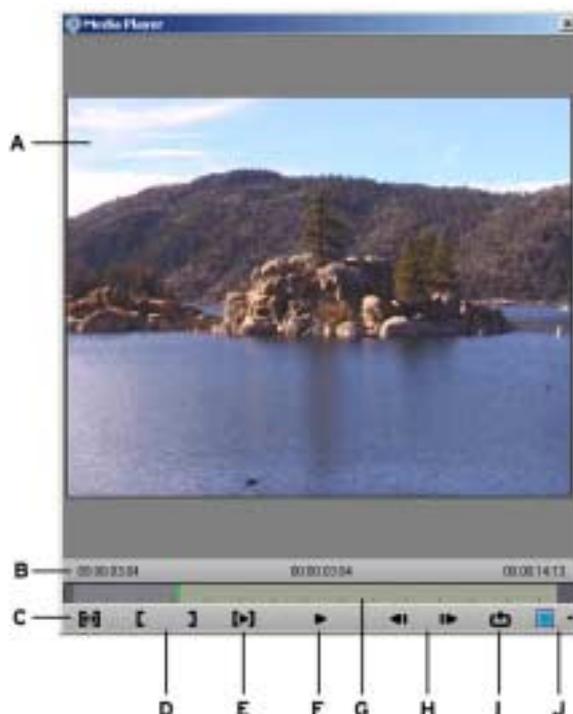
It is also possible to drag a clip directly from the clipboard into the **Media Player** for previewing it.

When you have a wheel on your mouse and use it while the **Media Player** is active, you can scroll one frame or more frames forward as well as backward.

The button with the blue box on the right of the Media Player enables the user to set the correct field order: **No Fields (progressive frames), Upper Field**, **Lower Field**, **Deinterlace (use upper field, discard lower one)**, **Deinterlace (use lower field, discard upper one)**, and **Deinterlace (use both fields)** (**J**). This setting should match the field order of the source video.

The **Set In-point** and **Set Out-point** buttons (**D**) enable you to cut clips in advance, i.e. before you use them in a project. For example: you have a long clip, you need several scenes from. Simply specify for every scene mark-in and mark-out points by using the corresponding buttons. It is even possible to define these points manually. Then drag the specified segment from the **Media Player** directly onto a track in the Timeline. And alternative way for placing clips on a Track in the Timeline is to drag them into the **Preview**

window. Then the clip is added to your project at the current slider position. We will explain you how to cut clips with the **Media Player** in detail later on.
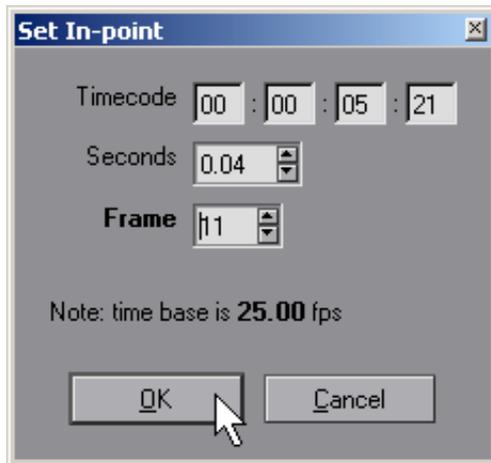
When you click the **In-point specification, Specify current frame position** or **Out-point specification** buttons (**B**), you can set the desired position manually. In the following window you can enter the Timecode, the Seconds and the Frame when the clip's preview will start. You only have to enter the value for one option here. The rest is adjusted automatically, after you have confirmed the settings.

The time base for PAL is 25 fps, and for NTSC it is 29.97 fps or 30 fps.

Pressing the right mouse-button in the preview area of the **Media Player** opens a list with different options:

When you enable the function **Process fields during playback**, a deinterlacing is applied to the video in the Media Player.

The option **Change sequence frame rate...** is useful, when you want to use a series of still images. The default setting of MainActor v5 is PAL, i.e. 25 fps. When you want to use a series of still images in NTSC, you have to select the option in the Media Player and set it to 29.97 fps.

Using the **Close media** option, removes the current file from the Media Player.

The option **Display Aspect Ratio** enables you to define the ratio of width to height of the clip in the Media Player. Here you find settings such as 4:3, 16:9, 5:4 etc.

Working with MainActor v5

In this chapter we want to show you how to work with MainActor v5 and especially the Timeline, i.e. how to add tracks, clips, transitions and effects to your project. The Timeline consists of video tracks (for video streams) and audio tracks (for audio streams). It is the place where you arrange and edit your clips after you have captured them. The simple drag-and-drop interface makes it easy to arrange your clips in the Timeline.

When you use titles, transitions and effects, you are not actually altering your source files. MainActor v5 uses a non-destructive approach — it leaves source items intact and renders new frames showing the effects of any editing operations.

Adding tracks and clips to the Timeline

Before you can add clips to the Timeline you have to insert them to clipboards or folders in the Browser window. We have already explained you how to create bins and folders. We assume that you have already created media folders for your clips.

You can drag a clip from the clipboard in the Browser window directly onto the track (V1) in the Timeline. When you use this method you have to copy the desired clip(s) to the clipboard before as described earlier in this manual. As you can see the clip contains an audio stream, too, so that MainActor v5 automatically creates an audio track for the clip (A1).
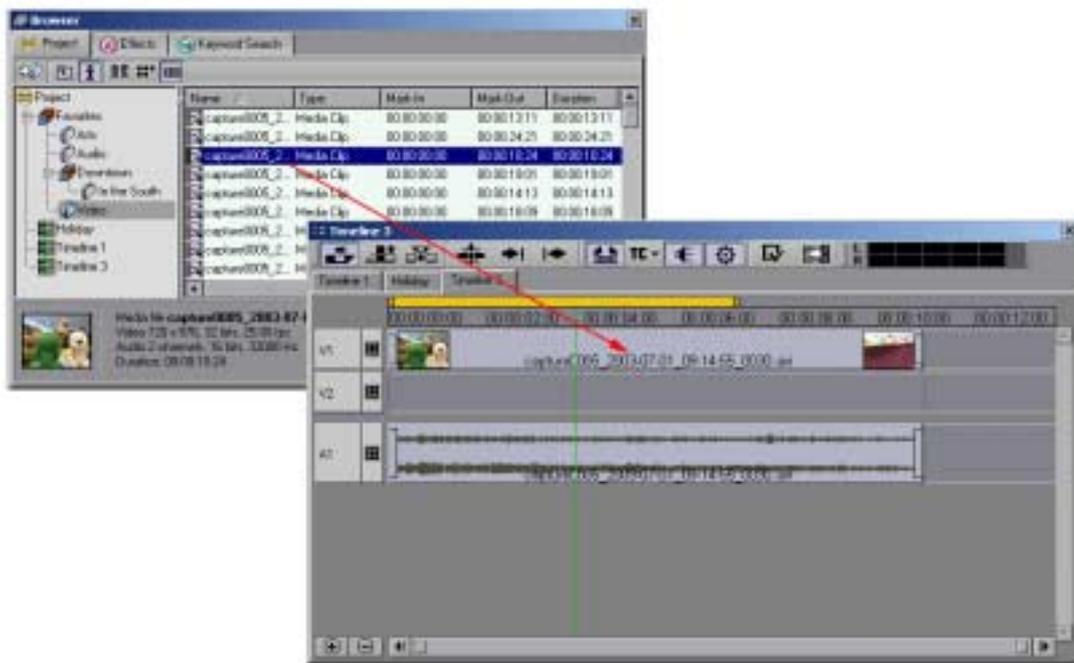
As default setting MainActor v5 links the video and audio streams of a video clip, i.e. when you move a video into the Timeline window its audio changes position as well. You can unlink the selected video and audio streams by holding the *Ctrl* key, and click the desired object in the Timeline. Now you can move them separately.

We want to present you how you create bins and folders for your multimedia clips again. While explaining this procedure we can also show you how to add a new track to a project.

Move the cursor into the **Timeline** window and press the right mouse-button. An options menu appears on the screen. Choose **Add Video track** from the list (**Add Audio track** is also possible). A second track (V2/A2) appears in the Timeline window. You can now assign a new clip to the track. But before we are able to do so we have to add new clips to the Browser. For that reason you have to create a clipboard which contains folders for the clips.
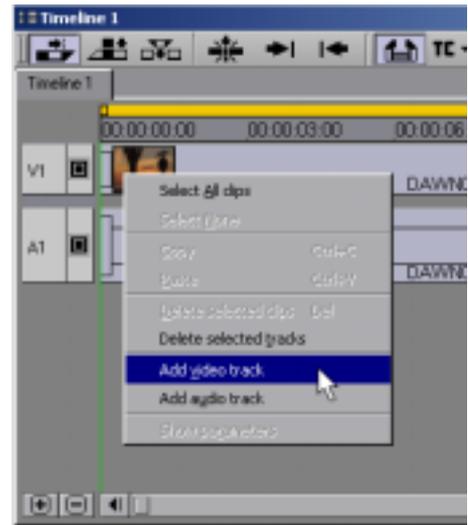
At first, activate the **Project** tab by clicking it. We want to create a new folder for the bin where you can store your video clips. Move the cursor into the left side of the Project window, and press the right mouse button. Choose **New Folder** from the list. You can give it a different name by selecting it and pressing the right mouse-button. Choose **Rename** from the appearing list. Now you can enter a new name for the folder.

To add a clip or several clips to the new folder you have to select it and press the right mouse-button. Choose **Add Media clip(s)...** from the list. Alternatively, you can press the icon (highlighted by a red circle) in the **Project** pane to open the **Add Media file(s)** window.

In the **Add Media file(s)** window you can search for the desired clips. It is also possible to pick more than one clip. You can add or delete multiple items at once. To select multiple consecutive items, hold down the *Shift* key and click the first and last item in the series you want to choose. The objects in between will also be selected. To choose multiple non-consecutive items, hold down the *Ctrl* key and click on the objects you want to select. Confirm your choice by pressing **OK** button.

You have also the opportunity to choose only selected frames for your project. Use the controls under the preview area to trim a clip in advance. We have already explained the functions of the buttons in the paragraphs **Preview** window and **Media Player**.

The clips are added to the particular folders. The **Project** window shows the names as well as some additional information about the clips. You can choose between two view modes:

The **List view mode** button shows media files, effects, transitions etc. in a list but only displays their name.

The **Icon view mode** button shows frames or previews of the above mentioned items. When the **Project** tab is active you can see the name and the first frame of the chosen clip. When the **Effects** pane is visible you can see a preview of the effect, transition, filter etc.

The **Detailed view mode** button shows media files, effects, transitions etc. in a list which contains a lot of additional information, such as *Media type, Mark-In, Mark-Out* as well as *Duration*.

When you have added media clips to a clipboard the Project pane looks like this. The upper window shows the **Detailed view** and the lower one the **Icon view**:
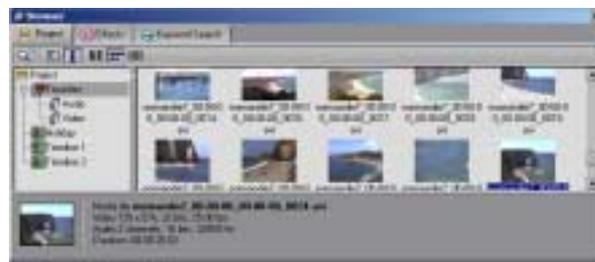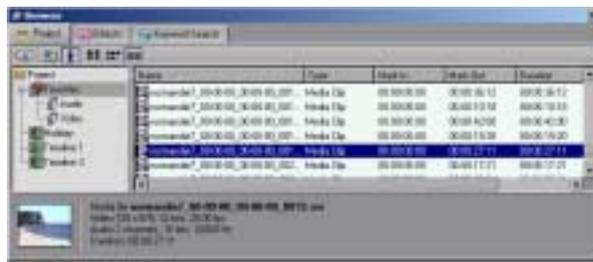
Now you can place the clip on the Timeline as shown before. You can preview your project any time you want by using the buttons in the **Preview** window.

If you want to delete a track, simply move the cursor into the **Timeline** window, and select the clip you want to remove. Then press the right mouse-button, and choose **Delete selected clips** from the list. You can also delete a clip by pressing the *Delete* key on your keyboard.

MainActor v5 offers three different modes for inserting a clip in the Timeline: **Insert**, **Overwrite** and **Fill**. When you add a clip in **Insert** mode, the next video in the Timeline will move to the right. The result is that the complete new clip is in the corresponding track now. In **Overwrite** mode, the added clip deletes parts of the one which has been on the

track before, i.e. the whole added clip is in the corresponding track now, and the overlapping parts of the previous one are deleted. When you add a clip to the Timeline in **Insert** and **Overwrite** mode, an additional audio track for the corresponding audio streams is not created, i.e. although the video stream is in track 2 the audio stream is still in track 1. When you insert a clip in **Fill** mode only the gap between two video or audio streams is filled, so that parts of the added clip will not be seen later on. In **Fill** mode, MainActor v5 automatically creates an additional audio track, and places the video as well as the audio stream on the chosen track.

Tutorial - How do I organize media clips in MainActor v5?

Especially the novice is thrilled by the numerous features a video-editing software offers, but some basic functions can only be found by accident. One thing which belongs to this topic is the organization of multimedia files. This tutorial will show you how to import and organize your media clips in MainActor v5. We will explain you how to generate clipboards as well as folders. Furthermore, we want to show you how to import media clips and trim them in advance. In the future, organizing media clips will be easy for you!

1. When you launch MainActor v5 for the first time, a predefined clipboard called "Favorites" is generated. You can use it for storing your files and clips. The advantage is, that you do not need to load the clips over and over again when you want to use them. If you work on a project with several users, everyone has his individual bin for organizing his media files. This makes it easier for you to have a better overall view of your project. But how do I generate my own clipboard? At first, activate the **Project** pane of the Browser, and move the cursor into the left part of it. Press the right mouse-button, so that a list with different options appears on the screen. In order to create a new clipboard, choose **New Bin**.
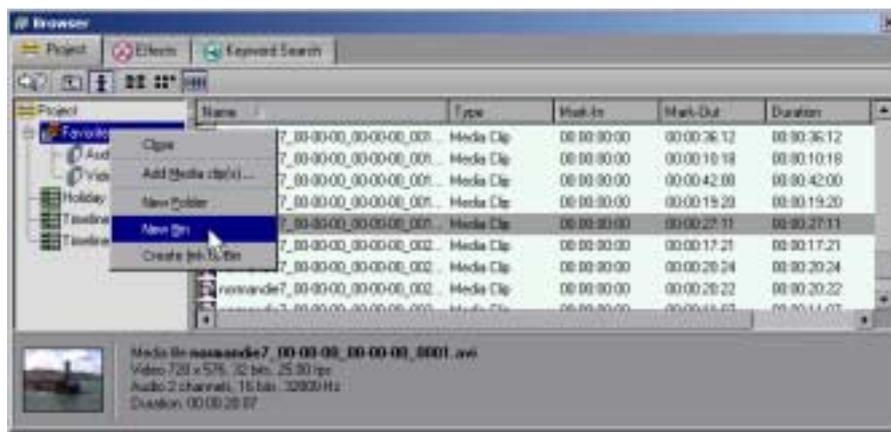
2. In the following window you can specify the name as well as the destination of the new clipboard, so that other users have the opportunity to get access to the clips. In our example, we have named the bin *Downtown*. Confirm your settings by pressing the **Save** button.
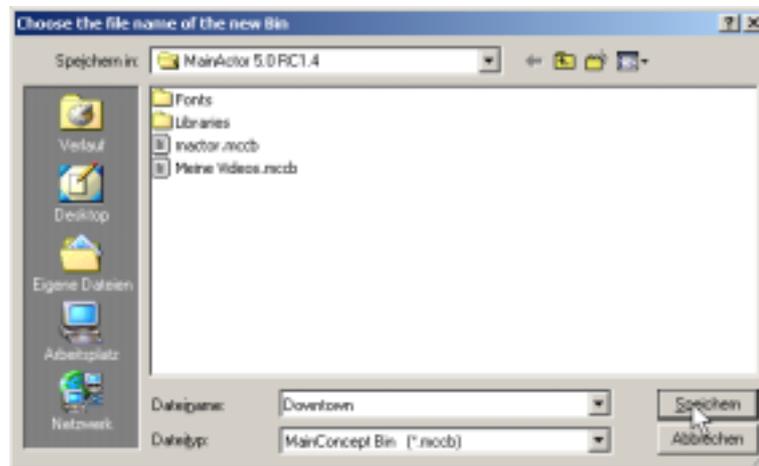
As already mentioned above, other users can have access to clipboards and their content as well by loading them into the Browser. Move the cursor into the left part of the **Project** pane, and press the right mouse-button. Choose the option **Create link to bin** from the appearing list. In the following window you can search for the desired clipboard(s).

3. For gaining an even better overview, you should make more subdivisions in order to organize your media clips. For that reason, we will generate folders for the clips in the **Project** pane of the Browser. You can name and organize them according to topics, events etc. Thus you find the desired files quickly and without any trouble. This makes working with projects quite easy. To create a folder, move the cursor into the left part of the **Project** pane, and select the clipboard, you created a few minutes ago. Press the right mouse-button and choose **New Folder** from the options' list.
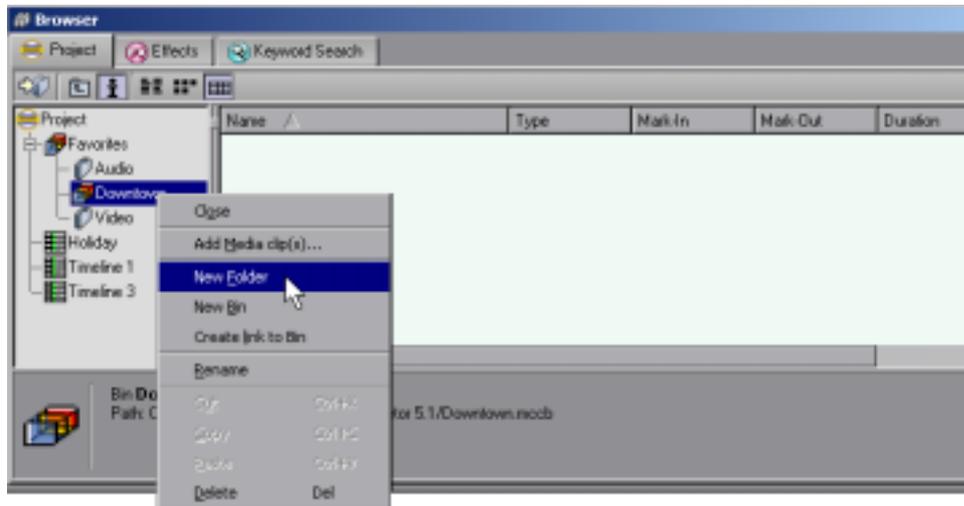
As you can see, MainActor v5 automatically creates a folder. You can enter a new name for the folder in the input prompt at once. In our example we named the folder *In the South*.
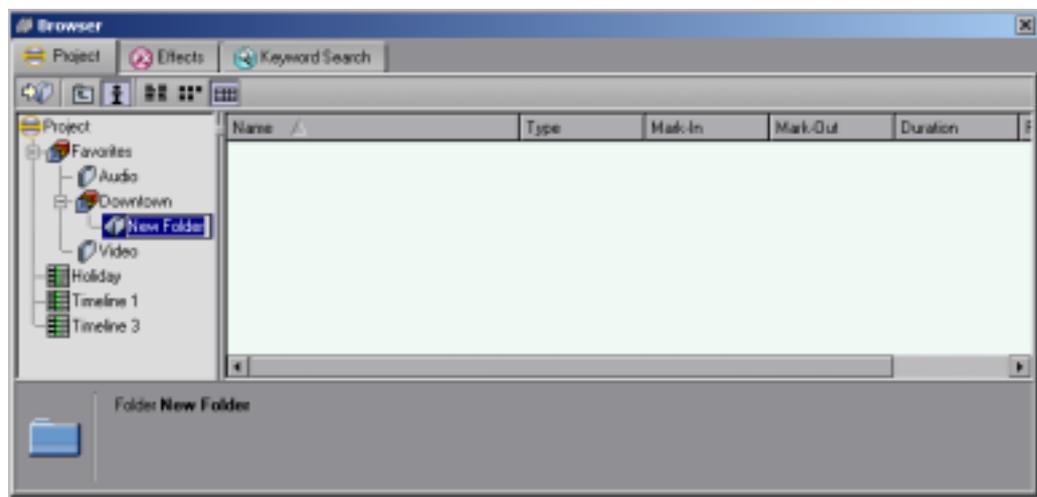
You can also rename folders later on. Simply mark the correspon-
ding item you want to rename. Press the right mouse-button, and
choose **Rename** from the appearing list. Then you can enter the
new name for the folder.

4. Now we want to insert the preferred clips into the previously defined folder. Move the
cursor into the **Projects** pane and press the small **Add Media Clips** icon at the bot-
tom-left of the Browser, in order to open the corresponding window.
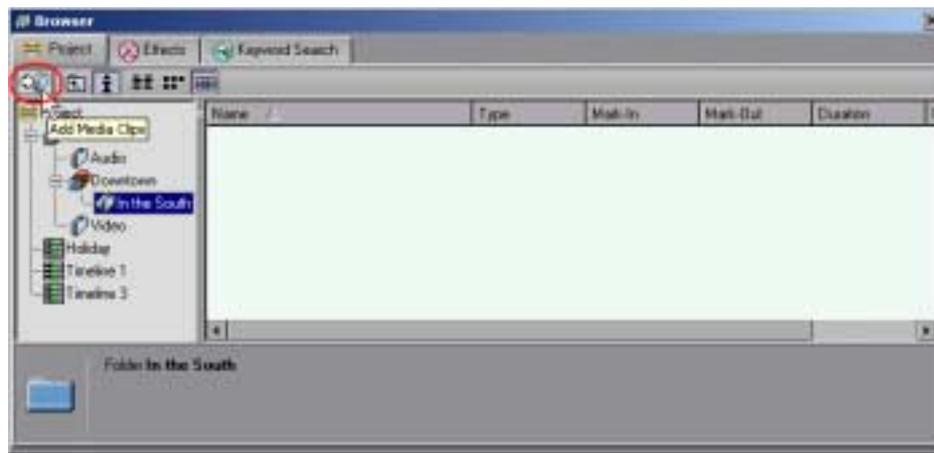
Alternatively, you can open the window for choosing media files by
selecting the clipboard or folder you want to use for storing your
clips. After you have selected the corresponding bin or folder, press
the right mouse-button, and choose the **Add Media Clip(s)...** option.

5. In the **Add Media file(s)** window (sometimes called *Select Media* window) you can search for and load the desired files in the highlighted folder. Select the desired clip(s) you want to use as you are familiar with in other applications. You can start a preview of the clip in the right part of the window. But we will show you how to do this later on. In the **Add Media file(s)** window you can add or delete multiple files at once. To select multiple consecutive items, hold down the *Shift* key, and click on the first and last file in the series you want to choose. The objects in between will also be selected. To choose multiple non-consecutive items, hold down the *Ctrl* key and click on the objects you want to select. In the **Add Media file(s)** window, you can also select multiple items by clicking and dragging in the area containing the items. Confirm you choice with **OK**.

6. If necessary, you can trim the clips in advance, i.e. before you add them to a folder. Use the controls under the preview area, in order to find the position you want the clip to start. After you have found the correct position, press the **Set IN-point** button (or the **I**-key), so that the point will be defined. Repeat the steps for the out-point but press the **Set OUT-point** button (or the **O**-key) instead. After you have defined the in and out points for the clip, press the **OK** button for confirmation.

7. Now you can use the desired files for a project. Select a clip in the **Project** pane, and drag it into the first video track (**V1**) in the **Timeline** window.
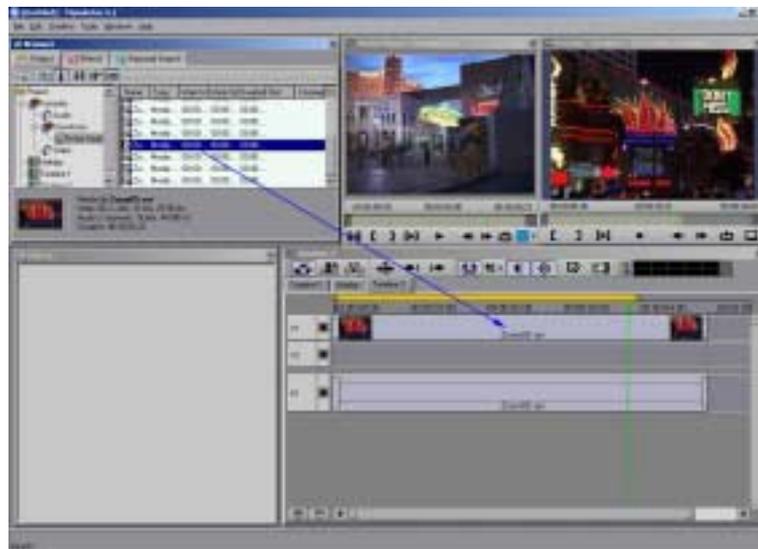
You can also add a clip to a track by dragging-and-dropping its thumbnail into the **Timeline** window. The thumbnail is displayed at the top-right of the **Project** pane.

8. Now you can generate more clipboards and/or folders, in order to organize your multimedia files. Organizing media clips can be quite easy with MainActor v5!

Using the Scenalyze option in the Browser

The **Scenalyze** option enables you to apply a kind of scene detection to a DV or MPEG clip in the Browser. The clip segments created in this process are added to a special folder in the **Project** pane, and can be used as individual video clips.

When you use the **Scenalyze** option, you do not cut the clips on the disk physically. It only generates In and Out points for the original clips, so that the source material remains untouched and it won't require any additional disk space.

At first, select the clip in the Browser, you want to apply the **Scenalyze** option to. Then press the right-mouse button and choose the **Scenalyze...** function from the list.
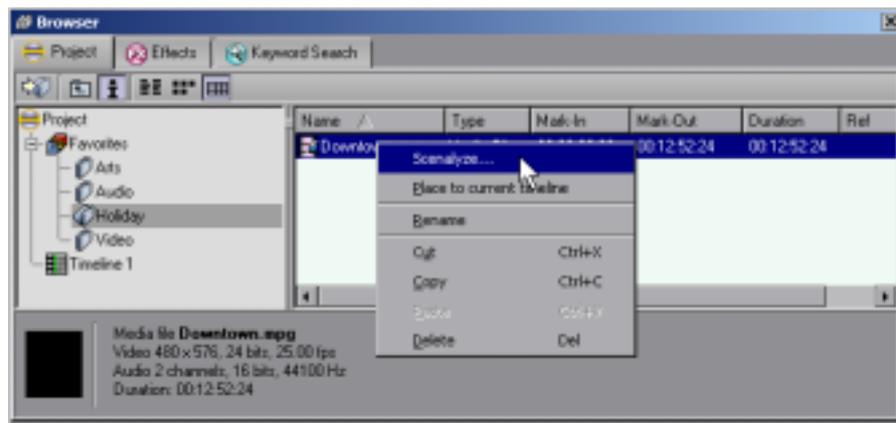
In the following dialog you can specify a name and a number for the clip segments, so that the individual scenes are numbered consecutively. Ticking the checkbox **Place detected scenes in a separate subfolder** adds the detected segments to a new generated folder in the Browser. Confirm your settings by pressing the **OK** button.
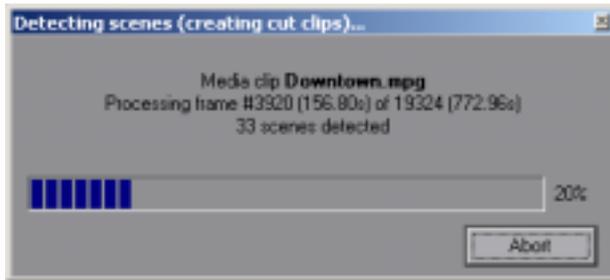
In the following window you can watch the scenalyzing process. The progress is displayed in the corresponding progress bar. Press the **Abort** button to cancel the process if necessary.

The generated segments are added to the specified subfolder in the **Project** pane of the Browser.

Working with video clips in the Timeline

With MainActor v5 you have the opportunity to edit some clips' parameters although they are already in the Timeline. Move the cursor to the desired clip and double-click it so that its settings are copied to the **Effects** window.

Under **Media File** you can select a different video clip for this position in your project if required. Click the button and follow the instructions in the appearing **Add Media file(s)** window on the screen. In this window it is also possible to trim a clip.
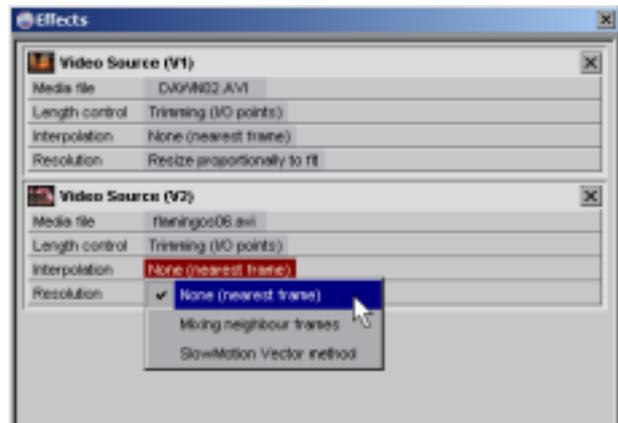
Under **Length control** you have two options concerning the length of clips: The **Trimming (I/O points)** function means that the length of the clips always corresponds to the media footage's length it represents, i.e. you cannot resize a clip to two seconds if the file contains only one second of video. In this case you can only shorten the clip. The option **Fitting (freely resizable)** lets you freely resize the clips. By using this option you can extend as well as shorten a clip. In this case the internal clip speed will change, i.e. slow motion will be activated but only if interpolation is turned on.

The drop-down menu **Interpolation** offers several options for quality. **None (nearest frame)** is the standard setting but can sometimes lead to pixel forming. **Mixing neighbour frames** colors also pixels by using the color of its surrounding pixels. This results in a kind of blur effect. **SlowMotion vector method** is a method for creating slow motion effects for a video clip. It is important when you lengthen a clip.

Under **Resolution** you find two settings for previewing a clip. **Resize proportionally to fit** enables you to match the resolution to the size of the Preview window. **Resize to current resolution** adjusts the clip's resolution to the current project settings. This is useful, when you work with clips which have different resolutions.

In the **Timeline** you have also the opportunity to move all kinds of clips to a different position. Click the desired clip and drag it to a different position on the Timeline (or even track). You can also move transitions, effects and filters in the Timeline.
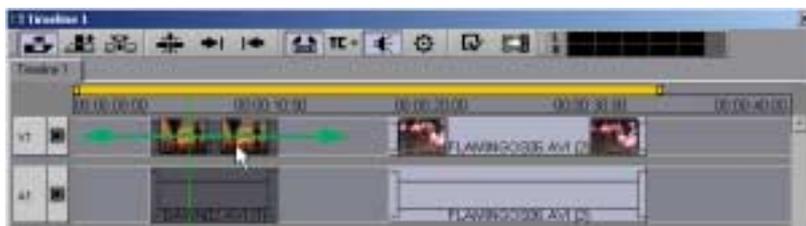
It is even possible to move several clips (video and/or audio) at the same time. Simply select the desired clips and place them somewhere else in the Timeline.

Tutorial - How do I create a slow-motion effect with MainActor v5?

The new MainActor v5 offers numerous special effects for enhancing the quality of your videos. Unfortunately, we have paid little attention to one very interesting effect so far. MainActor v5 enables you to apply time warp as well as slow-motion to your clips, which leads to impressive results. The latter we will present to you in this brief tutorial. But not so fast...!

1. We assume that you have already generated a clipboard and/or a folder for your multimedia files. Now you have to import the desired clip you want the slow-motion effect apply to. Activate the **Project** tab in the Browser, and click the **Add Media Clips** icon at the bottom left, so that the corresponding window appears on the screen. In the **Add Media file(s)** window you can search for the desired file, and add it to the previously selected bin or folder.

2. The imported video is a long one, but we only want to use a short scene for our slow-motion project. Therefore, we will briefly explain the functions of the **Media Player** again. By using the **Media Player** you can cut longer clips in shorter segments without complicated cutting and moving videos in the Timeline.

At first, select the preferred video, and drag it from the **Project** pane directly into the **Media Player** while holding the mouse-button. Use the controls (**Playback, Frame step backward, Frame step forward**...) or the green slider under the preview area, in order to find the position where you want the slow-motion sequence to start. After you have found the correct position, press the **Set IN-point** button (or the **I**-key) to define it.

If you know the exact position of the in-point, i.e. the point where the clip shall start, you can enter the value for it manually. At first, click the **Specify IN-point manually** display on the left directly under the pre-view area. In the following window you can enter the desired value for the starting point by using the keyboard. You only have to change one parameter here. The rest of them are automatically adapted, after you have confirmed your settings with the **OK** button.

3. Repeat the above mentioned steps, in order to find the position where you want your slow-motion clip to end. To define it, simply click the **Set OUT-point** button or press the **O**-key.

4. Now we want to insert the cut sequence into the first track in the **Timeline** window. Move the cursor into the preview area of the **Media Player** and drag the clip segment into **V1** in the **Timeline** window while holding the mouse-button. Release the mouse-button, so that the clip is placed on the track.
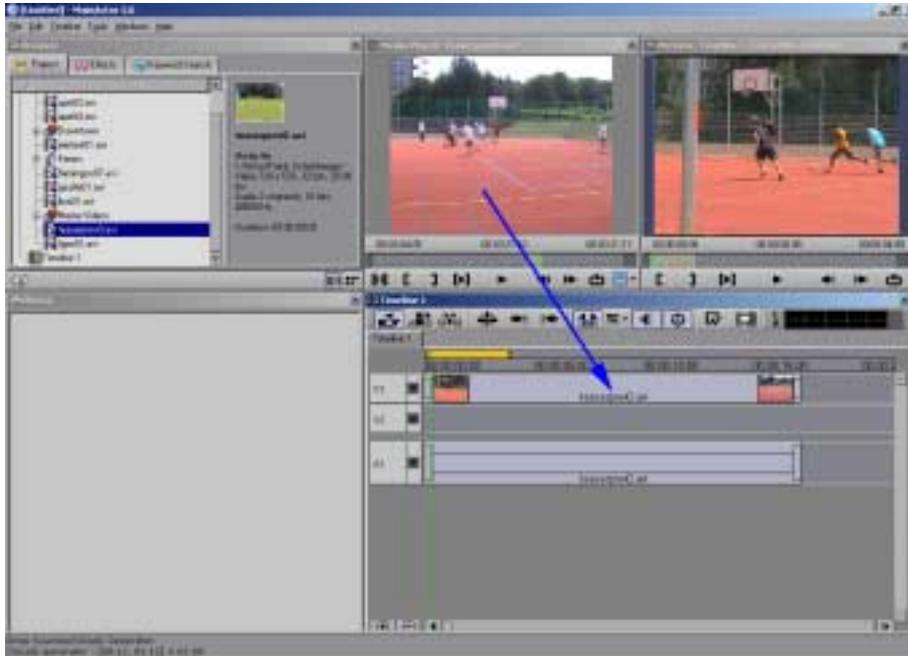
5. Now we prepare the clip in **V1** for the slow-motion effect. For that reason, we have to separate the video and the audio stream from each other. Move the cursor onto the video stream in **V1** and click it while holding the *Ctrl*-key. As you can see, the video stream is highlighted now, but the audio stream remains the same.
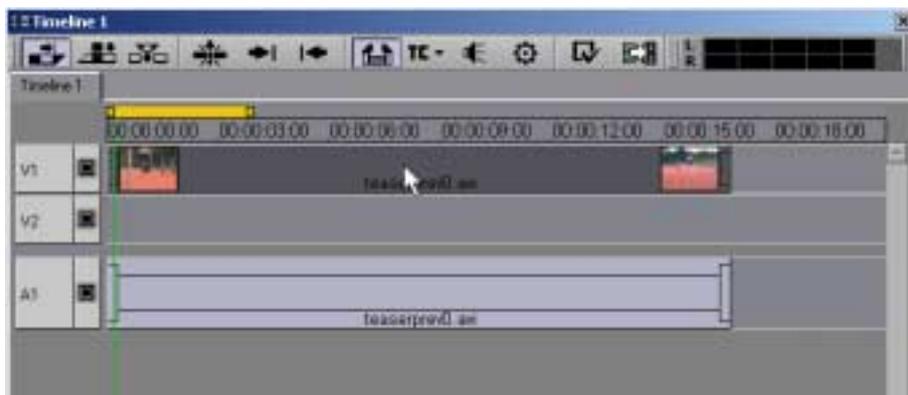
6. Double-click the clip's video stream in **V1**, so that its settings are copied into the **Effects** window. You only have to change two parameters for the clip's video stream. In the drop-down menu **Length control** select the **Fitting (freely resizable)** option. In the next menu **Interpolation** choose **SlowMotion Vector method**.
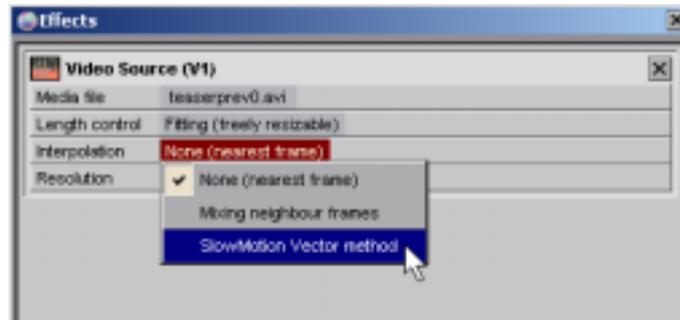
According to the processor speed of your computer, you can also choose **Mixing neighbour frames** in the drop-down menu **Interpolation**. This option is much faster than the **SlowMotion Vector method**, but might offer less quality.

7. After you have adjusted the parameters, you have to extend the clip in the **Timeline** window, in order to reduce the internal clip speed. Move the cursor onto the lever at the end of the video in **V1**, and select it while holding the *Ctrl*-key. As you can see in the screenshot below, the video stream's lever is highlighted in grey, so that only this one will be extended. Now click the lever of the video in **V1**, and drag to the right while holding the mouse-button. The longer you pull the clip, the slower the sequence will be played back later on.
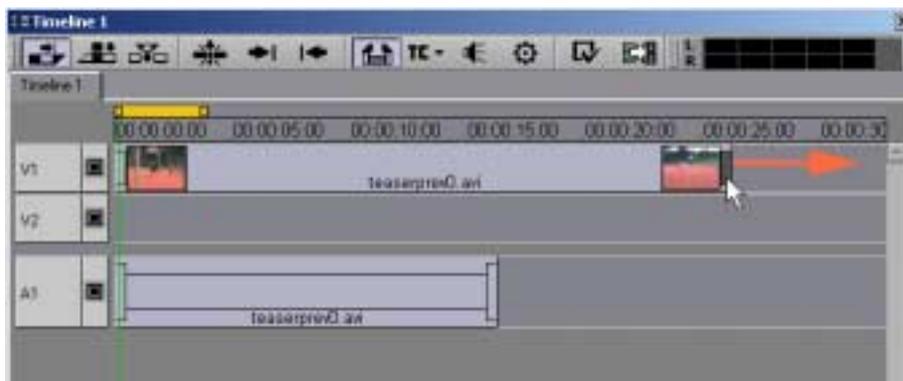
You can only extend the video stream of a clip. For audio this is not possible. For that reason, you have to separate the audio and video streams by using the *Ctrl*-key.

8. Now you can see the final slow-motion clip in the **Preview** window. Maybe you try for yourself, what fascinating sides slowness can offer. Why does everything has to go so fast these days...?

Working with audio clips

Normally, a video clip contains a video as well as an audio stream. But sometimes you have a clip without sound or you want to insert a different audio stream in your video. There are two possible ways for inserting audio clips.

If you have already an audio file in the **Project** pane of the Browser simply place it onto the audio track. Use the same method as for video clips. You can change its duration by dragging its ends to the desired length.

But there is also an alternative way for doing this. It might be possible to substitute the audio stream of a clip, which is already in the Timeline. Double-click the audio stream of the clip, so that its settings are copied into the **Effects** window. In the audio file's settings click the box next to **Media file**. In the appearing **Add Media file(s)** window you can search for and load a new audio file for the corresponding stream. You can load an audio file using the same method as for loading a video clip. Confirm your choice with **OK.** Now the audio stream of your video contains a different sound:

In the **Effects** window you have the opportunity to turn up/down the volume and even to influence the left and right channel for the whole clip. Simply drag the sliders under **Master volume**, **Left volume** and **Right volume** to the desired position.

You can also enter a certain value for the volume directly. At first, click on the little box with the current volume. In the appearing **Edit ... value** window you can enter a new volume. The value range is shown at the bottom of the window. For confirmation press the **OK** button, otherwise **Cancel**.

In the **Effects** window it is even possible to influence the volume over time, e.g. for fading in or fading out the sound of a clip slowly. By changing the keys of several curves you can create impressive sound effects. We will explain how to do this in a moment.
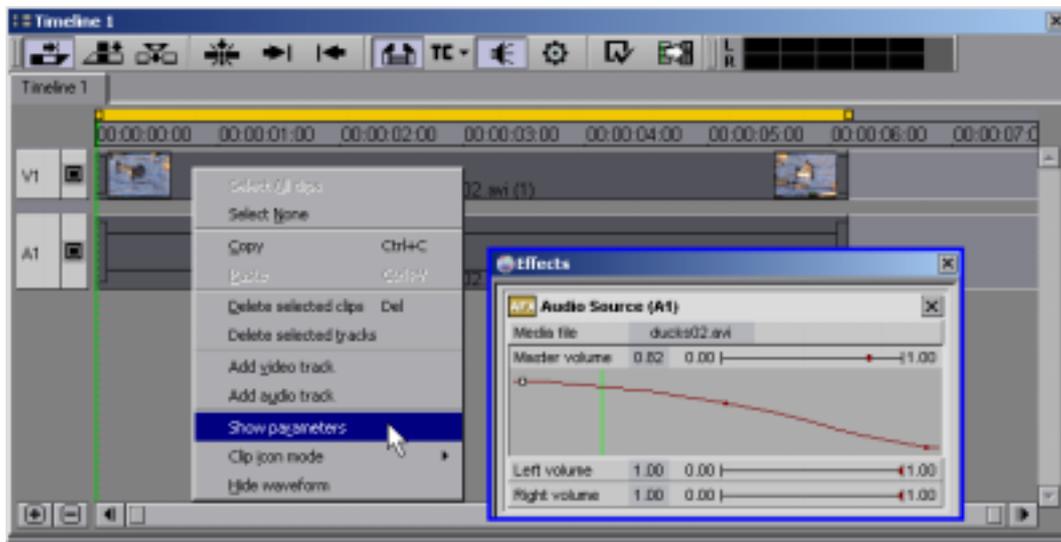
You can change the curves of the audio track easily. At first, you have to double-click the audio file in the Timeline so that its settings are transferred to the **Effects** window. You have also the opportunity to select the audio track, and press the right mouse-button. Then choose **Show parameters** from the appearing list. Now the settings are copied to the Effects window for editing. Here you can click the different volume buttons and change the parameters for the **Master volume, Left volume** and **Right volume**. When you click the names the audio options the respective volume curves appear in the window. You can edit the curves directly in the Effects window.

First of all, we show you how to turn up/down the volume. Move the cursor onto the key in the middle of the horizontal line. Click the key and move it up or down in order to change the volume. The scale on the left displays the level of the volume.

It is also possible to change the volume's level at different positions within a single audio file. As you can see under **Master volume** we have a curve which looks like a wave, i.e. the sound is getting softer and louder. For that reason, you have to define new keys on the line. Move the cursor to any point on the line, and press the *Shift* key on your keyboard. While holding the *Shift* key, press the left mouse-button so that a new key appears on the line. When you click this key you can move it up or down, and the line changes into a curve. For the first key in our example it means that the volume at the beginning of the clip is high, and then it is getting slowly lower. Repeat these steps for defining more keys. We recommend playing around with the keys and the curve to obtain the preferred results.
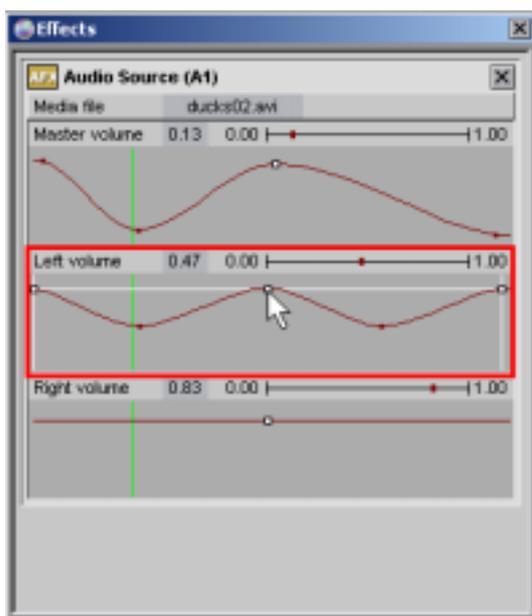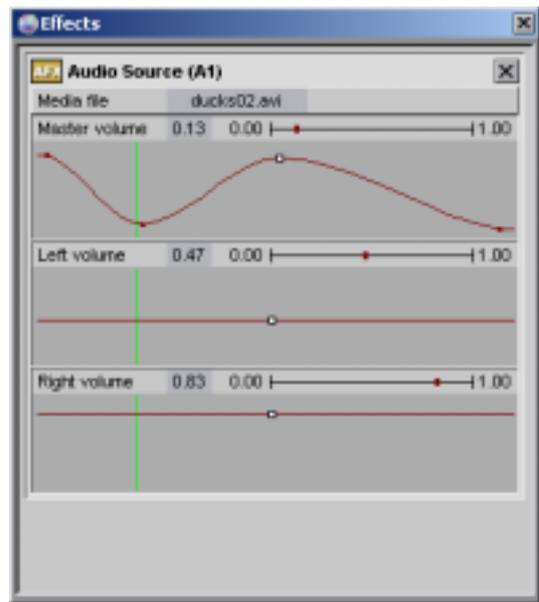
It is even possible to shift several keys at the same time, e.g. in order to generate a sine curve. At first, you have to define some new keys as described earlier in this manual. Then you have to select different keys, e.g. every other key by holding the *Ctrl* key on your keyboard and clicking the desired point on the audio line. Now you can move all selected keys simultaneously. Simply click one of these keys and shift it to the desired position. As you can see, a kind of sine curve is generated. When you play back the clip with the player in the Preview window the sound will get softer and louder over and over again.

During playback you can see the current sound level of the audio stream in the Effects window. It is displayed in the box next to the volume's denotation as well as in the graph to right of it.

It is even possible to the audio volume beyond the default settings. Click the value box in the **Effects** window to open the dialog where you can enter the volume of an audio stream manually. Click the small triangle to extend the dialog, so that an input prompt appears. Under **Max** you can enter a new maximum value for the volume. The result is that the volume is turned up. In the corresponding polydiagram you can move the keys to a higher position now, which results in louder sound. This option is also available for many other effect parameters. You can change the minimum and maximum value for the function here.
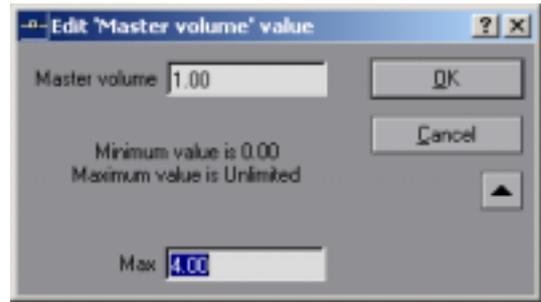
Working with complete Timelines

MainActor v5 allows you to copy complete Timelines with only a few mouse-clicks. This option enables you to merge the different scenes of a film into one long project. For example: you generated the opening credits in Timeline 1, the different scenes in Timeline 2 to 5, and the credits in Timeline 6. Now you have the opportunity to combine all Timelines with each other, so that you can export them as one video.

When you start a new project, MainActor automatically creates a **Timeline** icon in the **Project** pane of the Browser. This icon enables you to copy the whole contents of a Timeline, including the effects, transitions etc., to another Timeline. At first, create a new Timeline as described earlier in this manual. Then simply drag the **Timeline** icon into the new Timeline, you have just created.
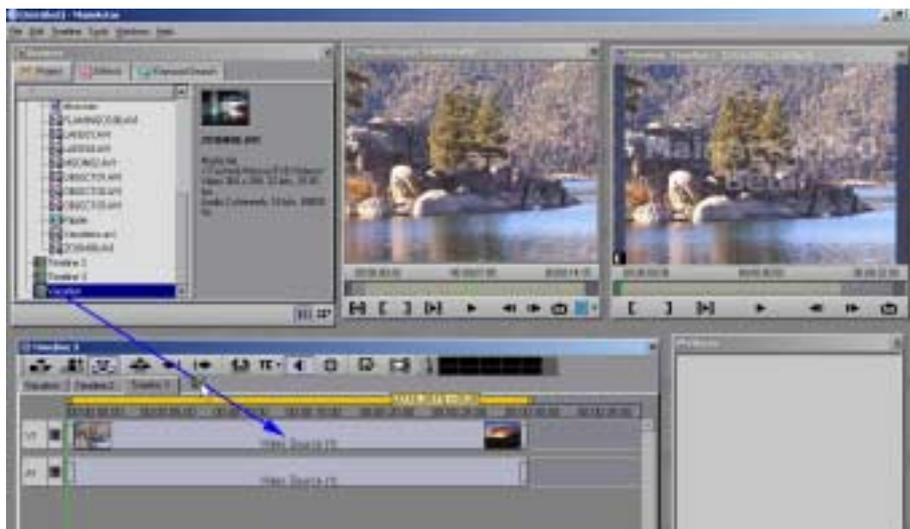
As you can see in the screenshot above, the different clips of your project, including the effects, filters, sources and transitions are merged into a single clip.

Now you can add another Timeline to your project by dragging it from the **Project** Browser directly behind the last **Timeline** clip.

Cutting clips in the Timeline

Like every good video-editing software MainActor v5 allows you to cut your clips directly in the Timeline. Cutting clips in a project is very easy with the new MainActor. First of all, you have to add the clip you want to shorten to the Timeline. Then select the clip so that it will be highlighted. Now drag the green slider to the exact position where you want to cut your video. Finally, press the **Cut** button in the bar above the Timeline so that the clip is split into two pieces.

Now the clip is divided into two pieces. You can delete the selected part of the clip by moving the cursor into the **Timeline** window, clicking the right mouse-button, and choosing **Delete selected clips** option from the list. Or you can move it within your project so that it appears at another position. Of course, you can repeat the above mentioned steps to make another cut in your clip.
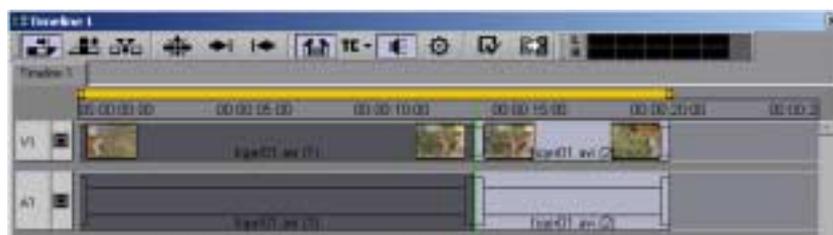
You see with MainActor v5 cutting clips is no problem at all.

Working with the Media Player

The **Media Player** is a versatile tool. It not only allows you to preview clips from the Browser but also to cut clips in advance before you use them in the actual project. The latter can be very useful when you have longer videos from which you need different shorter segments, e.g. you have just captured a video tape, and you do not want to use the footage for a new project at once.

At first, you have to place a video in the Media Player by double-clicking it in the Browser of by dragging it directly into the Media Player. Afterwards, you can specify the segment you want to add to your project.
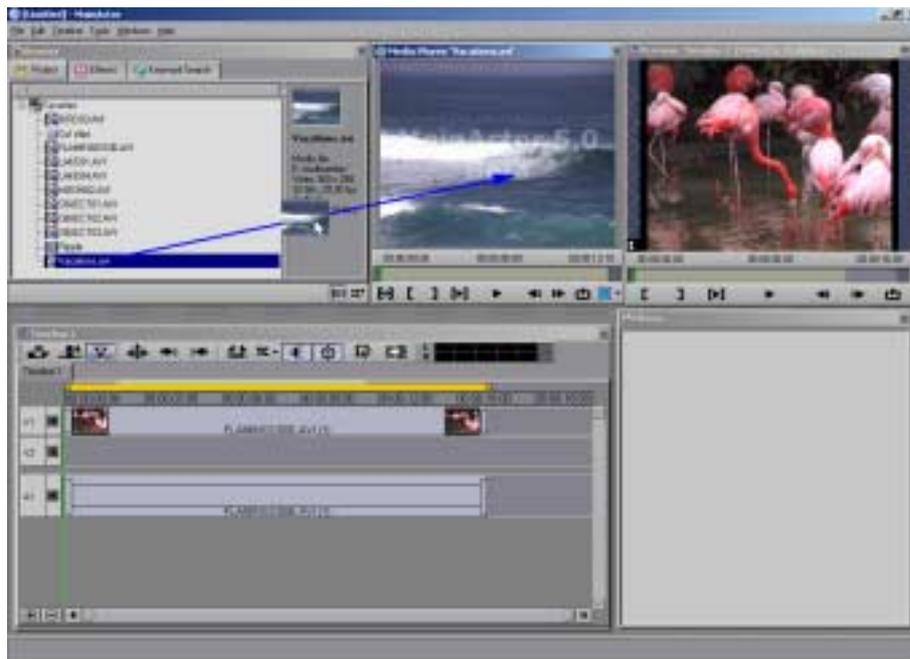
Now you can specify mark-in and mark-out points by using the highlighted buttons.

To preview the selected segment, press the [►] button. To watch the whole video, click the button on the right of it.

It is also possible to enter the in/out points manually. Press one of the time displays, and enter the desired position for the in/out segments in the following window. The left display is for the in-point, the one in the middle for the current position, and the right one for the out-point. In the corresponding settings

window you can specify the in/out points by entering the **Timecode**, **Second(s)** or **Frame(s)**.

The ⊞ button enables you to reset the mark-in and mark-out points to their original position, i.e. back to the length of the whole clip from its beginning to the end.

When you have specified the segment you want to use for the current project(s), simply drag it from the **Media Player** directly onto the desired track in the **Timeline** window.
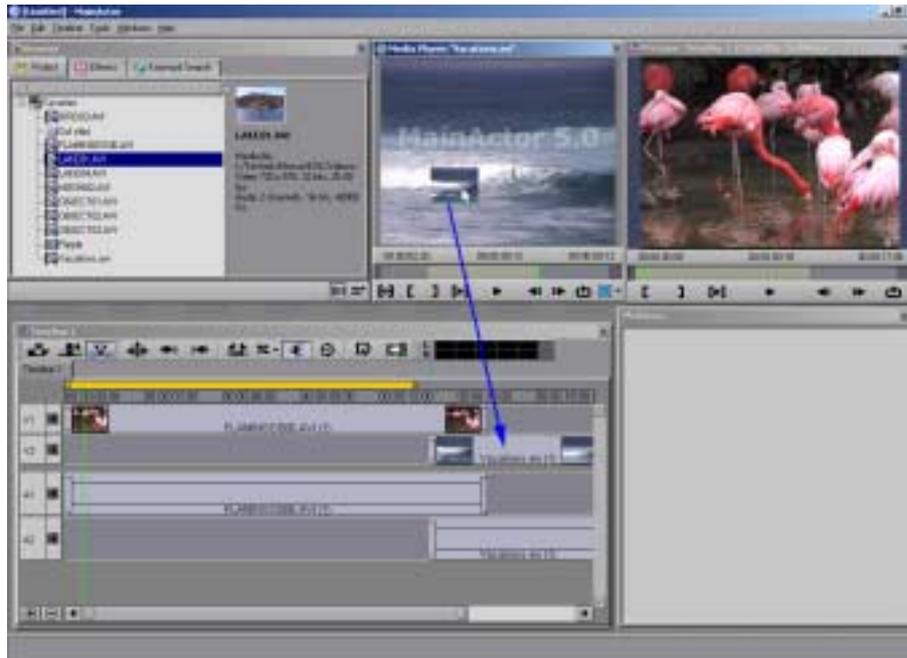
There is also an alternative way for adding clips to the Timeline which allows an even more precise positioning of them. Move the slider in the **Preview** window to the position where you want to insert the clip, or enter the exact position manually by clicking the current frame position display. Then drag the specified clip segment from the **Media Player** directly into the **Preview** window while holding the mouse-button. When you release it in the **Preview** window, the clip is placed at the current slider position.
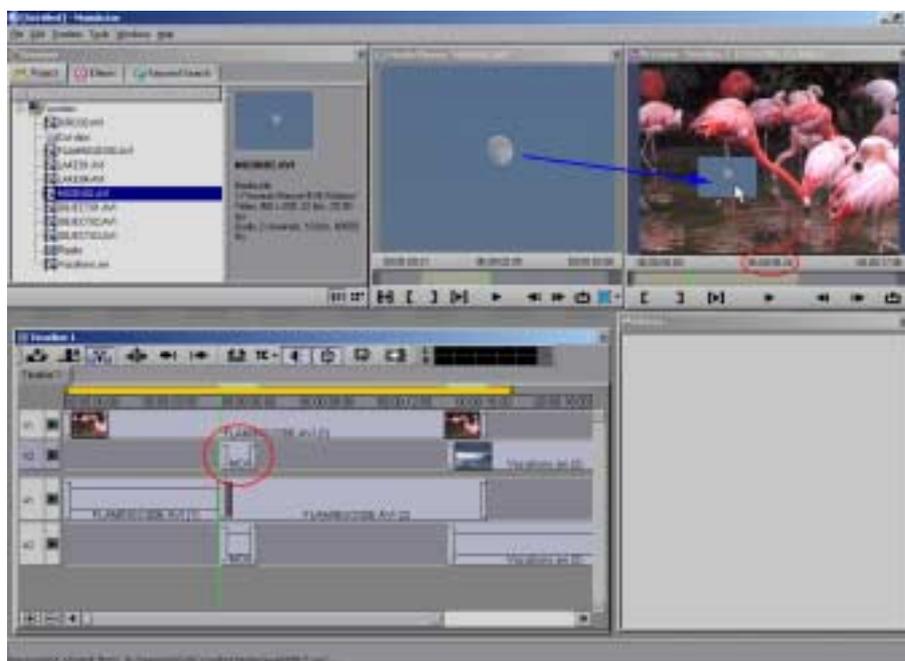
Keep in mind that you choose the appropriate mode for adding you clips to the Timeline: **Fill**, **Overwrite** or **Insert**. These modes are also active when you add a clip to a track via the **Media Player**. Depending on the selected mode parts of the clip can be erased.

Now you can specify another segment for your video footage, that you want to use for the project by repeating the steps mentioned above. The Media Player avoids cutting clips when they are already in the Timeline.

Tutorial - How do I cut clips with the Media Player?

The **Media Player** is one of the most important windows in MainActor v5, because it offers several useful features. In this brief tutorial we will show you how to use the Media Player and how to cut clips with this tool. It helps you to use smaller scenes which were extracted from longer video footage as well as audio clips without complicated movement or cutting of clips in the Timeline. However, cutting clips in advance with the Media Player is quite easy!

Imagine you have captured 45 minutes of video footage, you want to use for a project. But you do not need consecutive scenes, but at first, you want to use a clip which starts after 10 minutes, and after that a clip which starts after 2:30 minutes. Of course, you can create a second Timeline, add the complete 45 minutes clip to it and cut in fine segments over and over again. But this would be too complicated and time intensive work. Using the **Media Player** makes live much easier.

1. First of all, load the captured video into the **Project** Browser. Move the cursor to the clipboard and/or folder where you store your captured videos. We recommend creating a bin or folder which is only used for captured video footage. We will briefly explain you how to create such a folder. Move the cursor in the **Project** pane to the bin where you want this folder to generate. Press the right mouse-button, and choose **New Folder** from the appearing list:

After MainActor v5 has generated a new folder, you can rename it. For our example, we labelled it *Captured Video*. Here you can add your captured videos.

2. Now we will import the captured video, which is already stored somewhere on our computer into the *Captured Video* folder. Therefore, we select the folder and press the right mouse-button again. This time, we choose **Add Media clip(s)...** from the appearing list. In the **Add Media file(s)** window you can search for the desired clip. To add the chosen clips to the folder, confirm with **OK**.

3. The selected clip(s) are added to the *Captured video* folder. Now we want to show you how to work with clips in the Media Player. At first, drag the clip you want to cut from the **Project** Browser directly into the **Media Player** as shown in the screenshot below. There are two ways of dragging the clip into the Player (or the Timeline and Preview window). Firstly, click the clip's name, and drag it directly from the Browser into the Media Player. Secondly, click the little thumbnail in the Browser and drag it from there directly into the Media Player. The latter is shown in the screenshot below:
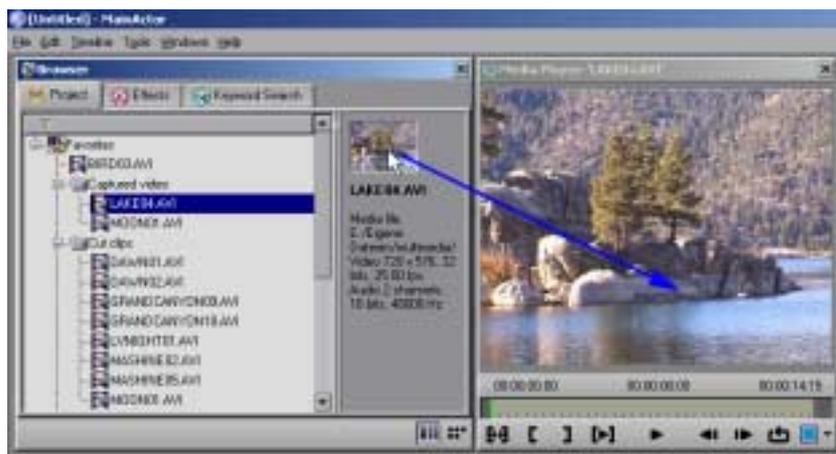
4. Now the actual cutting of the clip can start. Use the controls (**Play**, **Frame step forward** and **Frame step backward**) to scroll through your video, and watch the scenes you want to add to your project in advance. Use the *Cursor left* or *Cursor right* key to move one frame backward or one frame forward. It is also possible to jump ten frames forward or backward at the same time. Simply hold the *Shift* key, and press the preferred cursor keys. You can use the green slider to scroll through the clip, too, while holding the mouse-button.
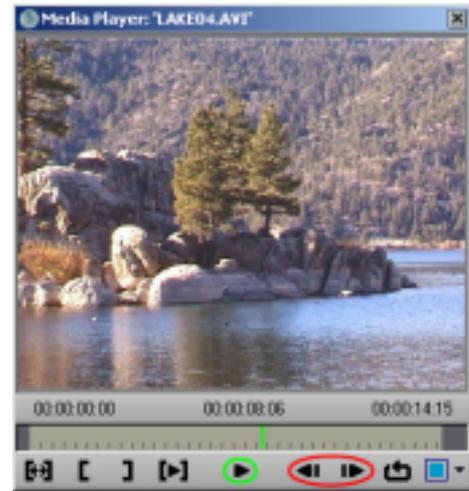
You see the current frame position in the middle display directly under the preview area (Hours: Minutes:Seconds:Frames). When you have finally found the starting point of the scene you want to use for your project, click the **Set IN-point** button. The mark-in position is indicated by the left display.

5. There is also a different way to specify the In/Out-points. We will show this by means of defining an out-point. Assuming you exactly know where you want to set the mark-out position. Click the **Specify OUT-point manually** button. In the following window you can enter the mark-out position by using the keyboard. You can define the new value by **Timecode**, **Seconds** or **Frame**. It is only necessary to enter a new value for one of these three parameters. The others will automatically be changed when you confirm your settings with **OK**.

6. After you have specified the In/Out-points for your first scene, we want to use it for the project. But how do I copy the cut segment from the Media Player into a track in the Timeline? It's quite easy! Move the cursor into the preview area of the Media Player. Then drag it directly from the **Media Player** into the video track of the **Timeline**.
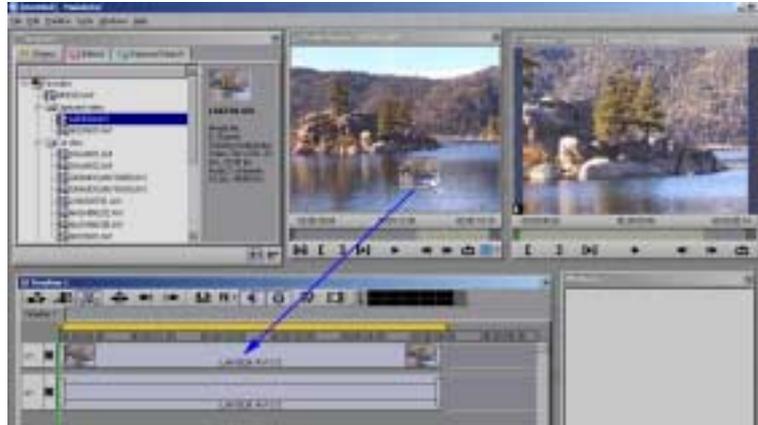

7. We want to use an earlier scene for our project, but use a slightly different way to add it to the Timeline now. But first of all, we have to generate another video track for our project. Move the cursor into the Timeline window and press the right mouse-button. From the appearing list, choose **Add video track**, and MainActor v5 generates a second video track.
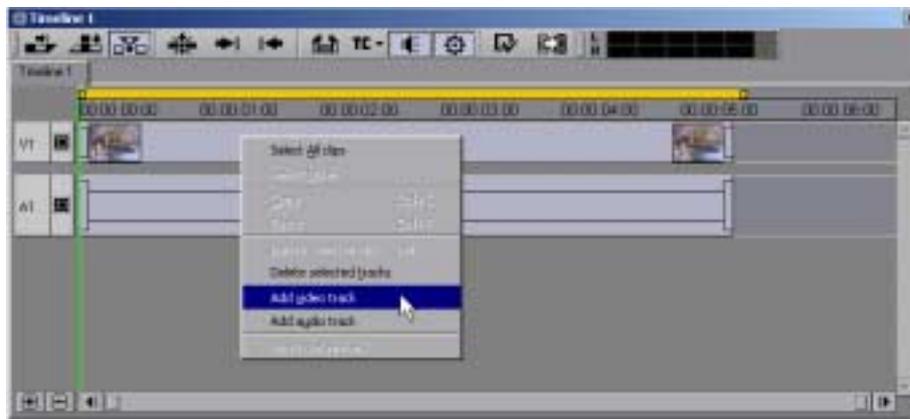
8. Now specify the mark-in and mark-out points in the **Media Player**, as already described in steps four and five. Use the method which suits you best for defining these points.

9. Then switch to the **Preview** window. Specify the mark-in position in this window where you want the new segment to start in the project. Use the green slider and/or the controls to find the exact position.
It is also possible to specify the in-point manually. Click the middle display (**Current Frame position**), and enter the value. You can define the new value by **Timecode**, **Seconds** or **Frame**. It is only necessary to enter a new value for one of these three parameters. The others will automatically be changed when you confirm the settings with **OK**.
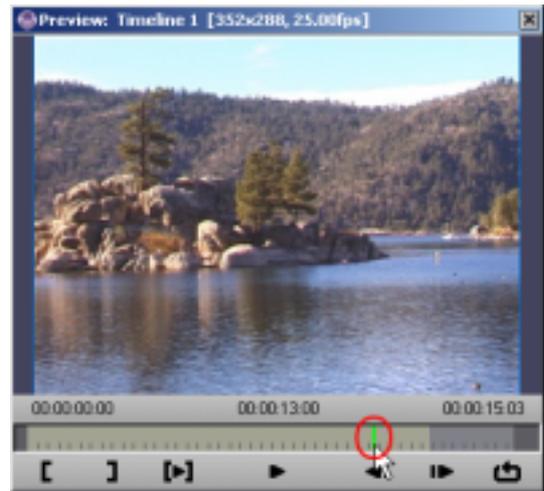
10. Now drag the cut clip segment from the **Media Player** directly into the **Preview** window. As you can see, the clip is inserted exactly at the position, you have specified in the Preview window.
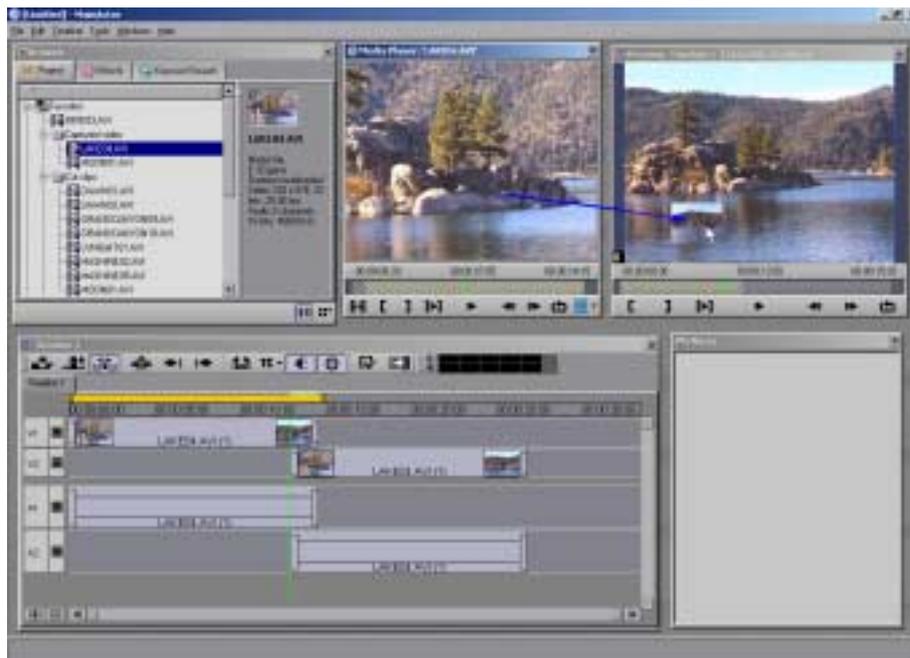
11. If you have further clip segments you want to use, repeat the steps described above. Otherwise, drag-and-drop the next long clip into the Media Player for cutting its segments, in order to use them in your projects.

How to apply effects

MainActor v5 includes a lot of special effects in different categories. They are gathered in folders under the **Effects** pane in the **Browser** window. Click on a folder to see the effects in each category. There are two ways of applying an effect: you can use it for a whole clip or only for a part of it.

To apply an effect for a complete clip, drag it from the **Effects** pane onto the desired video in the Timeline as shown in the screenshot below. A short description of the effect, including a preview appears in the right part of the pane.

After you have placed the effect on the clip the video track (V1) is split. The upper part shows the name of the clip, and the lower one the effect name. To change the settings of a clip double click the effect so that its settings are copied to the **Effects** window. Now you can edit the effect parameters as described earlier in this manual.
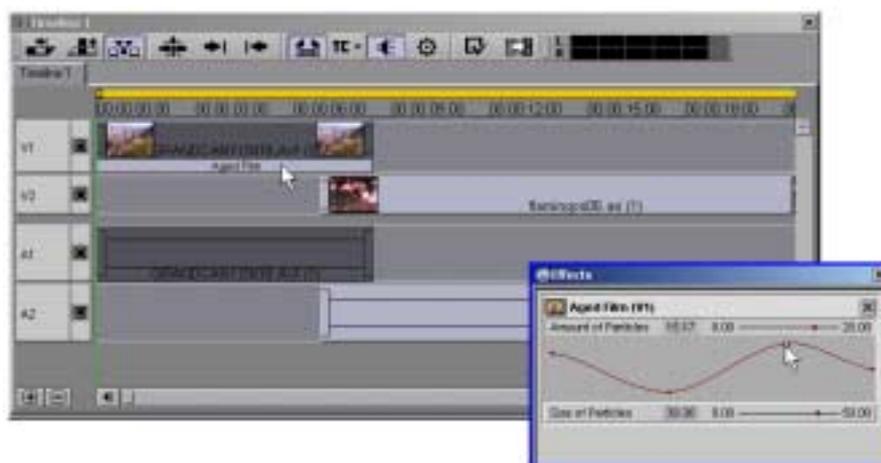
You can preview the project any time by using the controls in the **Preview** window.

When you want to apply a special effect or filter only for a short scene or sequence of a clip you have to use a different method. First of all, place a video clip on track 1. Then add a second video track to your project as shown earlier in this manual. Activate the **Effects** pane and select the desired effect or filter. Now you drag it into track 2 directly under the position where you want the effect to appear.
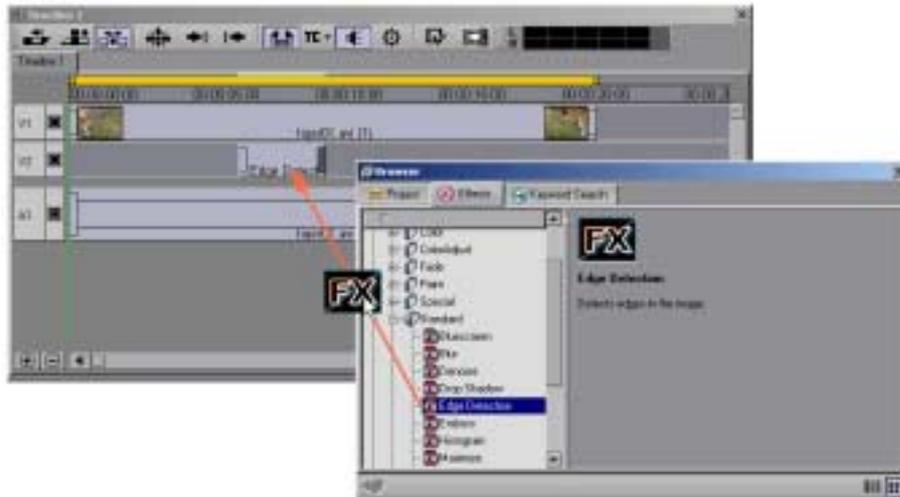
When you have placed the effect on the second track you have the opportunity to move the effect to the exact position and to lengthen it. In order to relocate an effect, select it and drag it to a different position. To extend an effect you have to click the **Toggle clip ends on/off** button and then activate one of the levers which appear at the ends of the effect in the Timeline. Now you can click and drag the effect to the desired length.

Depending on the complexity of your project it might be possible to change the display resolution of the Timeline, otherwise you won't be able to extend certain clips, transitions, effects etc. Use the control slider under the tracks to change it. You can enlarge the display by dragging the ends of the slider at the bottom of the **Timeline** window. Use the whole slider to scroll through a project. The [+]|[-] buttons enable you to maximize and minimize the Timeline resolution as well.

We have already mentioned that it is possible to edit your effects, filters, sources, titles as well as transitions by copying their settings into the **Effects** window. Simply double-click the object in the Timeline so that the settings are transferred to the **Effects** window. They offer innumerous parameters which can be changed by the user. The number of settings depends on the effect, filter, sources or transition.

But MainActor v5 offers even more: you have the opportunity to fine-tune your effects and add them to the Browser so that you can use them for future projects.

When you have finished editing an effect, title, source, filter or transition, simply click the little icon on top of the effect's parameter window (marked by the red circle) and drag it directly into a folder or bin of the Browser's **Project** pane. Now the user-defined object appears in the folder's or clipboard's list, and you can use it with the saved settings again later on. You can also do this with clip segments which are already in the Timeline. Simply double-click the corresponding clip in the Timeline, and repeat the steps described for the effects.
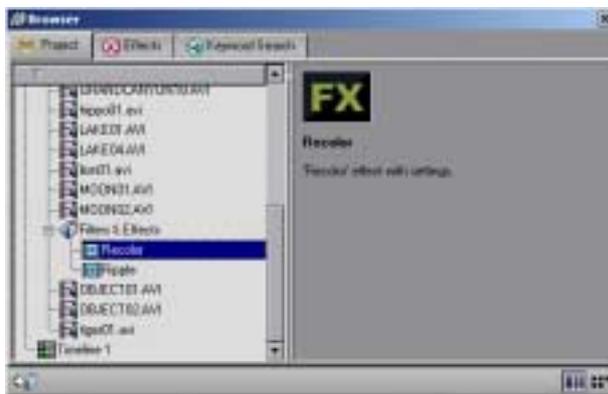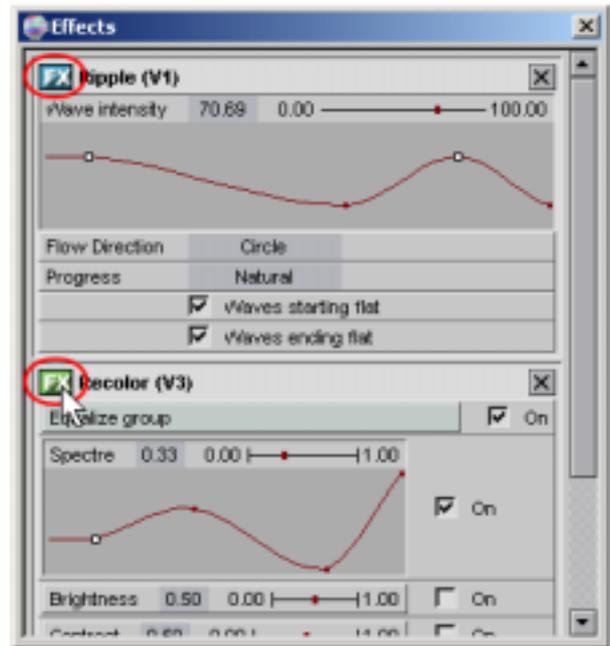
You can now drag-and-drop these user-defined effects, filters, sources, titles, transitions and even clip segments from the **Browser** directly in the Timeline as described in previous chapters.

Working with the 2D Text engine

The 2D-Text Engine allows you to insert static or animated texts into your clips so that your videos assume a professional character. The texts can be used as an overlay or as individual clips. The option is ideal for credits, inserts, subtitles etc. You find the **2D Text** tool under **Filters > Text** in the **Effects** pane. It is used in the same way as other transitions and effects in the folders. But we will explain the use of it in detail in a moment.

In the screenshot you can see that we have already placed a video clip on track 1. We want to use the text as an overlay so we must add another video track to our project as we have shown before. Track 2 will include the text for our clip later on.

After you have activated the **Effects** tab, open the **Filters** folder. Click the **2D Text** tool under **Text** and drag it directly into the Timeline.
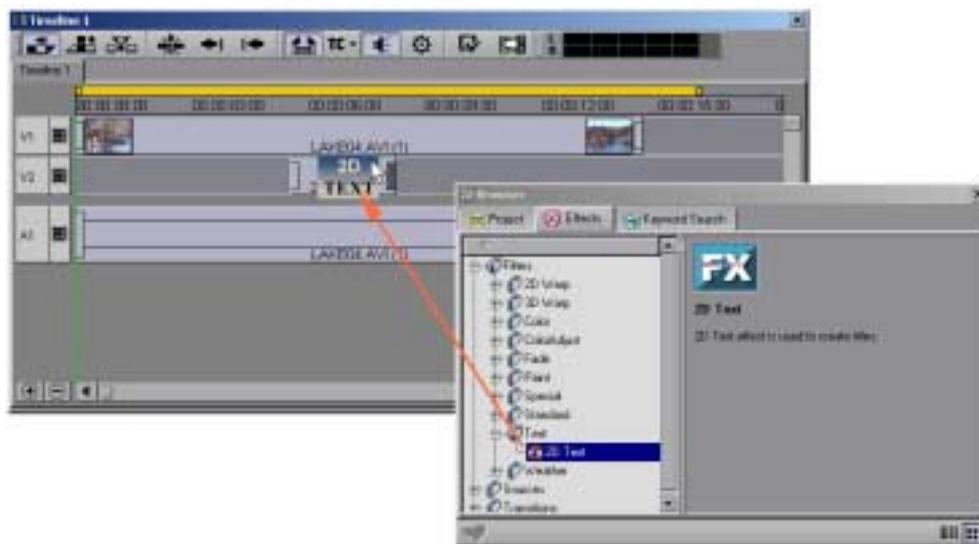
When you have placed the 2D Text on the Timeline, double-click it to transfer its settings to the **Effects** window. In this window you can enter the text and adjust some settings for displaying the text in your project. The settings can be changed in polydiagrams and/or dialog boxes. In the polydiagram each parameter is indicated by a differently colored line. In addition, you define keys and turn the lines into curves. These curves can be shaped by the user by dragging their keys so that the parameters are changed over time.

You define a new key by holding the *Shift* key and clicking somewhere on the line. When you click the key and hold the mouse-button, you can drag it so that the line turns into a curve. We will show you the results of such a procedure on the basis of the **2D Text** option.

You can also enter a new parameter by opening a dialog box. Therefore, you press the small box next to the name of the **2D Text** settings (high lighted by the blue box) so that a settings window appears. Here you enter the new value for the function and confirm with **OK**.

In this small window you can also change the minimum and maximum value for an effect. This might be necessary for individual effect parameters, in order to adjust the function correctly and achieve the desired result. An example for an animated text would be to increase the maximum value so that the title disappears completely from the screen. Afterwards, you can shift the keys in the polydiagram to a higher position. Click the small triangle so that the input prompts for **Min** and **Max** become available.

The **2D Text** settings window offers a lot of different parameters for the user in order to give your videos a professional touch.

When you click the **Color** button the polydiagram for this setting becomes visible so that you can change the font color over time. The result is e.g. that the text changes its color every 2 seconds. It depends on the number of keys you generate and how you define the different curves what the font color is in your clip or project at a certain time.
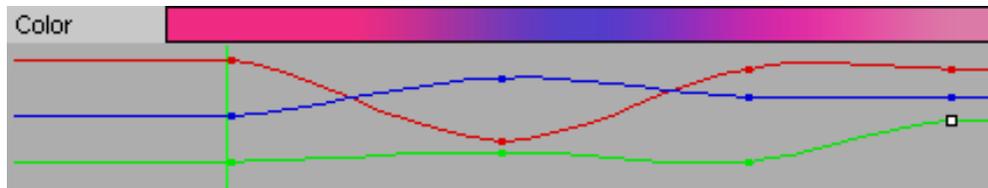
We recommend playing around with the polydiagrams and their parameters in order to get used to them. The polydiagram allows you to fine-tune the parameters which leads to impressive results.

To define a permanent font color for a clip or project, press the color bar and choose the desired color in the following window.

Opacity defines the value for the text's opacity. When the value tends to zero the title becomes more and more invisible. By defining new keys you have the opportunity to fade texts in and out. You can also use the slider to change the value for the opacity.

Size lets you adjust the text size. When you define more keys you can change the title's size during your project at a certain time. Thus you gain the impression that the text moves towards and away from the audience as shown in the screenshot of the settings window above. Of course, you can use the slider and the dialog box for defining the text size value.

X Pos defines the position of the text on an imaginary x-axis. This option useful for creating animated titles.

Y Pos defines the position of the text on an imaginary y-axis. This option is useful for creating animated titles.
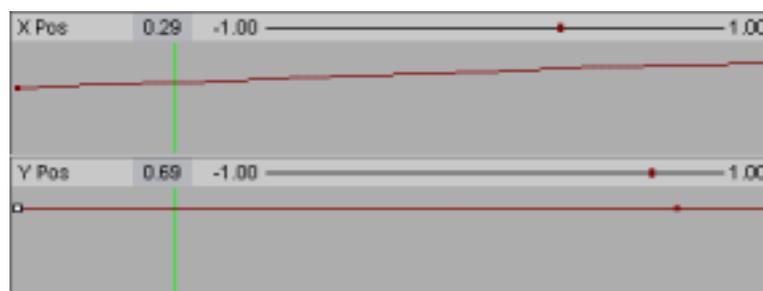
The option **Skew** allows you to bend the letters to the left or the right.

Under **Text** you find different parameters for editing your text. In this part of the window you also enter your desired text for your project.

The drop-down menu **Font** offers you a lot of different font types. The available fonts depend on the installed fonts on your system.

Under **Size** you can define the preferred font size for your title.

The next three buttons let you choose the text alignment: **Align Left, Align Center** and **Align Right**.

Spacing enables you to define the line spacing of your text.

Unfortunately, you cannot see the final version of our animated title. We tried to include different functions of the **2D Text** engine for our clip, e.g. the text fades in and out, it changes its color from time to time, it moves through the picture as well as changes its size etc.

With a little practice you can easily produce impressive text effects.

It is even possible to save your text settings for future projects as described in the previous chapter. Simply click the **2D Text's** header icon in the **Effects** window, and drag it into a folder or bin in the **Project** pane.

How to use a transition

You use a transitions and effects in a similar way. At first, choose a transition from one of the folders. Then drag a transition from the **Browser** directly in the **Timeline** on the clip's beginning in the second video track.


As you can see, MainActor v5 automatically adds a transition between the audio streams as well. The result is that the sound of the first clip is faded out, and the audio stream of the second video is faded in. But you have also the opportunity to maintain the original volume.

When you hold the *Alt* key when adding a video transition to the Timeline, it is placed there without an additional audio transition. This is useful when you want to maintain the original volume of two consecutive clips.

Now you have a transition between the two clips in your project. Normally the transition automatically fits in the overlapping part of the two clips. However, in the Timeline you have the opportunity to change the duration of the transition. Simply click one of the levers at the ends of the transition and drag it to the desired length. We recommend extending the transition to such a degree that the end of the first clip corresponds with the end of the transition in the Timeline.
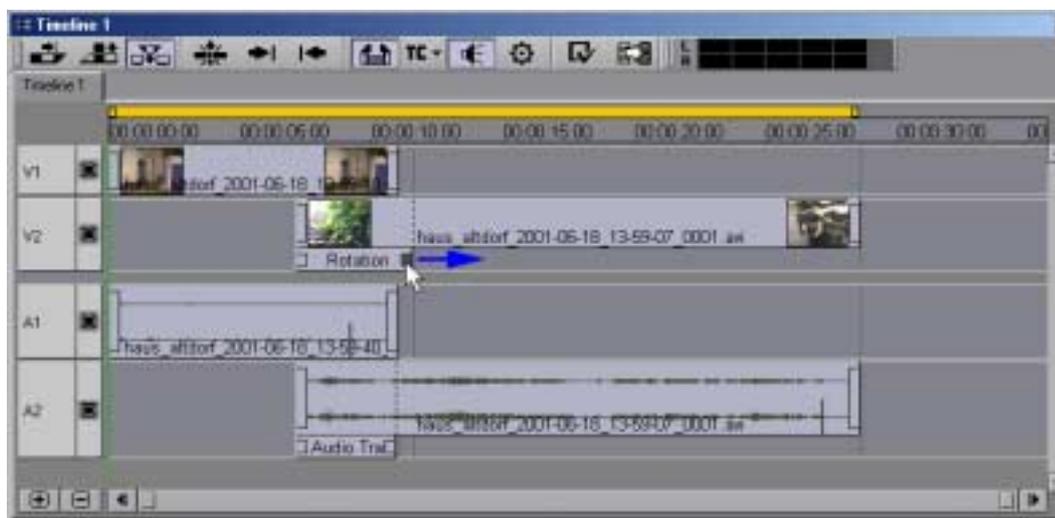
It is even possible to extend both the video and the audio transition simultaneously. For that reason, select the levers of the video as well as the audio transition while holding the *Ctrl* key. Then drag one of them to the desired length. As you can see, the other one follows automatically.

It is also possible to use a transition between two clips, that are on the same video track. Then you have too insert the transition directly between these clips as shown in the screenshot below.
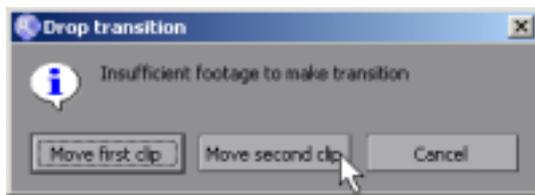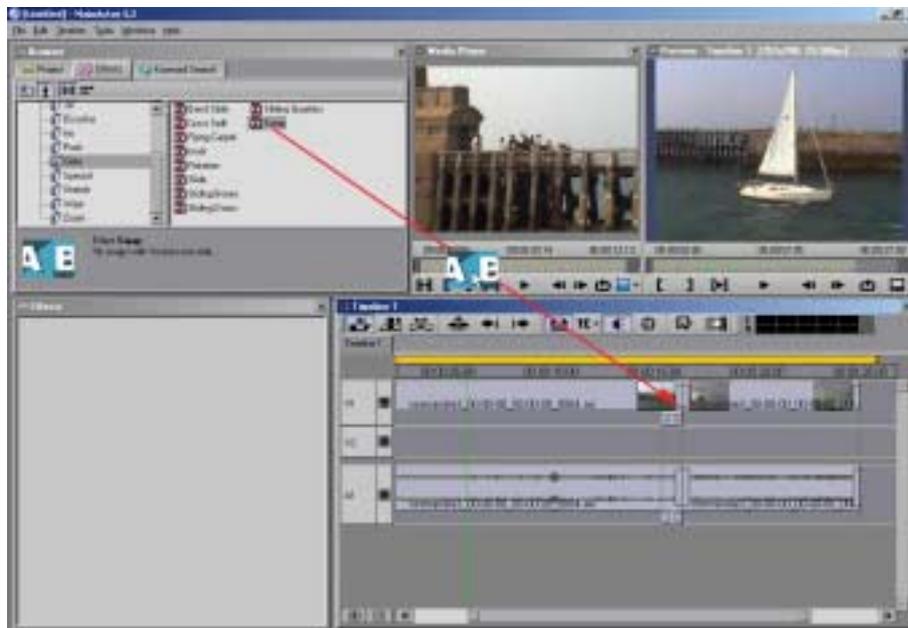

It might be possible that the following window appears on the screen. In this window you specify whether you want to move the first clip or the second one for applying the transition properly. It doesn't matter which clip you move. Try for yourself which option offers the best results.

In this case, an audio transition is added to the audio streams as well, although the two clips are one a single track. Simply repeat the steps mentioned above and below to extend the audio and the video transition.

When you hold the *Alt* key when adding a video transition to the Timeline, it is placed there without an additional audio transition. This is useful when you want to maintain the original volume of two consecutive clips.

Now you have a transition between two clips in a single track. You have the opportunity to change the duration of the transition here as well. Simply click one of the levers at the ends of the transition and drag it to the desired length. Depending on the direction you have moved the clip, you are able to drag it to the left or to the right. In our example, we pulled it to the left.
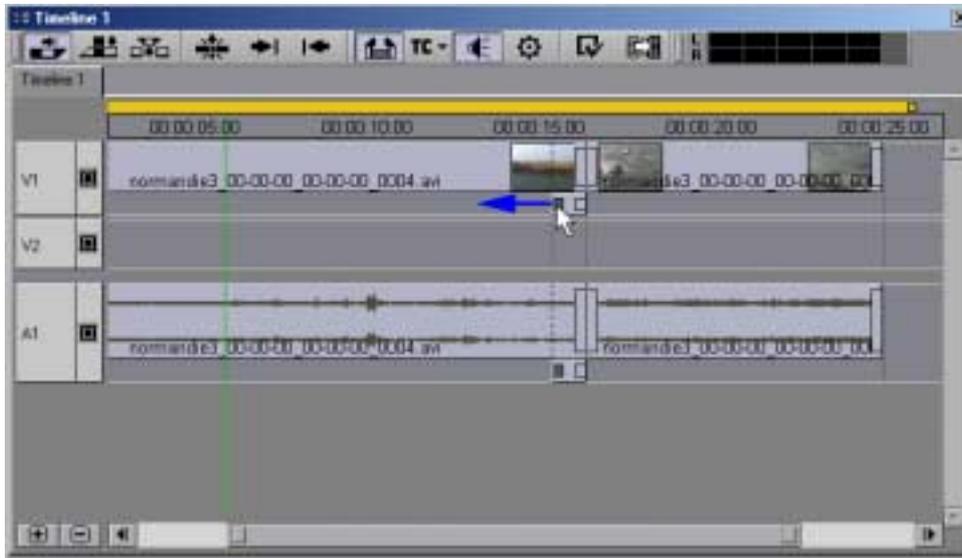

With MainActor v5 it is possible to fine-tune not only effects but also transitions by changing several parameters. At first you have to double-click the transition so that its parameters are copied to the **Effects** window. Depending on the chosen transition the parameters vary. Of course, you can save the transition's settings for later usage by dragging-and-dropping the final version to the Browser.
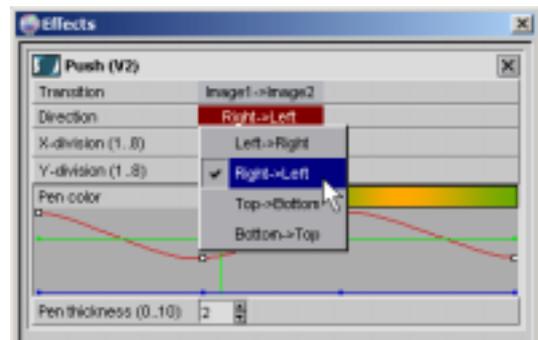
In the example on the right, you have the opportunity to change, among other things, the direction the two clips change from one to the other. It is also possible to define the pen color and thickness. They are visible during the transient process. MainActor v5 even allows the user to change the color of the pens over time. You achieve the desired effect by defining new keys in a polydiagram. With these additional keys you create curves which lead to a modification of the pen's colors.

MainActor v5 also offers an audio transition for placing it between two clips which contain audio. After you have placed the desired clips in the Timeline, you have to switch to the **Effects** pane of the Browser. Then open the **Audio** folder and click the **Transitions** folder. Now drag the **Audio Transition** from the **Effects** pane directly on the clip's beginning in the second audio track if you have two of them.
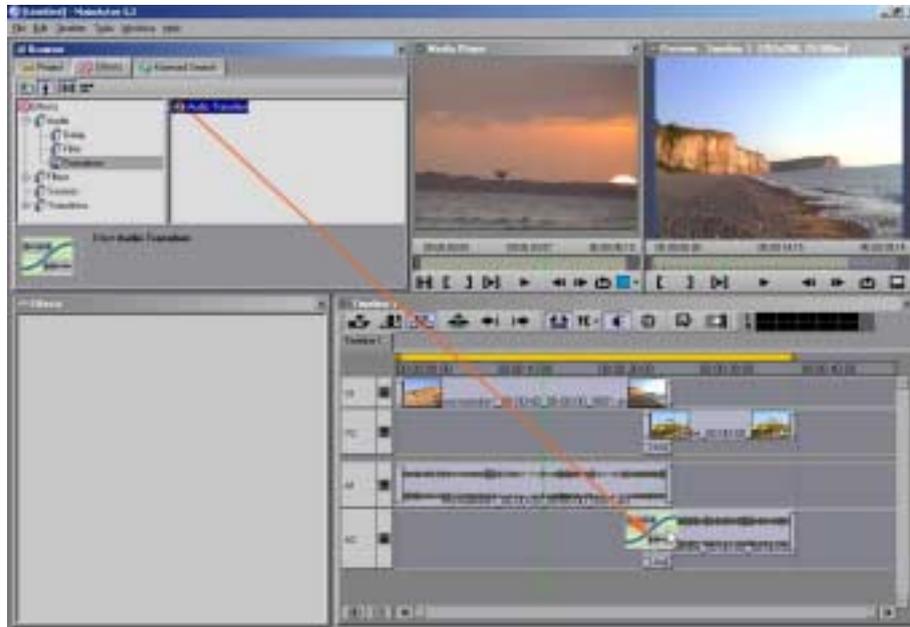

When you hold the *Alt* key when adding an audio transition to the Timeline, it is placed there without an additional video transition. This is useful when you want to use another video transition than the default one between two consecutive clips.

As you can see, a video transition has been added between the video streams as well. Now you can drag the video and/or audio transition to the desired length. We have already explained how to do so above.

If you have only one track for the audio streams, you have to extend the video and audio transitions individually. In this case activate the corresponding transition's lever and pull it to the desired length. Repeat this task for the other transitions between these videos if necessary.

If necessary you can modify the **Audio Transition**. When you double-click the transition between the video stream in the **Timeline**, you can see that it is a simple **Mix** transition, i.e. that the first video is faded out, and the second one is slowly faded in. The polydiagram allows you to edit the transition if necessary. Double-clicking the audio transition in the corresponding track, copies its settings to the **Effects** window. The options enable you to accept the default settings, i.e. to fade out and fade in the audio, or to maintain the volume of the original clip.
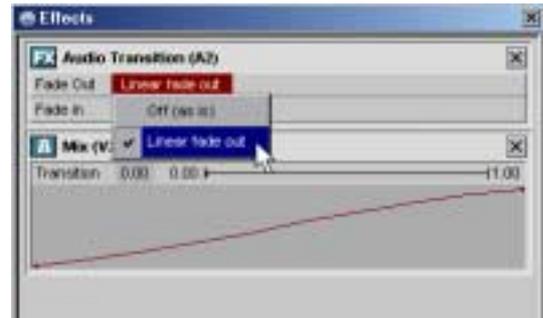
We recommend to play around with the transitions and their usage to get used to it. Keep in mind that the usage highly depends on the insert mode you have enabled before.

Working with the polydiagrams

You have already read a lot about the polydiagrams and the keys, e.g. how to add keys, change the curves etc. In this little chapter we will summarize the most important aspects again and give also some more information about how to work with keys and polydiagrams. Most effects, filters, sources and transitions include settings which contain polydiagrams. The user can define the particular value of a key at a certain point in time, i.e. an exact editing of parameters will be possible. Working with these functionalities makes it easy to fine-tune and animate your effects, transitions etc. Depending on the chosen option in a polydiagram each parameter is indicated by a different colored line.

You have the opportunity to turn the lines into curves which can be shaped to make parameters change over time. To turn a line into a curve, add a point by holding down the *Shift* key and clicking on the desired position on the line or curve. These points are called *keys*. You can generate the curves by clicking and dragging the keys. To select certain keys, hold the *Ctrl* key and click the desired keys; to select all keys, hold the *Ctrl* key and click somewhere or the curve/line. Now you can move all selected keys at once.
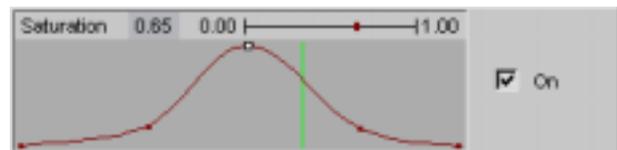
A polydiagram's length corresponds to the active time segment of the project and the clip resp. The vertical green line is the current time cursor. The current time location can be changed by moving the green slider in the Timeline window. Alternatively, you can move it in the polydiagram while holding the *Alt*-key.

We want to explain you briefly some additional options while working with the polydia-grams. Click the name of the setting so that the polydiagram becomes visible. When you edit keys of an audio clip, effect, transition or filter you have a special menu with further commands. Simply select a key as shown in the previous paragraphs and press the right mouse-button so that a list appears.
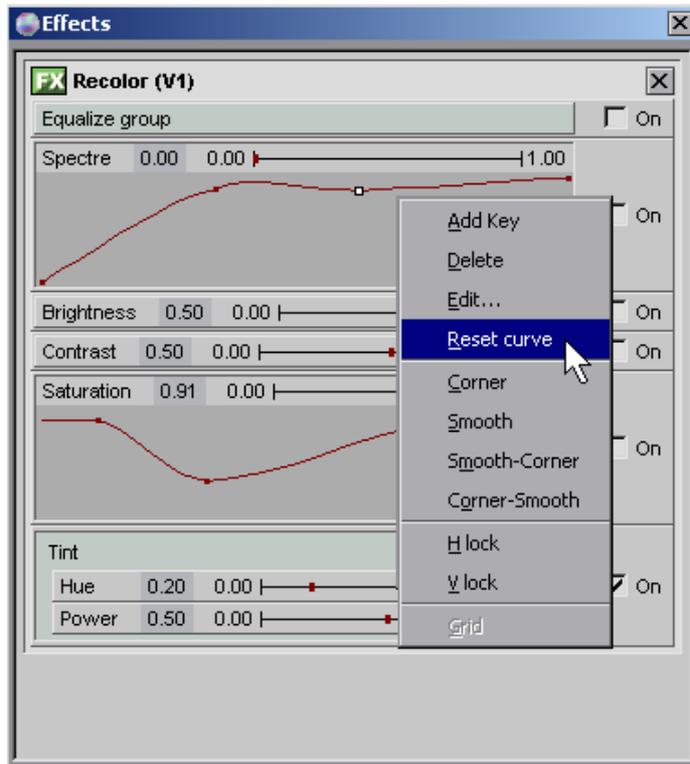
Add key (Alt + A) enables you to define a new key in the corresponding polydiagram.

Delete erases a selected key from the polydiagram.

Edit... lets you define a value for a selected key manually. Simply enter the desired value in the window which appears on the screen after you have chosen this option.

The **Reset Curve** option resets the edited curve and all keys to its default settings.

Corner creates a sharp transition from the selected key to the neighbor-ing keys.

Smooth generates a smooth transi-tion from the selected key to the neighboring keys.

Smooth-Corner enables you to cre-ate a sharp transition towards a key, and it smoothes it towards the next one.

Corner-Smooth is simply the opposite of the previous option.

H lock allows you to lock a selected key on its imaginary horizontal axis. Now you can move the particular key only up and down at the current position.

V lock enables you to lock a selected key on its imaginary vertical axis. Now you can move the particular key only to the left and to the right at the current position.

Under **Grid** you find the option **Vertical Scale** which allows you to turn on and off a dis-play on the left side of the polydiagram. When the scale is shown it helps you to work with the keys more precisely.

The Menus

The menus include commands for working with MainActor v5 project files, general settings, setting interface options and accessing help resources.
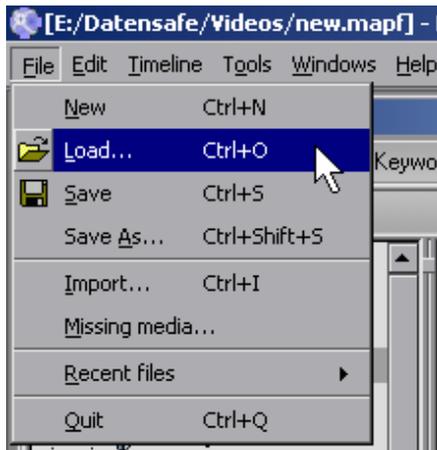
On the **File** menu:

The File menu contains several options for working with MainActor project files (file extension "mapf").

**New** creates a new, empty MainActor v5 project.

Load... enables you to choose and load a MainActor project that you have already created and saved.

Save enables you to save the current project. The first time you save a project, you will be prompted to name it and choose the location where you want to save it. MainActor project files are saved with the "mapf" extension, e.g. "Happy Birthday.mapf".

Save As... lets you save a copy of the current project under a different name.

With **Import...** you load projects which were produced with MainActor v3.65.

The **Missing media...** option displays the missing files of an incomplete project, where clips have been removed or deleted, and enables you to search for them on your computer. If you choose this option when there is an incomplete project in the Timeline, the following window appears:
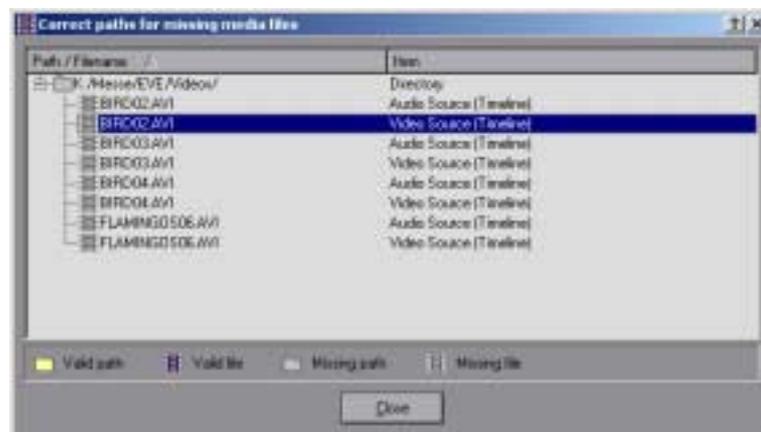
Normally, the window appears automatically when you load an incomplete project. But if you open such a project anyway, use the **Missing media...** option to look for the missing clips and/or streams later on.

The **Correct paths for missing media files** window shows the correct file names and destinations of the missing audio and/or video streams. When you right-click one of the missing clips, you can select the **Browse...** option. Simply follow the instructions in the following window to search for and specify the correct file for the project. After you have found all necessary files, press the **Close** button in order to return to the current project.

Recent files gives you a list of previous opened project files. Choose a project from the list in order to load it into the Timeline of MainActor v5.

Quit exits the program.

On the **Edit** menu:

The **Undo** command lets you reverse the result of your previous action.

The **Redo** command reverses the result of an undo action.

Cut is a normal extract function.

Copy enables you to copy clips or other objects.

Paste is the common insert command.

Delete removes a selected clip or object.
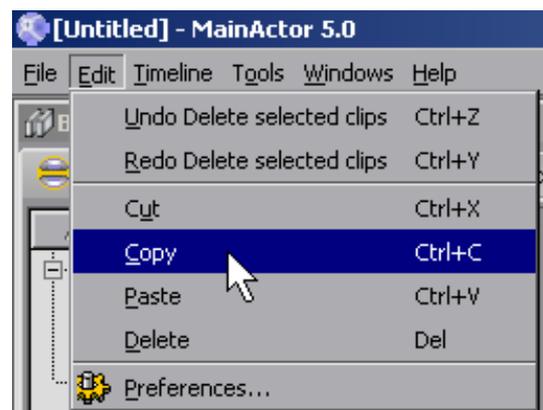
Under **Preferences...** you can change a lot of general and interface settings, e.g. the duration of the waveforms, the render options, the number of Undo-steps, fonts, colors etc. You can also change the language of the online texts here.
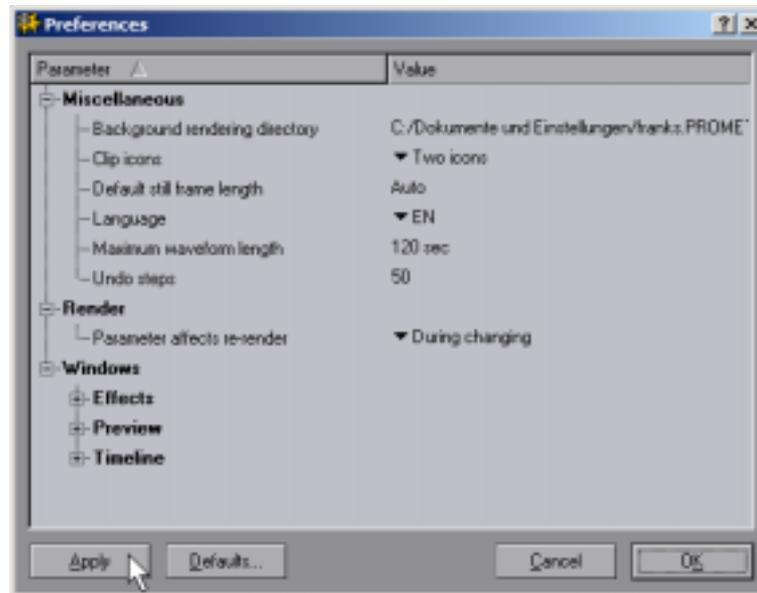
Here are some remarks on the most important options in the **Preferences** dialog:

Under **Background rendering directory** you specify the directory where the files for background rendering are swapped out temporarily.

The **Default still frame length** option allows you to specify the duration of still images you want to import and add to the Timeline.

Under **Language** you change the language of the program texts.

The option **Maximum waveform length** enables you to specify the time, MainActor v5 shall pre-calculate the audio wave of a clip while adding it to the Timeline.

The above described options are only some examples for preferences in MainActor v5. The are many more options e.g. under **Windows** which specify colors, fonts and so on.

Click the **Apply**, and then the **OK** button so that the changes will be assigned to your project. Otherwise press the **Cancel** button. If you want to reset MainActor v5 to its original settings, press the **Default...** button.
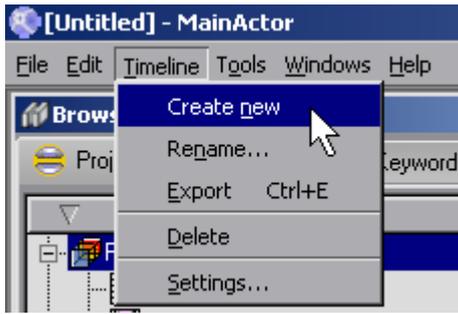
On the **Timeline** menu:

Create new generates further timelines. You can switch through the timelines by using the tabs on the bottom of the Timeline window. This option allows you to work on several projects at the same time.

With **Rename...** you change the name of a timeline. Enter the preferred name of the timeline in the appearing window, and confirm with **OK**. Now you see its in the chosen tab you use to switch through the different time-lines.

The **Export...** option opens a dialog box where you can adjust a lot of settings for render-ing your project in a file. Pressing the **Export the Timeline** Button above the Timeline opens this window as well. Here you set the parameters for exporting a project into a video. You can render a single frame, several frames or the whole project. There are a lot of different file formats available for the user. We will explain you the most important parameters of the project right away.
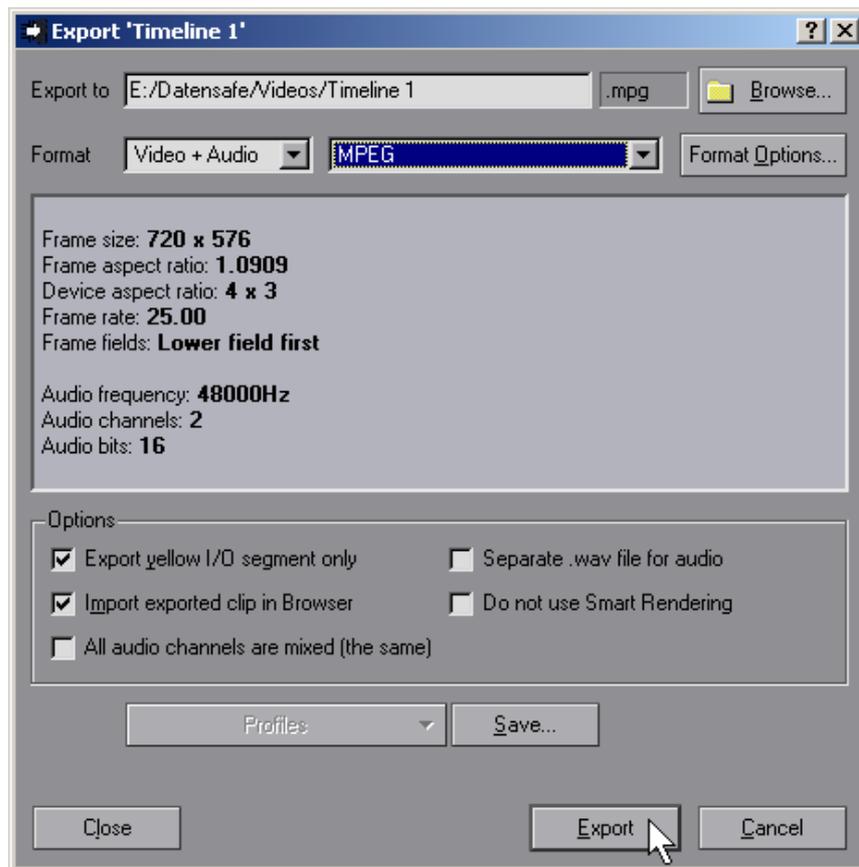
The **Export** dialog box is divided into three parts: Settings for **Video** and **Audio,** and some general settings for the output file.

The general settings offer several options for naming the rendered output file, and defining where it will be exported to.

Under **Export to** you give your video a name and choose the path where it will be stored. The **Browse...** button with the folder enables you to search for a desired location and folder.

In the first drop-down menu **Format** you choose if only the **Video** stream, the **Audio** stream or video and audio (**Video + Audio**) will be exported. As an additional option you find **Files sequence** here. If you select this option, you have the opportunity to choose a file type for exporting your project as a series of images, e.g. as JPEGs, BMPs or any other of the numerous formats available here. These will be displayed in the next drop-down menu. In the second menu you specify the preferred video and image format for the output file, e.g. MPEG, DirectShow, DV AVI etc. You gain access to further settings by clicking the **Format Options...** button. In the following window you can change different parameters, e.g. selecting a specific codec. The parameters vary depending on the selected format. After you have chosen a certain format, its file extension (e.g. *.avi) is shown in the little box in the **Export to** line.

Under **Video** and **Audio** you adjust several parameters for video and audio streams. Depending on the chosen format or settings above some options could be disabled so that you cannot change them. If you choose **File sequence** under **Format** the **Video** parameters are enabled.
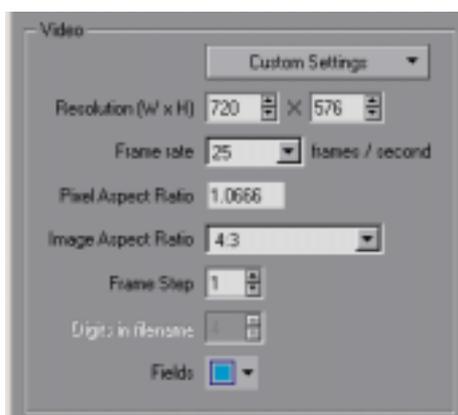
In the **Video** area the user has the possibility to change the **Resolution (WxH)** of a project. You can enter the width and height of your video manually. The buttons on the right enable you to set the value, too.

Under **Frame Rate** you select the number of frames per second (fps). This may be determined by your hardware, so we recommend following the hardware manufacturer's instructions for details.

Under **Pixel Aspect Ratio** you define the ratio of width to height of a frame.

The option **Image Aspect ratio** allows you to adjust the aspect ratio, e.g. 4:3 is the standard TV format, 16:9 is the widescreen format, and you find some more parameters here as well.

The **Frame Step** option lets you specify whether MainActor v5 shall render all frames (represented by the parameter one), or skip frames. This option is useful for quickly pro-

ducing test render output by deliberately skipping frames. It is even possible to enter negative values here to enable backward rendering.

The option **Digits in filename** offers specifications for exporting multiple files. For example, when you define 3 here, the files will be exported as "vacations001", "vacations002", "vacations003" and so on. If you choose 0 here, MainActor v5 generates files like "City1", "City2", "City3" etc. It is useful when you do not want to change the filename each time.

The drop-down menu **Fields** with the blue box enables the user to set the correct field order: **No Fields, Upper Field first**, **Lower Field first**, and **Deinterlace**. This setting should match the field order of the source video.

The drop-down menu **Custom Settings** offers a lot of presets for exporting your project. For example, you work on a project in the Timeline with a resolution of 640x480, but you want to export it in a resolution of 720x576, MainActor v5 offers a lot of presets so that you do not need to adjust many parameters manually. Depending on your hardware you might select a particular setting, e.g. for PAL or NTSC. Simply choose the desired setting from the list.

The options under **Audio** allow you to change several parameters for the audio stream.

Choose **Rate** to change the frequency of the audio stream.

The **Channels** option lets you choose between Mono (1) and Stereo (2).

Under **Bits/Sample** you can define the desired audio bitrate.
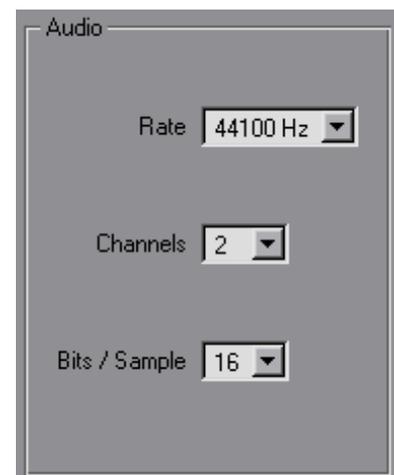
The **Options** section offers several checkboxes which include more functions for exporting your clips:

The checkbox **Export yellow I/O segment only** enables you to render only the segments specified by the yellow line over the tracks in the **Timeline** window. The line's beginning indicates the in-point and its end the out-point. You can change the length of the line by clicking and dragging it to the desired position. It is also possible to remove the yellow line. Simply click in its middle area, and move it to the left or right while holding the mouse-button.

The checkbox **Import exported clip to Browser** specifies whether the exported file will automatically be imported into the browser of MainActor v5 or not.

Using the option **All audio channels are mixed (the same)** allows you to mix all audio channels to one channel. This particular channel distributes the audio to all output channels. If there is only one output channel nothing happens at all.

When you enable the checkbox **Separate .wav file for audio** automatically generates an additional audio file as well.

Ticking the checkbox **Do not use Smart Rendering** disables smart rendering, so that it is not used for exporting a project.

The two buttons **Profile** and **Save...** enable you to save your user defined video and audio settings for the output file so that you can use them in future projects. Press the **Save...** box, and enter a name for them in the appearing window. The next time you open the **Export** window you can choose the previous saved settings from the **Profile** drop-down menu.

You can save the current render settings within a project by pressing the **Close** button, or quit the dialog box by using the **Cancel** button.

If all settings are correct, start the rendering process by clicking the **Export** button. In the following window an indicator shows the rendering progress. It also gives some information about the output file. To stop the rendering process click the **Stop** button. If MainActor v5 uses Smart Rendering, there will be no preview available.
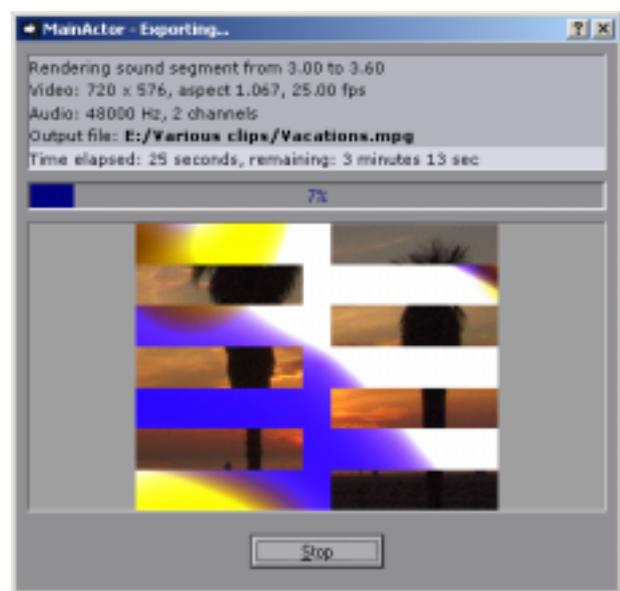
Back in the **Timeline** menu:

Delete removes the currently active timeline from the Timeline window.

Settings... opens a dialog box which includes a lot of general settings of the current project in the timeline. You can also reach this window by clicking the **Change Timeline settings** button in the Timeline window. It contains similar options for **Video** and **Audio** you have already met in the **Export** window. You also find many **Custom Settings** here.

Under **Video** you find the following options:

The drop-down menu **Custom Settings** offers a lot of presets for creating a new project in the timeline. It is also important for the intended use of a project. Depending on your hardware you might select a particular setting, e.g. for PAL or NTSC. Simply choose the desired setting from the list, and the parameters are changed automatically.

Under **Frame Rate** you select the number of frames per second (fps). This may be determined by your hardware, so we recommend following the hardware manufacturer's instructions for details.

Under **Pixel Aspect Ratio** you define the ratio of width to height of a frame.

The option **Image Aspect Ratio** allows the user to define the ratio of width to height of a picture (e.g. the common parameters 4:3 or 16:9).

The drop-down menu **Time alignment** enables you to define the frame steps size you move forward and backward when using the cursor keys in the Timeline. The available parameters are **Frames** and **1/2 Frames (Fields)**.

The options under **Audio** are the same as in the Export window:

The option **Rate** enables you to change the frequency of the audio stream.

Channels let you choose between Mono (1) and Stereo (2).

Under **Bits/Sample** you can define the preferred audio bitrate.

Cancel exits the Timeline Settings window without confirming the parameters for the project.

When you click the **OK** button the settings are confirmed for the current project.

On the **Tools** menu:

The **Tools** menu contains one option right now.

The **DV Capture...** tool enables you to import videos from a DV camcorder. We will explain the functions later on.

On the **Windows** menu:

This pull-down menu offers various options for arranging as well as organizing the different work areas and windows of MainActor v5 on the screen. You have the opportunity to move and place the different windows anywhere you like on the screen so you can simply use the windows you really need, and hide the others. When you need the other work windows they are just a mouse-click away. It is even possible to change their size. The result is that you can design an individual interface which suits you best. When there is a tick in front of the name the option is activated.
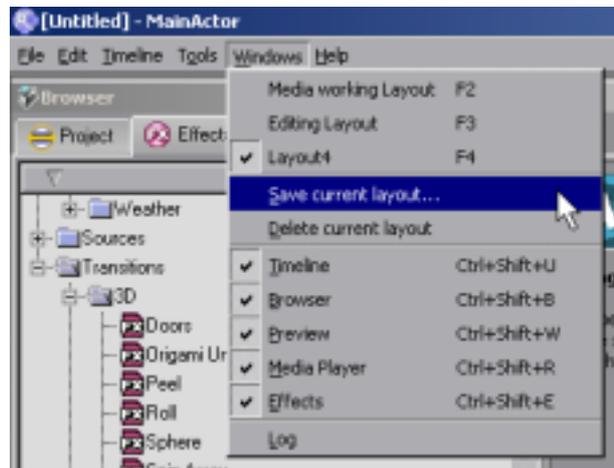
The options **Media working Layout** and **Editing Layout** are two default interface layouts for MainActor v5. In the screenshot you see also a layout called **My Layout** which is a user defined layout.

The option **Save current layout...** enables you to save your personal interface. With MainActor v5 you can arrange the work windows wherever you like them and save their position as an individual setting. This is useful if more than one user works with MainActor, i.e. every user has his individual interface for working on a project. Simply give the layout a name, and in the future it appears in the **Windows**' menu list so you can select it every time you start the program.

Delete current layout erases the layout which is active at the moment.

Timeline lets you toggle on/off the Timeline window.

The option **Clipboard** toggles on/off the Browser window.

Preview lets the corresponding window appear or disappear.

Media Player toggles on/off this window. The Media Player window is deactivated here.

The **Effects** window appears or disappears when you choose the corresponding option.

With **Arrange windows** you reset all window to their original position, in case they have been extended beyond the screen's borders and cannot be manually resized again.

The **Log** window shows all the past commands and steps the user has performed during a project session, and even since he has started MainActor v5.

In the **Help** menu:

MainActor Manual... opens this documentation as a PDF-file.

The **Enter serial number...** option enables you to unlock MainActor v5. In the appearing window, simply enter a valid key you purchased in the appropriate input prompt to remove the watermark. You have to restart the application before the serial number can take effect.
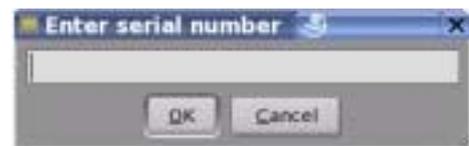
When you choose the **About MainActor...** option a splash screen appears which shows you the current version of MainActor v5. A mouse-click on the window closes it again.

Useful Keyboard Shortcuts

MainActor v5 includes innumerable keyboard shortcuts for the most important functions of the software. In the following we want to present you these useful shortcuts which make video-editing much easier.

Start/Shutdown:

Alt + F4 or **Ctrl + q** closes MainActor v5.
Ctrl + o loads a MainActor v5 project of your choice.
Ctrl + i lets you import an old MainActor v3.65 project.
Ctrl + n creates a new project.
Ctrl + s saves the current project in the Timeline.
Ctrl + Shift + s enables you to save the current project under a different name.

Copying/Pasting/Extracting:

Ctrl + c is a usual copy function. It copies selected item to the clipboard.
Ctrl + x is an extract function. You can move items to the clipboard with it.
Ctrl + v is a normal paste function.

Undo/Redo:

Ctrl + z is a undo function which reverses the last command.
Ctrl + y is a redo function.

Media Player/Preview:

When you want to use these functions you have to ensure that the **Media Player** and the **Preview** window are the active windows, otherwise the shortcut would come into conflict with the Timeline keyboard functions.

The key **i** or sets an in-point.
The key **o** sets an out-point.
The key **u** resets the in/out marks to the clips starting and end point.

Pos1 lets you jump to the starting point of a clip.
End jumps to the end point of a clip.
Shift + i or **Page up** jumps to the mark-in point.
Shift + o or **Page down** jumps to the mark-out point.

With **Space** you can start the playback. If you press this key again the playback will stop.
The key **p** starts as well as stops a playback for the In/Out segment.

Left arrow moves one frame backward.
Right arrow moves one frame forward.
Shift + Right arrow jumps ten frames forward.
Shift + Left arrow jumps ten frames backward.

Switching the Timeline modes:

The key **1** activates the *Insert* mode.
The key **2** activates the *Overwrite* mode.
The key **3** activates the *Fill* mode.
There are also some functions for placing clips directly in the Timeline by using these modes:

Ctrl + 1 adds a clip in the *Insert* mode directly to the Timeline.
Ctrl + 2 adds a clip in the *Overwrite* mode directly to the Timeline.
Ctrl + 3 adds a clip in the *Fill* mode directly to the Timeline.

Working with clips in the Timeline:

Ctrl + Left arrow jumps to the previous cut point.
Ctrl + Right arrow jumps to the next cut point.

The **,** key (comma) moves the selected clip one frame backward.
The **.** key (dot) moves the selected clip one frame forward.
Ctrl + , (comma) moves the selected clip ten frames backward.
Ctrl + . (dot) moves the selected clip ten frames forward.

Ctrl + a allows you to select all clips in the Timeline or the Browser.
Del or **Backspace** deletes a selected item in the Timeline and the Browser.
The **k** key cuts a selected clip at the current slider position.

The **+** or **z** key zooms in items in the Timeline in order to maximize them.
The **-** or **x** key zooms out objects in the Timeline in order to minimize them.

Exporting:

Ctrl + e exports the current project in the Timeline.

Sound:

You can hold down the **Alt** key while changing the current time in the Preview or Timeline window to hear the audio frames at the current position.

Quickstart Tutorial
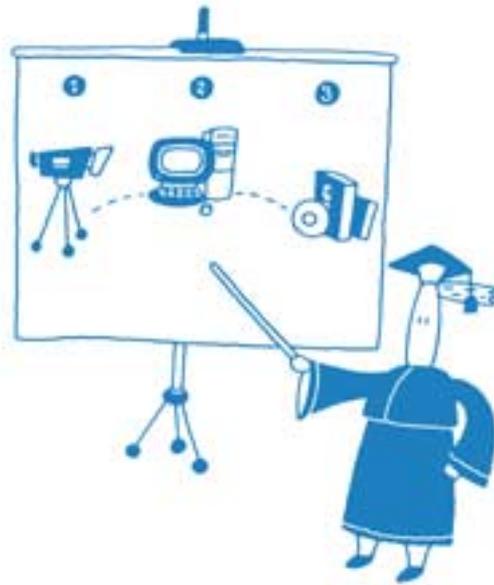
Quickstart Tutorial

In the following we want to present you a brief tutorial on how to produce a project with MainActor v5.

1. Start MainActor v5 if it is not already running. The different work windows appear on the screen.
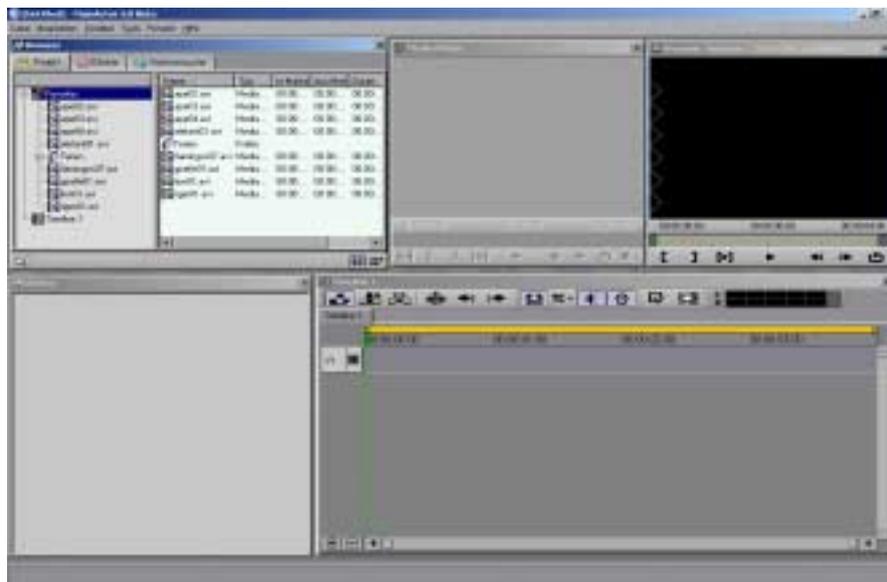
2 Assuming that we did not add any clips to the clipboard before, we have to import the multimedia files we want to use in our project.

First of all, we have to create a folder for our multimedia clips. Activate the **Project** tab and select the **Favorites** clipboard in the left part of the window. Press the right mouse button and create a new folder as described before. Now change the name of the folder by highlighting the *New Folder* writing and pressing the right mouse button. Choose **Rename** from the appearing list and enter the new name for the folder.
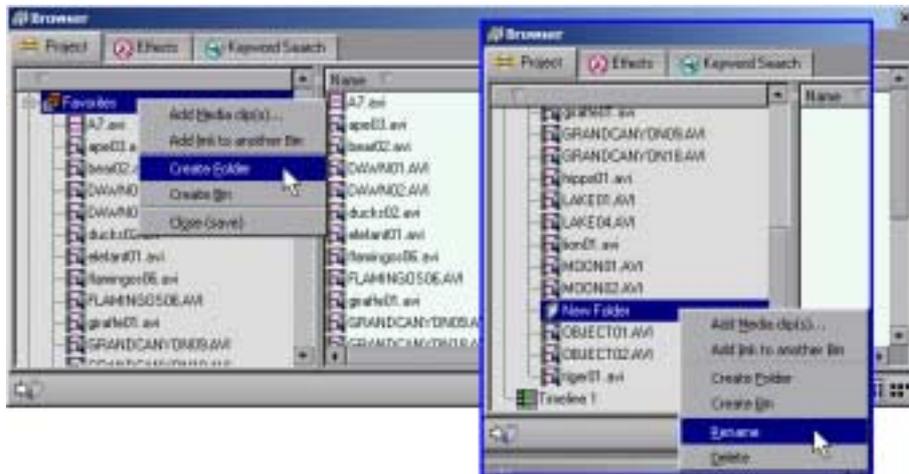
Now you can assign a video clip to the folder. It is possible to create as many folders as you like. If you have already added some clips to the bin you can drag-and-drop the desired video from the Browser directly into the Timeline.

3 In order to add multimedia clips to your folders you have to select one of them. Then press the right mouse button, and choose **Add Media clip(s)...** from the appearing list. Alternatively, you can press the small button highlighted by the red circle.
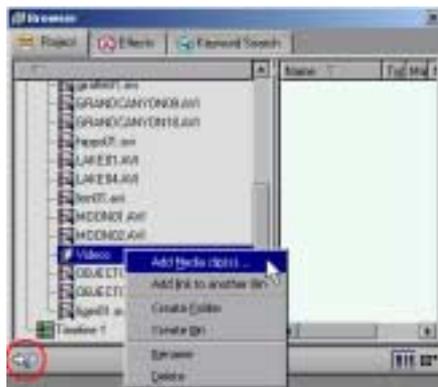
In the following **Add Media file(s)** window you can search for the desired video and audio clips for your project. When you have finally found the correct clip, mark it and confirm with **OK**, so that the clip is assigned to the folder.

The **Add Media file(s)** window offers the opportunity to trim multimedia clips in advance, i.e. removing unwanted portions from the beginning and ends of clips by setting an in point and out point for each of them. Material before the in point and after the out point does not appear in the project. We show you how to use this function later on when we add a second video to our project.

4   Now we want to add a video to track 1. For that reason, click the desired clip in your bin and drag it directly into the Timeline.
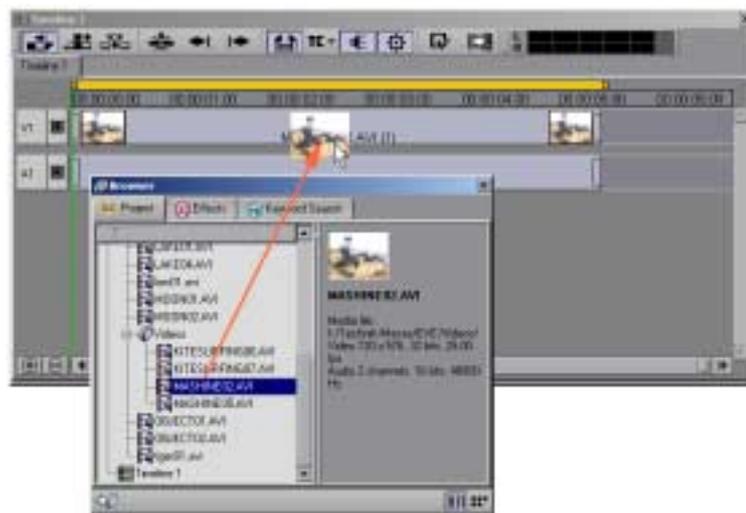
5 We want to add a special effect to our clip in track 1. First of all, we activate the **Effects** pane by clicking the corresponding tab. Choose a folder which contains an effects that suits you. To apply an effect, we drag it from the pane directly onto the preferred clip in the Timeline. The chosen effect appears on track V1 now.

To see a preview of the clip and its effect you can press the **Play** button in the **Preview** window.

It is possible to fine-tune effects with MainActor v5. Simply double-click the name of the effect in the Timeline in order to copy its settings to the **Effects** window.

For our example, we chose a very simple effect called **Aged Film** (**Filters** > **Special**). When you apply it to a video, it looks like an old black and white movie with interferences. This effect is not very complex. We recommend to play around with the parameters until you find a good result. As you can see in the polydiagram, we changed them over time. Of course, you can choose any other effect here.
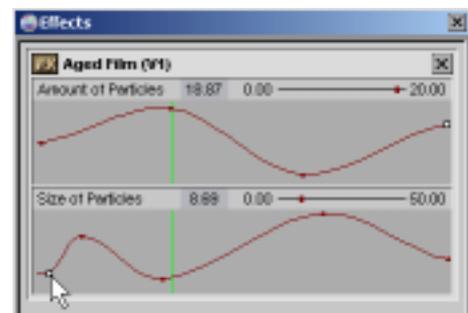
6 Now we want to add a second track to our project. Move the cursor into the Timeline window and press the right mouse-button. From the appearing list, choose the option **Add video track**. A new track (V2) appears in the Timeline window.

7 Add a new clip to your project now. At first, repeat the steps under paragraph 4. You should position the new clip that it slightly overlaps with the clip in V1. We explain the reason for it to you later on.

8 When we start the preview we will see that the clip in track 1 suddenly changes to the second clip in Track 2. That does not look very attractive for a video. We want to have a smooth and movie-like transition. For that reason we activate the **Effects** tab and click the **Transitions** folder in the Browser. Open one of the subfolders to choose a suitable transition. When you select a transition its preview is shown on the right side of the **Effects** pane.

To use a transition you simply click the desired item, and drag it from the Browser directly on the clip's beginning in Track 2. The transition automatically fits in the overlapping space of the two clips, so that you do not normally need to change the length. Here we choose the transition **Band Push** from the **Push** folder. Of course, you can use any other transition here as well.
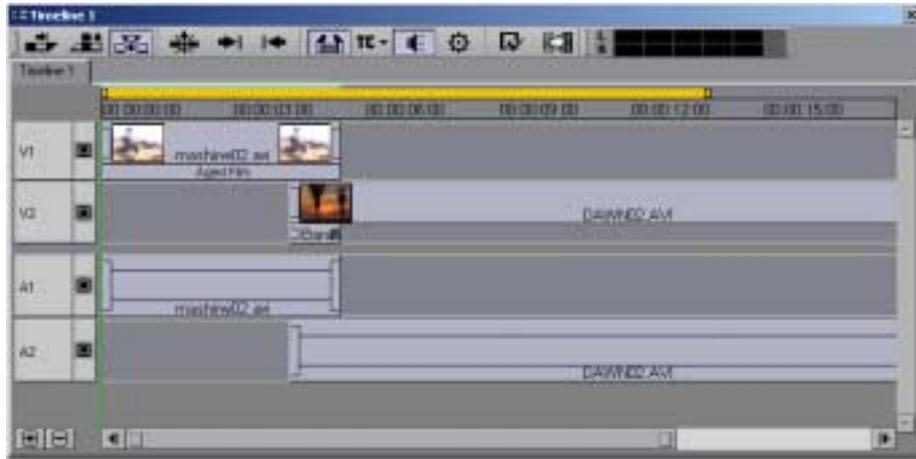
If necessary, you can extend the transition. At first, we activate the **Toggle clips ends on/off** button (if it is disabled). When you click on the little lever at the beginning or end of the transition you can drag it to the desired length.

You have to pay attention that the end of the transition matches the end of the first clip, i.e. it is useful to drag the transition to this position if it is not already there.

9   We will add a new clip to track 1. This time we trim the clip we want to add to our project. Drag the clip on **V1** so that it slightly overlaps with the last clip on track 2 (**V2**). Double-click the new clip in order to copy its settings to the **Effects** window. Click the box next **Media file** so that the **Add Media file(s)** window appears. Select the desired clip if it is not already active. You can see the first frame of it in the preview area on the right.

For trimming a clip we use the controls under the preview area. To define an in point you can drag the green slider or use the **Play** button and the **Frame forward/backward** buttons until you find the desired frame where you want your clip to start in the project. If you have finally found the exact frame, click the **Set IN-point** button (labeled with the tool-tip here). The position of the in point is shown in the display directly under the preview area (highlighted by the red frame). For a preview of the trimmed sequence click the **Play IN-OUT** segment button. In this case only the user defined segment will be played back. Press the **OK** button for confirmation so that the clip is assigned to track 2 (V2).

Of course, you can trim the clip with the **Media Player**, but we want to show you a different method here.

Of course, it is possible to define a different out point for a clip. Drag the slider to the desired frame, and click the **Set OUT-point** button. The exact position is displayed on the right. In our example we only defined an in-point.


10 As you can see, the trimmed clip is in V1 now. Now we will insert a transition between clip two (track 2) and clip three (track 1). For that reason, we activate the **Effects** pane in the Browser window, and open the transition folder. Choose a transition, and drag it onto the second clip in V2.
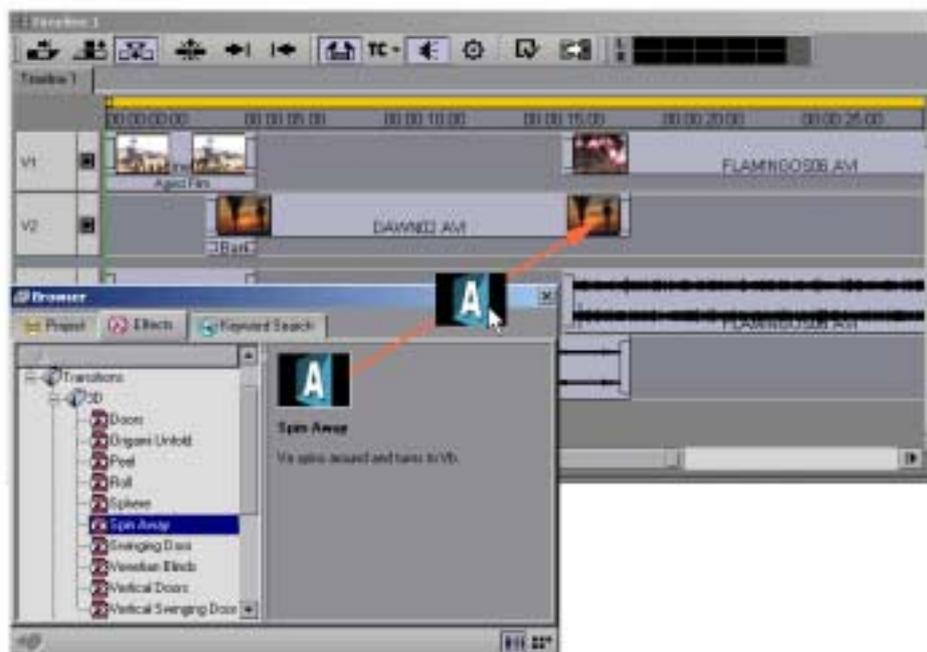
The clip shows the name of the transition now.

11 When you want to edit a transition, double-click its name in the Timeline in order to copy the transition's parameters to the **Effects** window. Depending on the transition you can adjust several settings, e.g. the direction, number of boards etc. of it. We recommend to play around with the settings so that you become accustomed to its use. It is also possible to change the duration of the transition. Click on the little boxes at the beginning or end of the transition, and drag it to the desired length.

You can start a preview of your project any time in order to have a look at your results. Simply press the **Play** button in the Preview window.
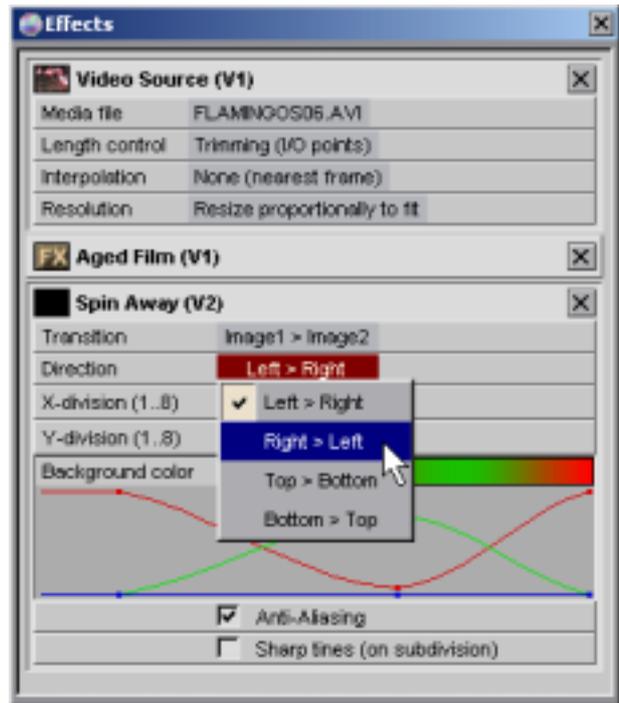
Of course, you can add more clips, effects as well as transitions, and even tracks to your projects. Simply repeat the steps in the paragraphs which deal with the corresponding topic.

12 Now we want to add a different audio stream to the third clip of our project in track 1 (V1). Move the cursor to the clip's audio stream and double-click it so that the settings are copied to the **Effects** window.

Should your clip contain audio you have the opportunity to add a different audio stream to your project. Select the audio clips you want to delete while holding the *Ctrl*-key, and press the right mouse-button. Choose **Delete selected clips** from the list or press the *Delete* key in order remove the audio from the Timeline. Then you can drag the desired audio clip from your clipboard directly on the audio track in the Timeline. In this case you have to adapt its length in the Timeline window.

In the **Effects** window, move the cursor to the box next to **Media file** and click the name of the audio stream. In the following **Add Media file(s)** window you can search for the desired audio clip for this track as we have already described for video clips earlier in this manual.
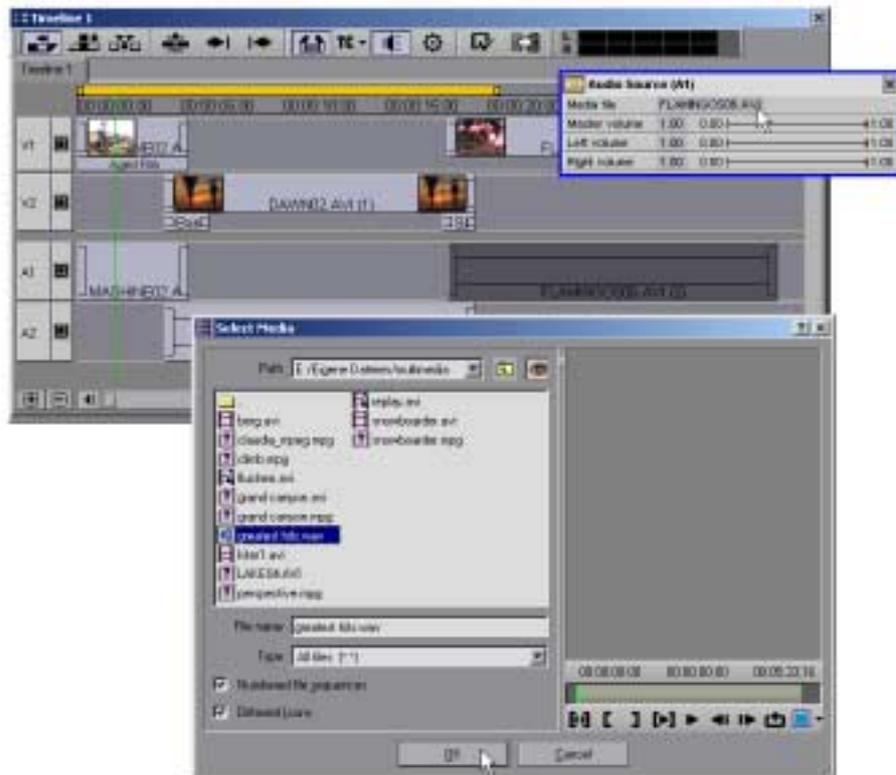
You can shorten or extend the audio track in the Timeline if required by dragging its ends.

13 Finally, we want to insert a text into our project so that in the middle of the third clip (track 1) a text appears and fades in as well as fades out. At first, we drag the **2D Text** option (under **Text**) from the **Effects** pane in track 2 somewhere under the desired clip. If necessary, you can extend the clip as shown in previous paragraphs for other clips, effects or transitions.

14 In order to enter and edit the text you have to copy the **2D Text** settings to the **Effects** window. Move the green slider approximately to the center of the 2D Text object in the Timeline so that you can see your results in the Preview window.

For this tutorial we want to adjust only a few parameters for the text. We changed the font color, let it fade in and out as well as let it getting smaller and bigger over time. Of course, you can play around with the parameters to get different results.

First of all, enter the new text in the box at the bottom of the window. Remove the old "MainConcept" text, and enter a new one. In the drop-down menu **Font** you can also select a different font type.

We changed the color of the text by clicking the colored box. In the appearing window we chose another font color.

Under **Opacity** you can adjust if a text is faded in and out. Click the word **Opacity**
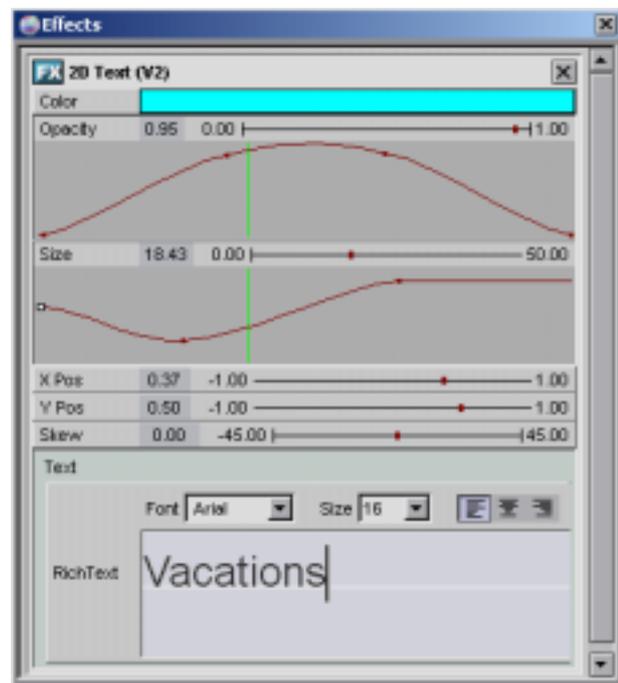
so that the polydiagram becomes visible. Now we define three new keys (two in the middle and one at the end of the line) by clicking the preferred position on the red line while holding the *Shift* key. Then we select the first and the last key. Simply hold the *Ctrl* key and mark the two keys. You can move both keys with your mouse at the same time now. Afterwards, set the two keys in the middle to a high position so that they will roughly look like a line. During this period of time, the text is completely visible.

We want our text to become bigger and smaller while moving through the picture from the left to the right. For that reason, we have to activate the polydiagram by clicking **Size**. Now we can define more keys as described above and generate a curve.

We leave the option **X Pos** at its default settings so that the text moves through the screen from left to right. We slightly changed the position of the title on the y-axis by using the **Y Pos** slider.

If you like, you can change the settings for the rest of the options. It is possible to start a preview of the current project by using the player in the **Preview** window.

You can see the results in the Preview window when you move the slider or start a preview from there. You can extend the duration the **2D Text** will appear on the screen by dragging the end of the clip to the desired length.

15 Finally, we want to export our small project. First of all, you have to define the area in the Timeline which will be exported. For that reason, click the little box at the end of the yellow line above the Timeline and pull it to the end of the last clip until it snaps automatically. The yellow line marks the area which will be rendered during the exporting process.
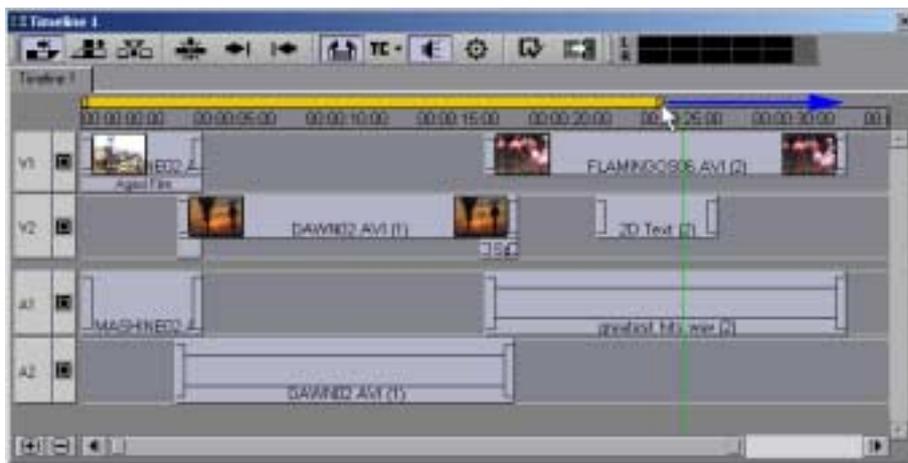
16 Now we can export our project as a DirectShow AVI file. Click the **Export Timeline** button on the top right of the Timeline.
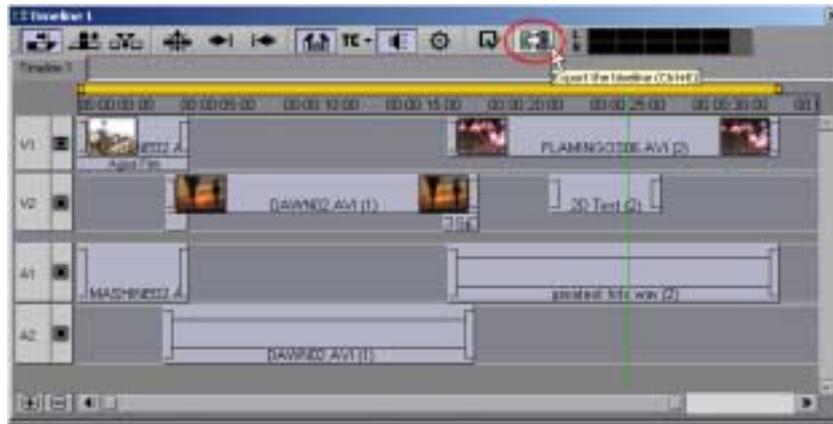
In the following window you must adjust several settings for the output file. As we said before, we want to generate a DirectShow (or Windows) AVI file. We will explain the parameters you have to change in a moment.

After changing the settings the **Export** window should look like this:
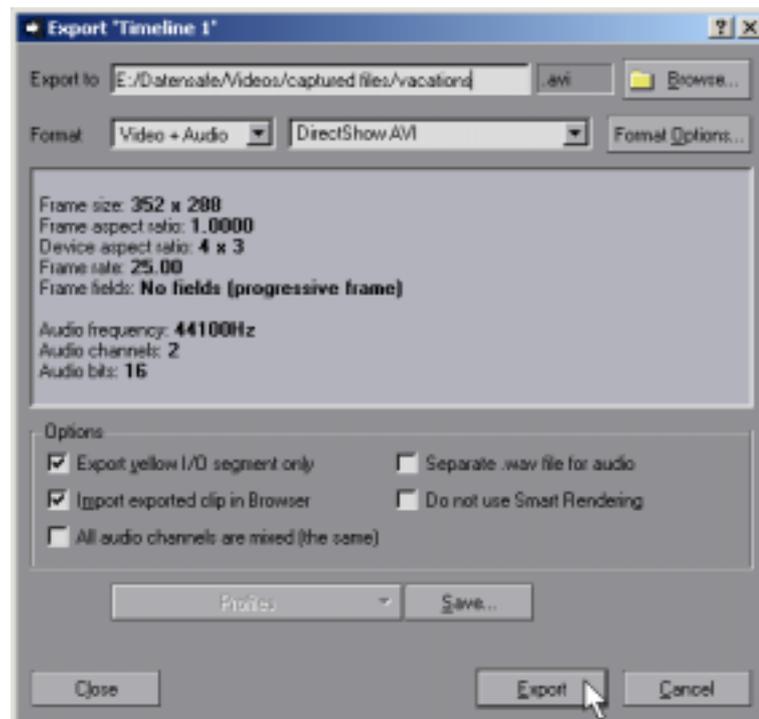

First of all, you should activate the **Export yellow I/O segment only** checkbox so that only the objects under this line will be rendered.

Under **Browse...** you give your AVI file a name and search for a desired location. Simply follow the instructions in the **Browse...** window.

In the first drop-down menu under **Format** you have to choose **Video + Audio**. In the second one select **DirectShow Video**. When you click the **Format Options...** button a window appears where you can adjust further settings. Under **Video Codecs** choose the correct codec, e.g. the MainConcept MJPEG Codec. This depends on your system requirements. In the drop-down menu **Audio Codec** select the appropriate codec as you can see in the screenshot above. This setting also depends on your system requirements. We left the rest of the parameters at their default settings.

You should leave the rest of the settings as they are. Click the **Export** button to start the render process. You can watch the export in a preview window. When rendering is finished the window closes automatically.
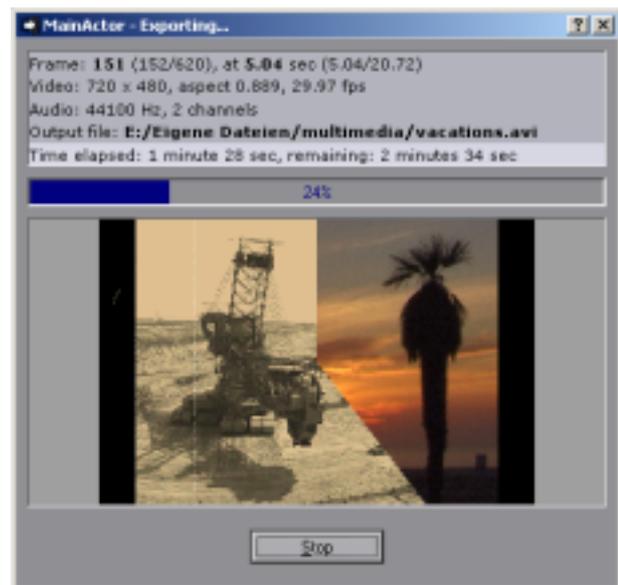
Congratulations! You produced your first small project with MainActor v5.

Tools

In this chapter we want to introduce a useful tool which is included in MainActor v5. It allows you to capture video footage from a digital device.

The DV Capture Tool

The **DV Capture** option allows you to import video footage from a digital camcorder to your computer. We will explain the different settings of this module in a moment.
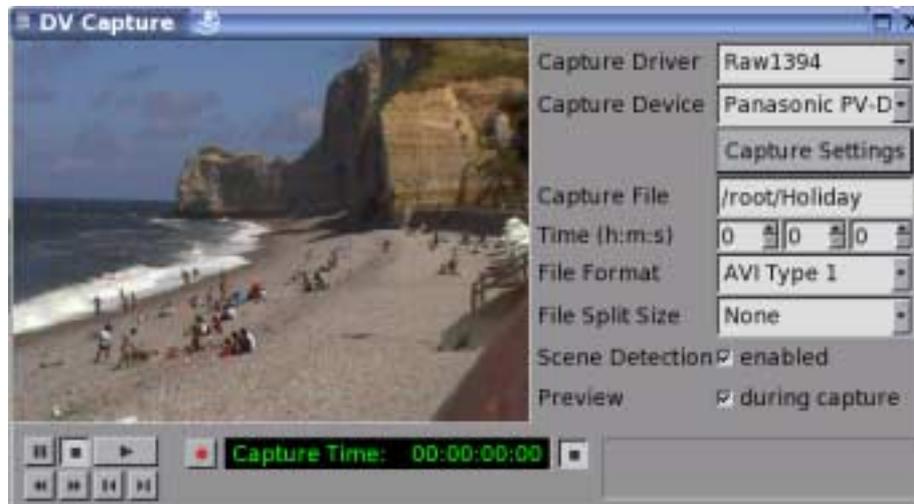

At first, you should change the **Capture Settings** on the right.

The drop-down menu **Capture Driver** allows you to choose the desired driver for capturing video footage. The available options are **Raw1394** or **DV1394**.

The drop-down menu **Capture Device** enables you to select the desired digital video source for capturing your videos. It is possible to connect several devices to your computer. A digital video device is for example your DV camcorder.

The large button **Capture Settings** opens a window which offers several options for adjusting the FireWire port as well as preview behaviour. In the **Capture Settings** window you find two different panes: **IEEE1394** and **Preview**. We will explain their settings in a moment.
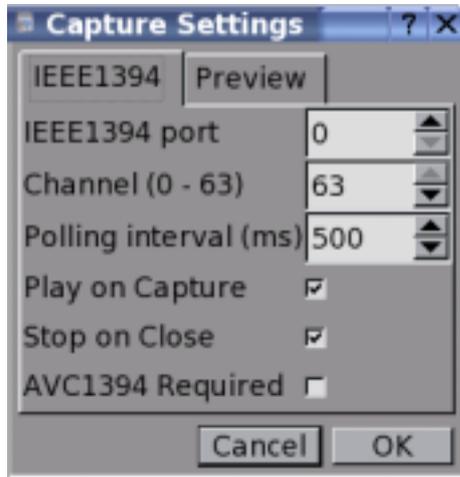
The **IEEE1394** pane:

Under **IEEE1394** you specify the correct port for your capture device. For example: If your FireWire card offers more than one port you can select the desired one by using the spinbox.

The **Channel (0-63)** spinbox enables you to select the appropriate FireWire channel for capturing. Please do not change the option.

We recommend to let the **Polling interval (ms)** option at its default settings as well.

If the checkbox **Play on Capture** is ticked, MainActor v5 automatically starts the tape when clicking the **Record** button.

When enabling the **Stop on Close** checkbox the capture process is automatically stopped when closing the capture window.

The **AVC1394 Required** option is a requirement for the device control.

The **Preview** pane:

The drop-down menu **Video Driver** enables you to specify whether your video driver should work in an acclerated mode or not.

The drop-down menu **Deinterlace** allows you to set the correct field order. Using this option MainActor v5 only shows one frame instead of two fields. This is sometimes useful during video playback to remove stripes in the preview. The available parameters are **none**, **top field** and **bottom field**.

The **Audio Driver** option specifies the appropriate audio driver for capturing video. The available parameters are e.g. **dma**, **dsp**, **alsa**, **artsc** and **csd**.

You can confirm the parameters in the **Capture Settings** window by clicking the **OK** button. Otherwise, click **Cancel**.

Back in the main window of the **DV Capture** tool, you can enter the filename for the video you want to record under **Capture File**. Use the 📂 button on the right to search for the desired location for storing your captured videos.

You can use the same name for multiple consecutive captures. MainActor v5 automatically numbers additional recordings, for example "Surfing0001", "Surfing0002", etc.

Under **Time (h:m:s)** you set the desired capture time in hours, minutes and seconds. Use the up/down arrows or enter a value manually in order to specify the record time.

The **File Format** option enables you to specify the desired AVI format for capturing from a DV camcorder. The available file formats are: **AVI Type 1** and **DV Raw**.

The drop-down menu **File Split Size** enables you to specify the size of segments that will be created during long video captures. MainActor v5 automatically splits data into multiple sequences to bypass file size limitations that are imposed by certain Windows configurations. If you plan to archive captured video after completing a project, you might want to choose a split size that will fit on the type of disc you plan to use for archiving, for example 700-megabyte CD-ROMs.

The option **Scene Detection enabled** enables you to activate the automatic detection of diverse scenes for capturing your videos. The different scenes of your DV tapes will be saved as individual AVI-files. It allows an easier usage and management of the imported scenes.

The checkbox **Preview during capture** enables you to toggle the preview during the recording process on and off.

Under **Capture Statistics** you find several information about the current capture session, such as the number of captured frames, the number of dropped frames, the file size etc.
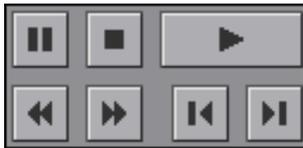
Under the preview area of the **DV Capture** tool window you find several controls. If you are capturing prerecorded video from your DV camcorder, use the VCR-style buttons to control the device and find the point where you want to start capturing. You can also control the device manually by using its physical buttons, however it might be necessary to click the **Play** button in MainActor to open the video data path.

The buttons on the top left perform the following functions (in order, top row from left to right): **Pause, Stop, Play, Fast forward, Rewind, Frame forward** and **Frame backward**.

Use these controls to find the exact position on your video tape where you want to start with the capturing process.

The bar under the preview area contains two buttons for starting and stopping the capture process.
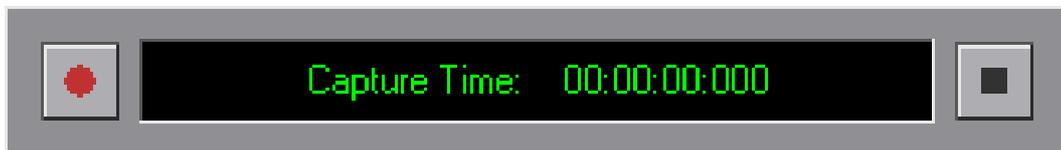
The two button on the left and right perform the following functions:

The red **Record** button starts the capturing process.

The **Stop Record** button stops the capturing process.

The display between these two controls shows the current **Capture Time** during the recording process.

If you have done all the settings and are ready to start capturing, press the red **Record** button.

When you are done capturing, click the **Stop Record** button, and the recorded video footage is added to the previously specified folder on your system, and to a **Captured** folder in the **Project** pane of the Browser, which is generated by MainActor v5.

Capture Windows

MainActor v5 contains a window which allows you to capture video footage from a digital device, so that you are able to edit the clips on your computer later on. On the one hand, you can easily import video from a DV camcorder or deck connected via a 1394 connection (also known as FireWire® and i.LINK®) or any other supporting device. Connect the devices as shown in the documentation of your hardware. In the following we will show you how to capture video from a digital video device.

Capturing Video from a DV Camcorder or Deck

With MainActor v5, you can capture directly from a DV device over an OHCI-compliant 1394 connection. Most affordable 1394 cards are OHCI-compliant.

To capture:

1. Make sure that your 1394 device is working properly. Also make sure that the DV device is connected and turned on. Launch MainActor v5 (if it is not already running), and activate the **DV Capture** window in the **Tools** menu. The **DV Capture** window appears on the screen.
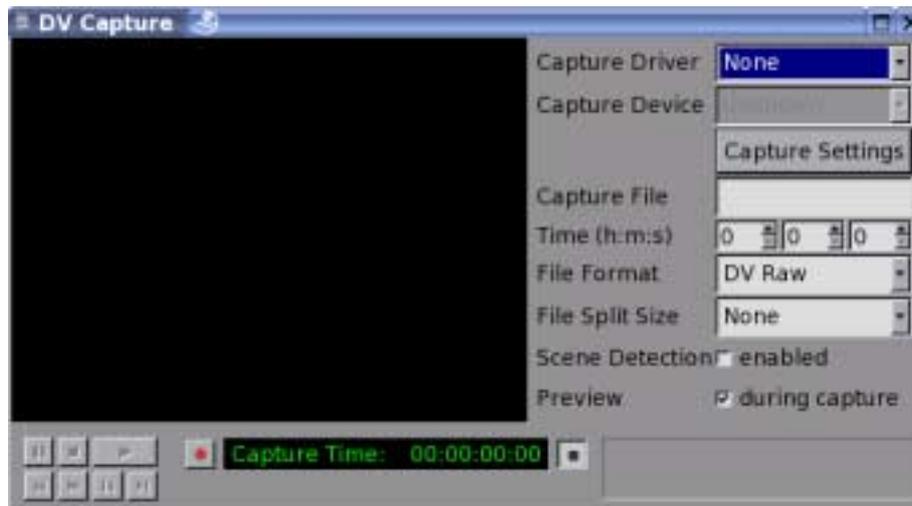
If you want to capture live video from a camcorder, set the camcorder to *Camera* mode. If you want to capture prerecorded video from a camcorder, set it to *VTR* (Video Tape Recorder) mode.

2. In the Drop-down menu **Capture Device** you specify the correct device for capturing video footage from a DV camcorder.

The DV device's name may vary depending on the device and the distribution of Linux you are using. Furthermore, the list may show any other video device(s) that are connected to your computer.

3. In the drop-down menu **Capture Driver** you specify the appropriate driver for capturing DV footage. In our example, we chose **Raw1394**:
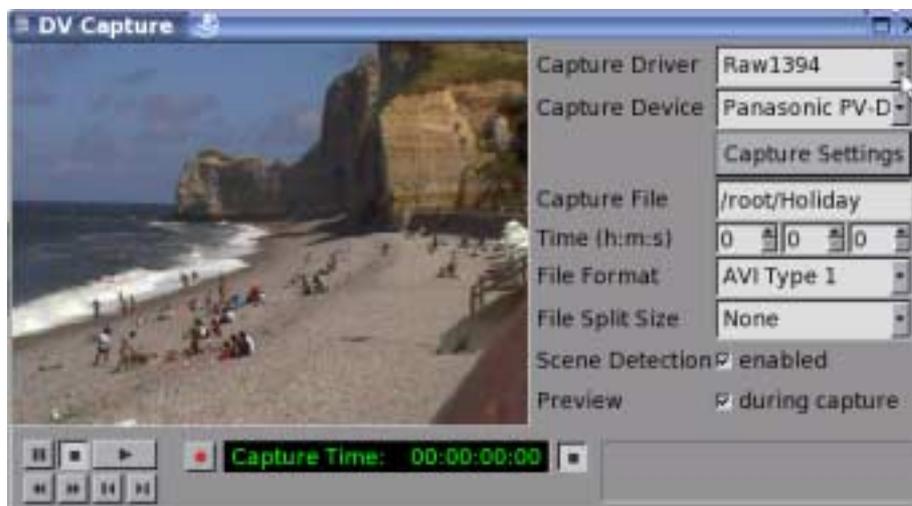
MainActor v5 automatically sets the name that video will be captured under (**capture 0001**), and it alerts you if material already exists with that name.

Overwriting Media Files

Do you want to overwrite 'E:\\capture0001.avi'?

Yes   No   Abort

4. If you want to overwrite the existing video, click **Yes**. Otherwise, click **No**. A dialog box will remind you that you can avoid overwriting files by setting a new name and/or destination.

Reselect Capture Filename

To select another filename, you can use the directory and file browsing buttons

OK
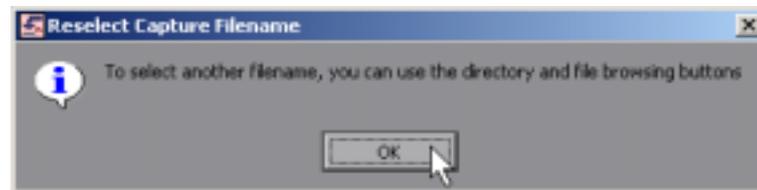
Click **OK** to dismiss that dialog.

5. To change the capture filename, click the browse button 📂 under **Capture File** to choose a new name and/or directory. Press the button, and follow the instructions in the appearing window. In the example shown below, we have changed the capture filename to "Holiday".

You can use the same name for multiple consecutive captures. MainActor automatically numbers additional captures, for example "Holiday0001", "Holiday0002", etc.

6. If you want to, you can adjust the timer under **Time (h:m:s)** to the maximum capture length. In this example, there was not enough hard disk space to hold the default setting of two hours, so we changed the setting to 20 minutes.
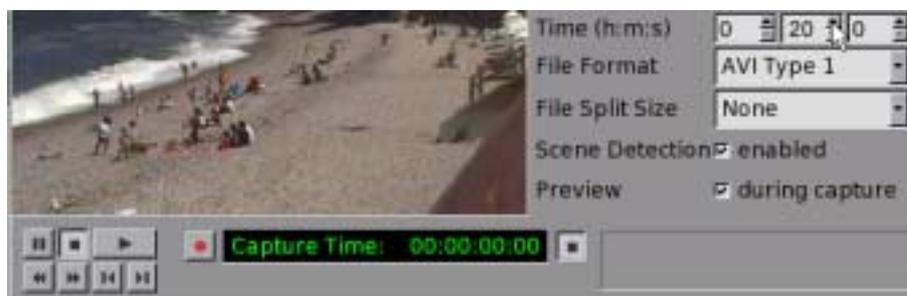
7. Use the drop-down menu **File Format** to specify the desired DV AVI format. In our example, we have selected **AVI Type 1** for the capture file. Of course, you can choose any other format here as well.


Ticking the checkbox **Preview during capture** lets you watch the capture process on the screen.

8. If you like, you can also activate the **Scene Detection enabled** option by ticking the small checkbox. Then MainActor v5 automatically creates smaller clip segments. Alternatively, you can specify the size for the segments which will be captured. Use the drop-down menu **File Split Size** in order to specify a proper file size.

9. If you are capturing prerecorded video from your DV camcorder or deck, use the VCR-style buttons (e.g. **Rewind, Fast forward, Play**...) to control the device and find the point where you want to start capturing. You can also control the device manually by using its physical controls, however it might be necessary to click the **Play** button in MainActor to open the video data path.

10. When you are ready to start capturing, click the red **Record** button at the top left.
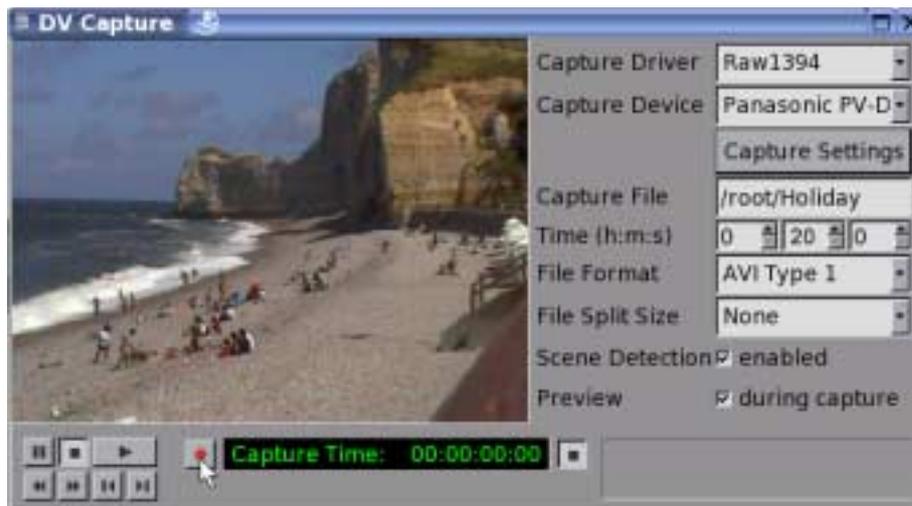
11. When you are done capturing, click the **Stop Record** button.
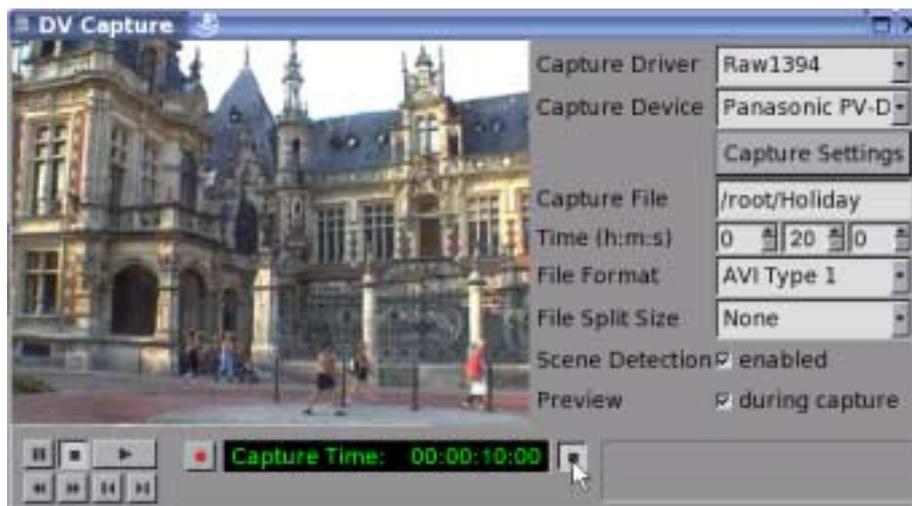
The capture filename will advance automatically, and the captured video clip will be added to the previously specified folder. Additionally, MainActor v5 generates a **Captured** folder in the Project pane of the Browser which includes the recorded clips as well.

12. Repeat steps 9 through 11 as necessary to capture additional material.

Effects, Filters and Transitions

The **Effects** pane of the **Browser** offers numerable filters, effects, sources, transitions and a title generator in order to enhance your videos. In this chapter we will explain how to apply transitions as well as effects, and introduce some of them in a brief example. Some of these items offer only a few settings but others are rather complex. We recommend playing around with their settings to get satisfying results. Many effects and filters are heavily dependent on the source material you use, and that is always different.

Adding effects, filters, sources and transitions

There are two ways of applying an effect, a source or a filter: you can apply it for the whole clip or only for a user-defined clip segment. It is even possible to apply an effect to a clip which already contains another effect, i.e. you can combine different effects to create new ones. You see a preview as well as a brief description of every effect, filter or transition in the right part of the **Browser** window.

When you want to apply an effect, a source or a filter to a whole clip simply drag-and-drop it directly from the **Browser** on the desired clip as shown in the screenshot below. It is also possible to drag-and-drop the animated preview of the effect on the clip.
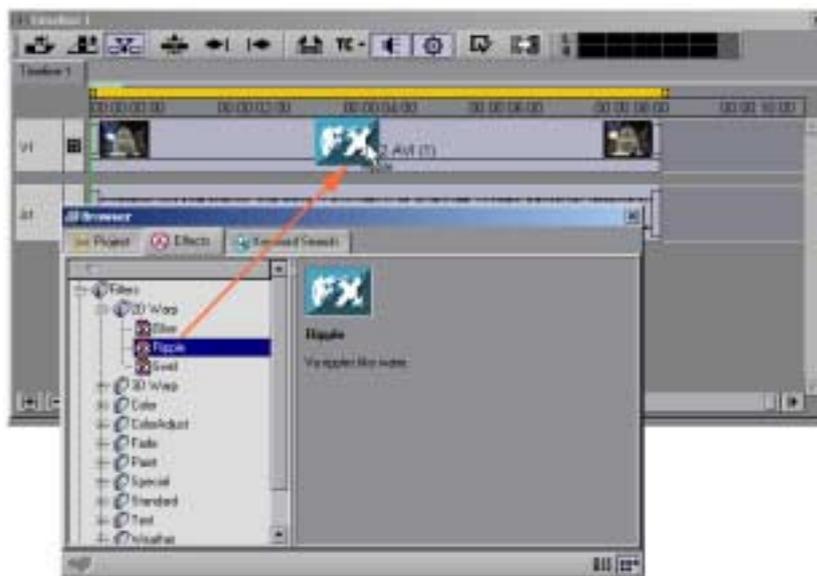

In this case the effect's name is shown directly underneath the clip. Both the effect and the clip are part of the track here. To add another effect to the clip, simply repeat the steps described before. You can delete an effect or a filter by clicking its part on the track so that it is highlighted. Then press the *Delete* key, or move the cursor to the selected area, press the right mouse-button and choose **Delete selected clips** from the appearing list.

It is also possible to apply an effect or filter only to a certain clip segment. You need a second video track for applying this kind of effect. Simply add another video track to your project as shown in previous chapters.

In track 1 you place the clip you want the effect or filter apply to. Then drag-and-drop the desired effect into the second track (V2) as described earlier in this chapter.

After you have placed the effect on V2 you can change the position as well as the length of the effect. When you want to extend the effect, click one of the effect's levers and drag it to the desired duration (top). For changing its position simply select the whole effect, and move it to the preferred position in the Timeline (bottom).

Now the effect or filter is only applied to the user-defined clip segment. You can always watch your project in the **Preview** window in advance.

In the **Effects** pane of the **Browser** window you also find a **Transitions** folder which contains several subfolders. A preview of every transition is shown in the right part of the

Browser. Applying transitions seems to be a bit different at first sight, but once you are familiar with its use, it offers interesting possibilities for combining clips.

First of all, place a clip on track 1 (V1). Then add a second track to your project (V2). Now place a second clip on V2 so that it slightly overlaps with the end of the clip in V1. To place a transition between the two clips, you have to drag-and-drop it directly from a folder on the beginning of the second clip on track V2. The white box indicates that you can drop the transition here. Release the mouse-button so that the transition is placed between the two clips.

In general, the transition automatically fits in the overlapping segments between two clips. If required, you have the opportunity to change its duration afterwards by clicking the transition's end and drag it to the desired length while holding the mouse-button.

As you can see MainActor v5 automatically adds an audio transition between the audio streams in the Timeline. The result is that the sound of the first clip is slowly fade out and the sound of the second clip is faded in. This enables you create smooth transitions. To extend both the video and audio transition, select the lever of the video as well as the audio transition while holding the *Ctrl* key. Afterwards, you can extend both transitions at the same time.

When you hold the *Alt* key when adding a video transition to the Time-line, it is placed there without an additional audio transition. This is useful when you want to maintain the original volume of two consecutive clips.

You can zoom in and out the Timeline view by pressing the minus and the plus buttons. This can be necessary to change the transition's duration. You extend transitions in the same way as clips and effects. Activate the right lever and drag it to the desired length as shown in the screenshot below.
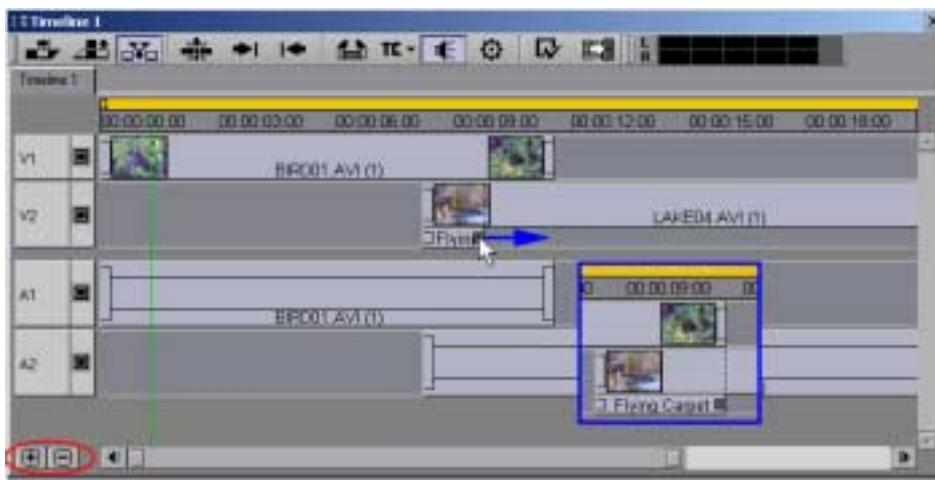
We recommend pulling the transition so far until it corresponds with the end of the clip on the previous track. You see an example in the little picture in the screenshot above. Now clip 1 smoothly changes to clip 2.

If you add a third clip to your project you place it on track V1 so that it slightly overlaps with the end of the clip in track V2. If you want to insert a transition between the two clips, place the transition at the end of the second clip in V2. Repeat the steps mentioned before to extend it.

There is also a different way of using transitions, we have already mentioned earlier in this manual. It is possible to apply a transition to clips which are on the same track. Put a clip on track V1 and another one directly behind it. Switch to the **Effects** pane, and select a transition from one of the different folders. Then drag-and-drop it from the **Browser** between the two clips into the single track **V1.** As shown in the screenshot below, the area for inserting the transition is highlighted by a white vertical line.
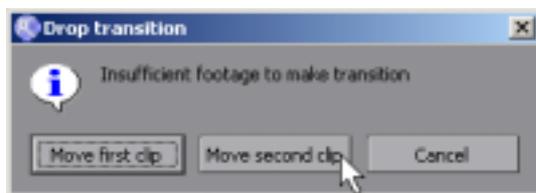
It might be possible that the following window appears on the screen when you release the transition between the two clips. In this window you specify whether you want to move the first clip or the second one for applying the transition properly. It doesn't matter which clip you move. Try for yourself which option offers the best results.

As already described earlier, an audio transition is added to the audio track here as well. Use the same method to extend both the audio and the video transition.

When you hold the *Alt* key when adding a video transition to the Timeline, it is placed there without an additional audio transition. This is useful when you want to maintain the original volume of two consecutive clips.

Now you can lengthen the transition in the Timeline as described in previous paragraphs. Activate one of the levers, and drag it to the desired duration and direction.

Of course, you can edit the transitions in the **Effects** window as shown earlier in this chapter. Double-click the transition in the Timeline so that its settings are copied into the **Effects** window. After you have edited the transition, you can save it for future projects by dragging it from the **Effects** window into a clipboard or folder in the **Project** pane of the Browser.

MainActor v5 offers an separate audio transition for inserting it between two clips which contain audio. After you have placed the desired clips in the Timeline, you have to click the **Effects** tab of the Browser. Open the **Audio** folder and then click the **Transitions** folder. Now place the **Audio Transition** directly on the clip's beginning in the second audio track if you have two of them.
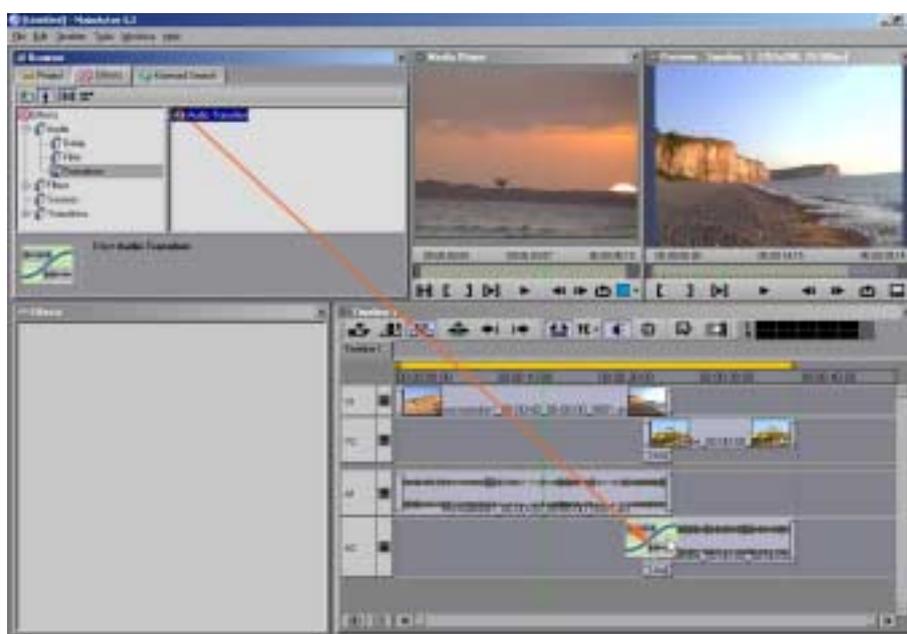
When you hold the *Alt* key while adding an audio transition to the Timeline, it is placed there without an additional video transition. This is useful when you want to use another video transition than the default one between two consecutive clips.

As shown in the screenshot, a video transition has been placed between the video streams as well. Now you can drag the video and/or audio transition to the preferred length. We have already explained this in previous paragraphs.

If you have only one track for the audio streams, you have to extend the video and audio transitions individually. In this case activate the corresponding transition's lever and pull it to the desired length. Repeat this task for the other transitions between these videos if necessary.

As mentioned earlier in this manual, it is possible to save effects, filters, sources and transitions which have already been edited, so that you can use them for future projects. And this is quite simple!

At first, double-click the effect in the Timeline, so that its settings are copied into the **Effects** window. Then you can start changing the different effect parameters. After you have finished adjusting the effect settings, switch to the **Projects** pane of the Browser.

In the **Effects** window, simply click the little effect, filter or transition icon in the header of the corresponding item, and drag it into a bin or folder in the **Projects** pane, as shown in the screenshot below.
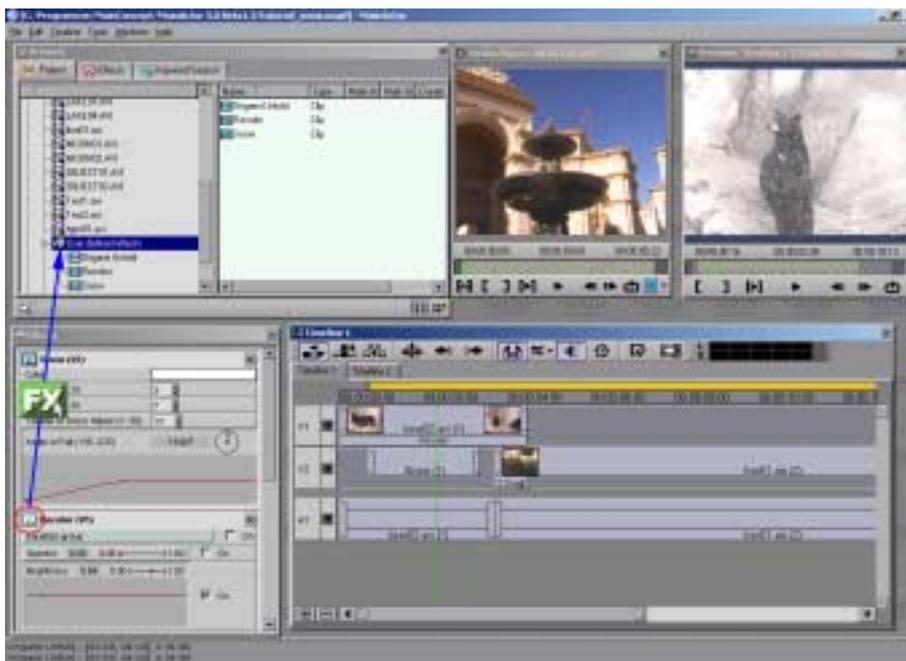
We recommend creating an individual folder (or even a clipboard) for user defined effects, filters, sources and/or transitions in the **Projects** pane of the Browser. It makes it easier for you to manage the many different items.

You apply user defined effects, sources and transitions the same way as the normal ones. Open the folder or clipboard in the **Projects** pane which includes the corresponding filters, and drag them directly on or under a clip in the Timeline, as shown in the screenshot below. It is even possible to drag the effect's thumbnail from the **Projects** pane on a clip in the Timeline. Now the clip includes the user defined effect or filter from a previous project.
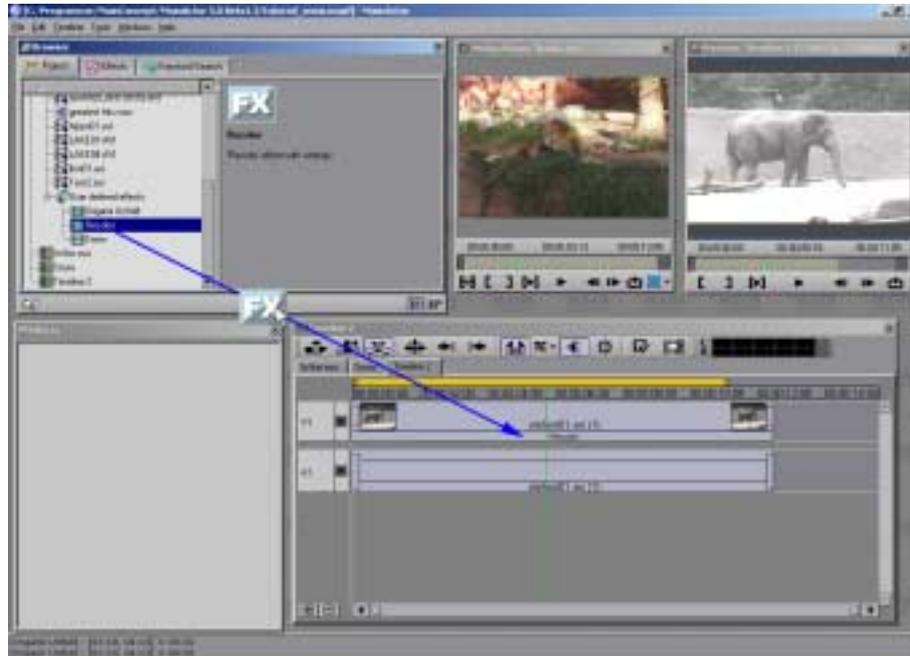
Filters and Effects

In the following paragraph we will introduce the filters as well as effects of MainActor v5 and explain their settings in detail. We also present you a brief example for several effects so you become familiar with their parameters. You can edit the settings of the filters and effects by double-clicking them so that their settings are copied to the **Effects** window.

Under **Filters** you find several subfolders which contain both effects and filters you can apply to your projects.

2D Warp

Glue:

When you use the **Glue** effect your clip looks like it is pulled apart like glue, i.e. the picture is distorted and smeared.
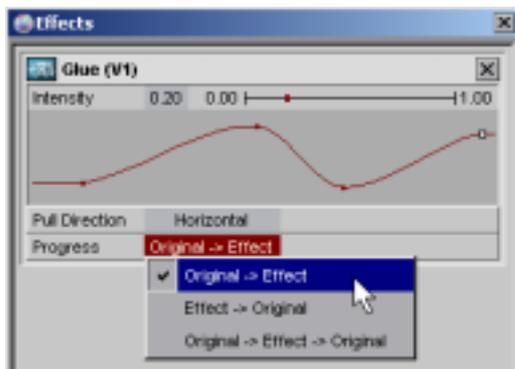
You can adjust several parameters for the effect:

Under **Intensity** you set the intensity the picture will be distorted. The value can be entered manually, by using the slider or by defining new keys in a polydiagram. The latter allows you to change the effect over time.

Pull Direction allows you to specify the direction the picture will be smeared. The options **Horizontal**, **Vertical** and **Both** are available here.

Under **Pull progress** you set the correct order you want the effect to be applied to a clip. **Original > Effect** means that the original clip smoothly turns into a glue-like picture. **Effect > Original** is the reverse. When you activate setting **Original > Effect > Original** the clips starts in its original shape, turns smoothly into a distorted picture and back again to its original shape.

Ripple:

The Ripple effect turns your clips into a kind of wave as if someone has thrown a stone into water, and the waves are heading from the center towards the shoreline.

The effect's parameters dialog box offers the following settings:

When you press **Intensity** a polydiagram appears where you can create new keys in order to change the waves' intensity over time. It is also possible to enter a constant value for the intensity by clicking the box next to the parameter's name. In the appearing window you can edit the value for the intensity manually. A further alternative is to move the option's slider to the desired value.
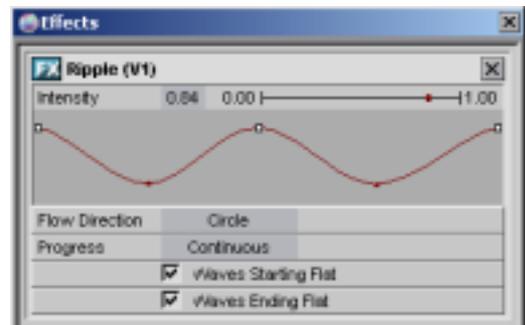
Flow Direction enables you to specify the direction of the waves starting from the center of the picture. The settings **Circle**, **Horizontal** and **Vertical** are available here.

The option **Progress** offers two parameters: **Continuous** and **Natural**. When you choose **Continuous** the waves appear in the whole picture at once. In contrast, when you select **Natural** the waves start in the middle of the picture and they are slowly getting bigger and bigger, and they also slowly disappear out of it (like real waves).

The two checkboxes **Waves starting flat** and **Waves ending flat** are self-explanatory.

Swirl:

The **Swirl** effect distorts your clip like a whirlpool.

It offers the following options:

Under **Intensity** you adjust the swirl's strength. When you press this term a polydiagram appears where you can create new keys in order to change the whirlpool's intensity over time. It is also possible to enter a constant value here by clicking the box next to the parameter's name. In the appearing window you can edit the value for the intensity manually. A further alternative is to move the option's slider to the desired value.

With the two sliders under **Focus X** and **Focus Y** you can define the center of the whirlpool on the screen. You can also enter the values for these settings manually as described above.

In the polydiagrams for these two options you can change the focus over time so that the swirl moves over the screen like a kind of hurricane.

Swirl Direction enables you to adjust in which direction the whirlpool will flow: **Left** or **Right**.

The option **Progress** offers three parameters: **Original > Effect, Effect > Original** and **Original > Effect > Original**. **Original > Effect** means that the original clip smoothly turns into swirl. **Effect > Original** is the reverse. When you activate setting **Original > Effect > Original** the clips starts in its original shape, turns smoothly into a distorted picture, i.e. a whirlpool, and back again to its original shape.


3D Warp

Deflate:

The **Deflate** effect looks like as if the picture contracts in the middle of the screen.

This effect offers only two options:

Intensity defines the strength of the deflation. You enter the value manually or change it in the polydiagram over time.

The drop-down menu under **Progress** offers three options: **Forward**, **Backward** and **Cycle**. When you select **Forward**, the contraction starts at the top and bottom of the screen; when you choose **Backward** the deflation begins in the middle of the picture. **Cycle** starts the effect and resets to the original clip again later.
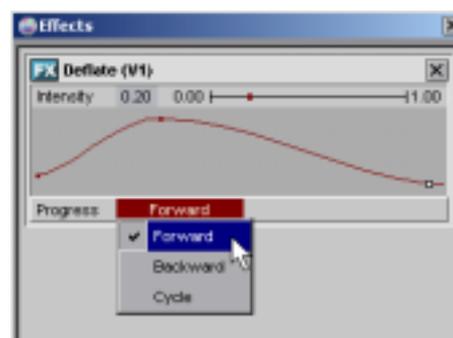
Inflate:

The **Inflate** effect looks like as if the picture is expanded in the middle of the screen.
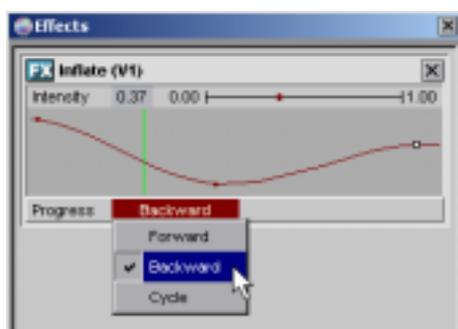
This effect offers also two options:

Intensity defines the strength of the inflation. You enter the value manually or change it in the polydiagram over time.

The drop-down menu under **Progress** offers three options: **Forward**, **Backward** and **Cycle**. When you select **Forward**, the expansion starts at the top and

bottom of the screen; when you choose **Backward** the inflation begins in the center of the picture. **Cycle** starts the effect and resets to the original clip again later.

Color

Recolor:

This module is an advanced color correction tool. Imagine you have a great clip or a nice picture but somehow the colors are too pale or do not come out as they should. Maybe the light is too dim or everything looks a bit hazy. You can use the **Recolor** filter for enhancing or refresh the colors of a clip in the Timeline. You can apply it for adapting consecutive scenes. Or you can produce some interesting effects by changing the color over time as well as colorize the clip in an unusual way.

The **Recolor** effect is very complex with many different settings. We recommend playing around with the polydiagrams and their parameters until you achieve the desired results. You cannot give clearly defined guidelines for the filter settings here. The parameters depend on your source material, and that is always different from each other.

The **Recolor** filter offers the following settings:

In the **Equalize Group** mode you can adjust the **R** (Red), **G** (Green), **B** (Blue) and **A** (Alpha) components individually. The option is not visible when you copy the **Recolor** settings to the **Effects** window. Press the box **Equalize Group** to open them. Now you can edit the individual channels. As shown in the previous paragraphs, you can enter the values manually as well as by using the slider. In the polydiagrams you have the opportunity to define new keys to influence the different channels. You can toggle the **Equalize Group's** settings on/off by using the **On** checkbox. This can be useful when you work with other modes in this menu and want to edit the different parameters separately.
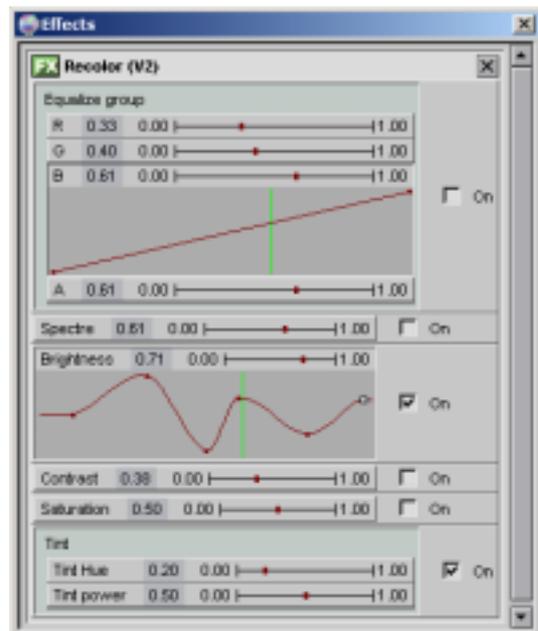
In the middle you find some general settings for color correction: **Spectre**, **Brightness**, **Contrast** and **Saturation**. You can activate the individual parameters by clicking the **On** checkbox. You can also change the option's parameters over time in corresponding polydiagrams.

At the bottom you have access to the **Tint** mode for changing the color of the picture. It contains two parameters: **Tint Hue** and **Tint Power**.

Tutorial - Recolor:

In this tutorial we want to show you how to freshen up your videos. Sometimes the colors and image properties of a video have not the quality you want them to have. Maybe there was a dim light or it was a bit hazy the day you made the picture or film. With the **Recolor** effect you are able to refresh and enhance their colors to a certain degree.

1. Before we start with the actual project, add the clip you want to freshen up to the clipboard. We have already explained this in previous chapters. Press the small ⬆ icon in the **Project** Browser, and follow the instructions on the screen.

    After you have added the desired clip to a folder in the clipboard, drag it from the Browser into track **V1** of the **Timeline** window. You see the first frame of the clip in the **Preview** window.
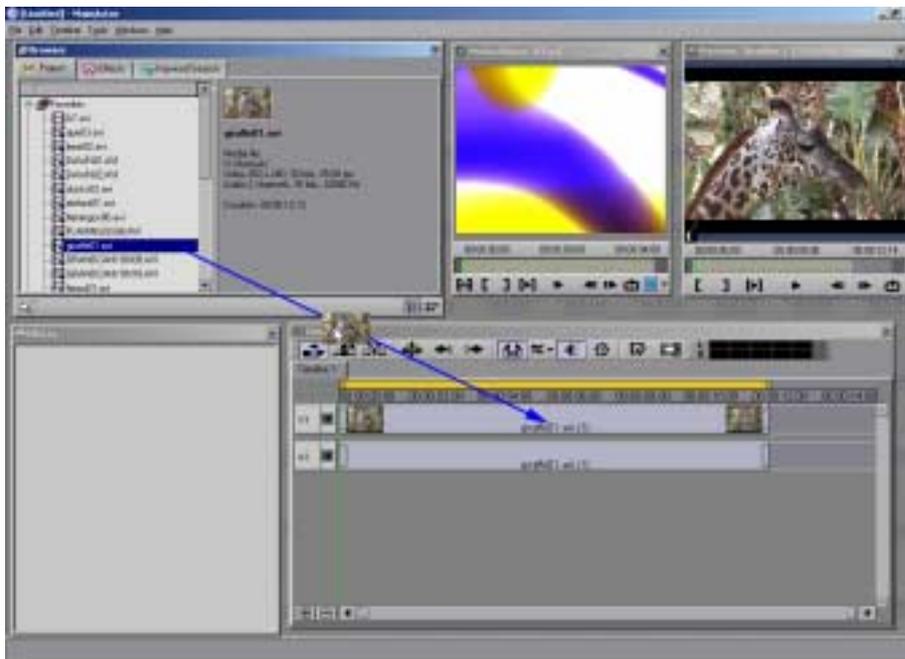
2. We will apply the **Recolor** effect to the clip in a moment. For that reason, switch to the **Effects** pane, and open the **Filters** folder. Under **Color** you select the **Recolor** effect, and place it directly on the clip in **V1**, because we want to use the effect for the whole clip.
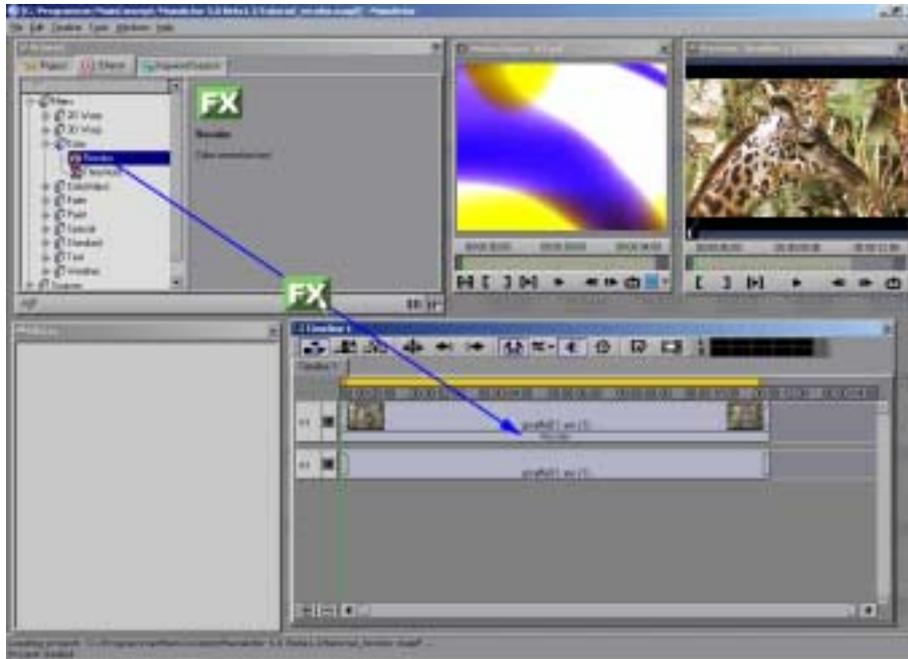
3. Now we want to freshen up the colors of the clip. Therefore, we double-click the **Recolor** effect in **V1**, so that its parameters are copied to the **Effects** window.

We have already explained the functions of the individual parameters before, so we recommend playing around with the polydiagrams and their settings until you achieve the desired results. You cannot give clearly defined guidelines for the project settings here. The parameters depend on your source material, and that is always different from each other.

After changing the **Recolor** settings for our clip, the parameters in the **Effects** window looked like this:
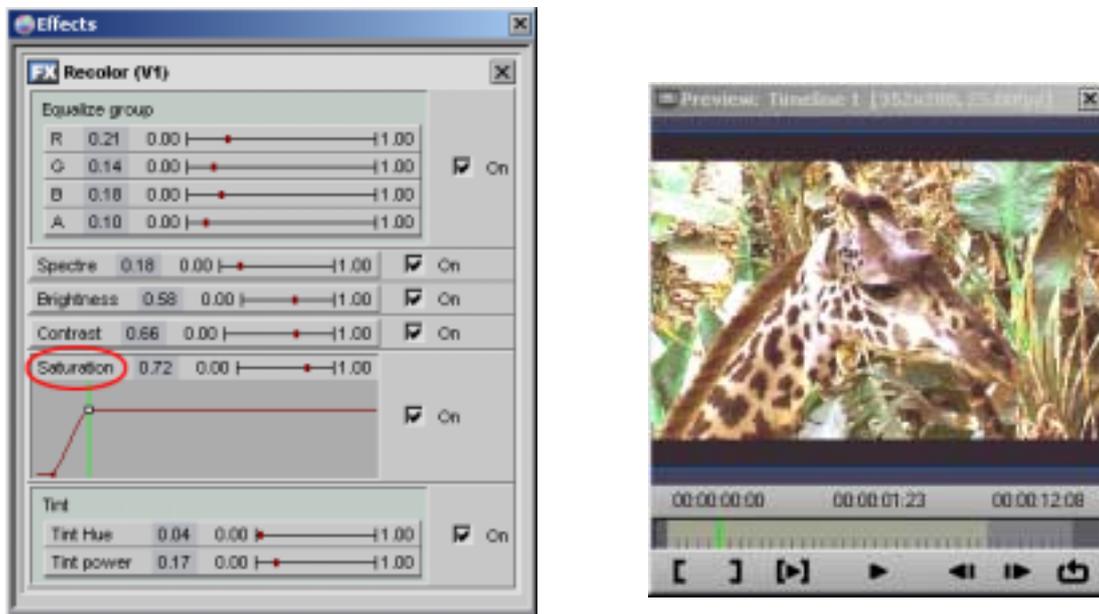

As you can see in the screenshot above, we generated an additional key for the **Saturation** option. We turned the line into a curve. The result is, that the clips starts in black and white, and then suddenly the refreshed colors appear in the clip.

4. With a little practice you can achieve impressive results in your video clips and pictures by using this effect for color correction. Devote some time and patience for getting acquainted with the particular parameters. And soon your videos will appear in a different light...!

Threshold:

This effect sets animated thresholds for each color channel (R, G and B), i.e. it generates thresholds for each channel. It is useful for high-contrasting colored images.
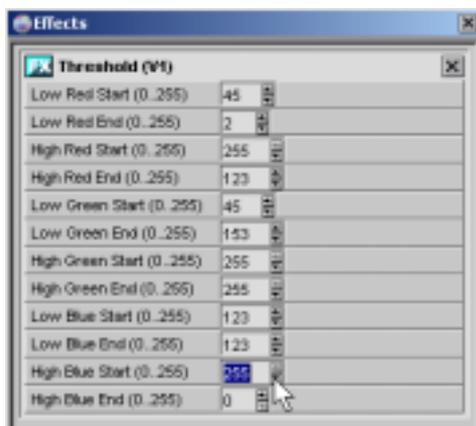

Every channel (Red, Green and Blue) offers a starting as well as an end value for its **Low and High threshold**. You can specify each of these parameters individually. The value range for the different parameters is 0 ... 255. You reach the next option by pressing the *Tab*-key. You can use the small controls on the right to change the value for the effect or enter the new value manually.

Color Adjust

Brightness & Contrast:

This option enables you to adjust brightness and contrast of a video clip or still image.
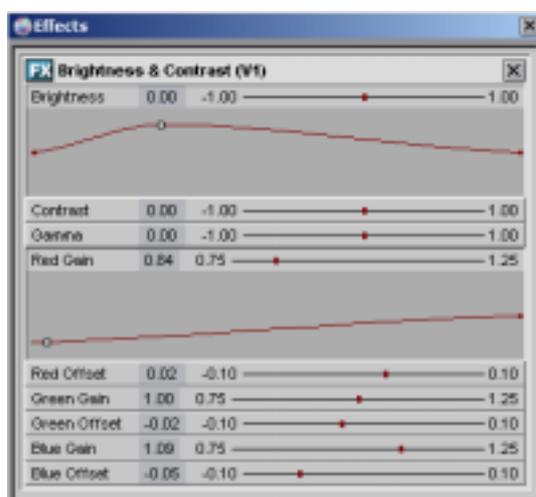
The option **Brightness** is self-explanatory. Use the slider for changing the value or enter it manually by clicking the value box. It is even possible to generate keys so that you can change the brightness of the picture over time.

The parameter **Contrast** is self-explanatory, too. You have the same setting options as mentioned under **Brightness**.

The option **Gamma** enables you to measure the brightness of midtone values produced by a device. This is often a computer monitor. You have the same setting options here as mentioned earlier in this paragraph.

The **Red Gain, Green Gain** and **Blue Gain** settings enable you to set the gain for the R, G and B channels. You can enter a constant value or change them over time.

The **Red Offset, Green Offset** and **Blue Offset** settings enable you to adjust the offset for the R, G and B channels. You can enter a constant value or change them over time.

Colorize:

The **Colorize** filter lets you influence the different RGB channels. It is useful to enhance the colors of a clip, or to adapt the colors for consecutive scenes.

The option **Red** enables you to change the settings for the corresponding channel.

**Green** adjusts the parameters for the blue channel over time.

Blue changes the spectre for the blue channel.

Use the slider or press the value box to change the parameters. You can also add new keys in the polydiagram to generate a curve and change the color over time.
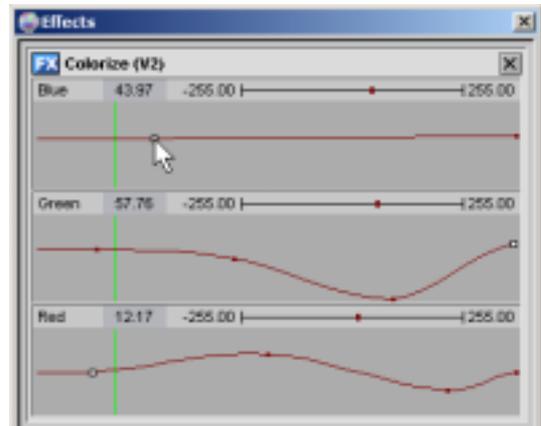
XOR Color:

This effect is a color effect which is based on the Boole's XOR operation.
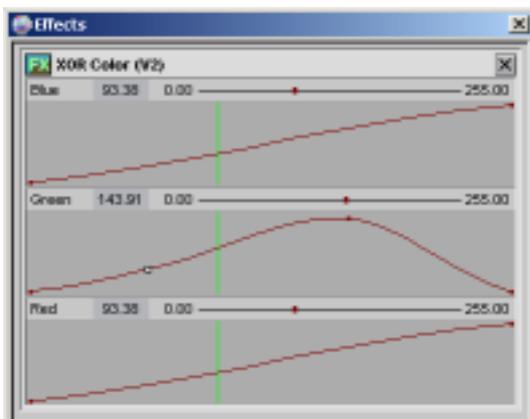
You can adjust the parameters for the R, G and B channels. You have the opportunity to change the settings for **Red**, **Green** and **Blue** over time by generating new keys.

Fade

Chaotic Fade:

This filter fades the clip against a user-defined color.
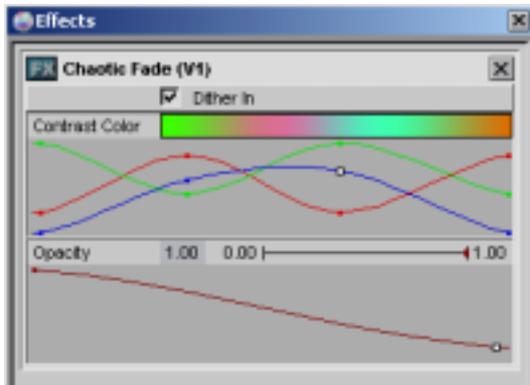
If the checkbox under **Dither in** is selected the clip slowly appears. If this option is disabled, the clip is faded out and the chosen color appears.

Contrast Color enables you to select a color for the dither effect. Simply click the box and choose a color in the appearing dialog box. It is possible to change the color over time by defining new keys in a polydiagram.

The option **Opacity** specifies the transparency of the contrast color. The higher the value the more you see of the color. It is even possible to change the value for the opacity over time.

Dither:

This effect dithers the clip against a specified color.

If the checkbox under **Dither in** is ticked the clip slowly appears. If this option is disabled, the clip is faded out so that the chosen color appears.

Contrast Color enables you to select a color for the dither effect. Simply click the box and choose a color in the appearing dialog box. It is possible to change the color over time by defining new keys in a polydiagram.

The option **Opacity** specifies the transparency of the contrast color. The higher the value the more you can see of the color. It is even possible to change the value for the opacity over time.
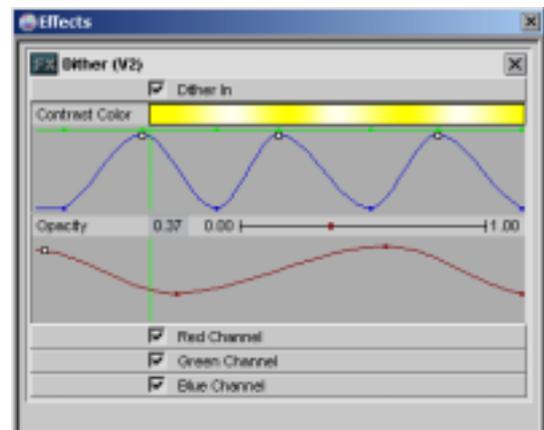
The checkboxes under **Red Channel**, **Green Channel** and **Blue Channel** allow you to enable and disable the individual R, G and B channels.

Fade:

This effect fades a video clip against a particular color.
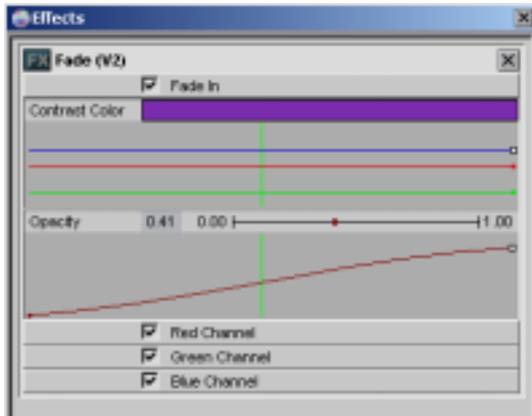
If the checkbox under **Fade in** is activated the clip slowly appears. If this option is disabled, the clip is faded out and the chosen color becomes visible.

Contrast Color enables you to select a color for the fade in effect. Simply click the box and choose a color in the appearing dialog box. It is possible to change the color over time by generating new keys in a polydiagram.

The option **Opacity** specifies the transparency of the contrast color. The higher the value the more you can see of the fading color. It is even possible to change the value for the opacity over time.

The checkboxes under **Red Channel**, **Green Channel** and **Blue Channel** allow you to enable and disable the individual R, G and B channels.

Random Fade:

This effect dithers the clip randomly against a specified color.

If the checkbox under **Dither in** is ticked the clip appears. If this option is disabled, the video is faded out so that the chosen color slowly appears.

Contrast Color enables you to select a color for the random dither effect. It is possible to change the color over time by defining new keys in a polydiagram or you select a single color by clicking the color bar, and choosing a color in the appearing dialog box.
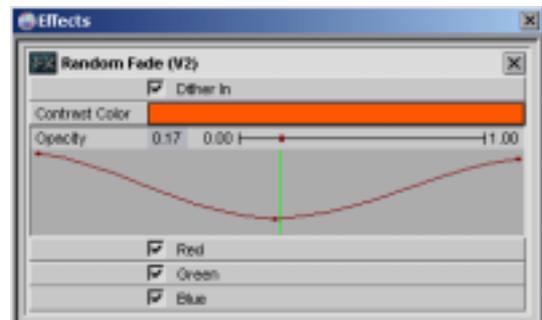
The option **Opacity** specifies the transparency of the contrast color. The higher the value the more you can see of the randomly dithering color. It is even possible to change the value for the opacity over time.

The checkboxes under **Red Channel**, **Green Channel** and **Blue Channel** allow you to enable and disable the individual R, G and B channels.

Paint

News Print:

When you use this effect lets your clip looks like an image which is printed in an newspaper. It adds a very coarse-grained resolution in black and white to your clips.
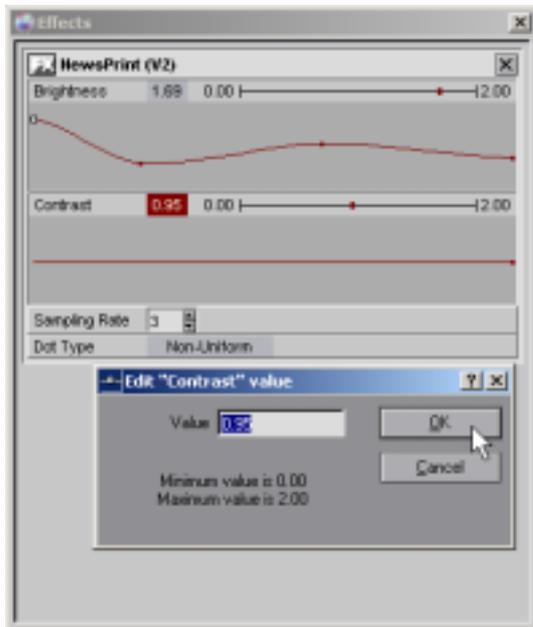
Brightness and **Contrast** are self-explanatory. As shown in the previous paragraphs, you can enter the values manually as well as by using the slider. The screenshot on the left shows a window where you can enter the value for **Contrast** manually. In the polydiagrams you have the opportunity to define new keys in order to change the parameters over time.

The option **Sampling Rate** enables you to adjust the resolution for the effect. It defines how many black pixels occur in one line. The range is 0 ... 100 here.

Dot Type offers two different parameters: **Uniform** and **Non-Uniform**. It refers to the appearance and the distribution of the dots which alienate the image.

Oil Paint:

By applying this effect your clip looks like an oil painting.

The **Oil Paint** effect offers only one setting: You can change the **Intensity** of the effect. The result is that the picture looks like it is painted in oil. To sum it up, the effect paints the picture with a thick brush. The effect can be changed over time as well.
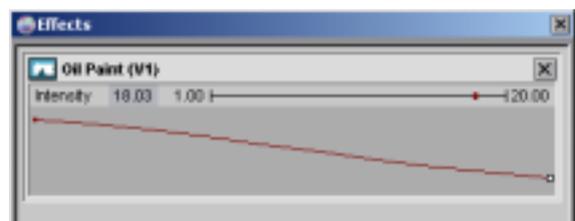
Roman Mosaic:

This effect converts a clip into an animated roman mosaic or tile pattern. The pattern's lines are distorted during playback.
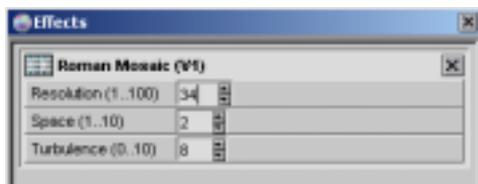
Under **Resolution** you define the grid's resolution, i.e. of how many tiles the picture is made of. The range is 1 ... 100, although a value larger than 25 is useless because it only gives an idea of the original clip.

The option **Space** enables you to define the width of the pattern's lines. The value's range is 1 ... 10.

Turbulence allows you to animate the roman mosaic. By adjusting this option you can influence the speed of the movement. The range is 0 ... 10 here.

Special

Aged Film:

This effect turns your clip into an old film with lots of spots as well as in black and white color.

Under **Amount of Particles** you define the num- ber of spots and fluff which will appear in the clip. The result is that it looks like an old spool of film which is played back by an old film projector.


The option **Size of Particles** lets you specify the size of the different spots and fluff.

You can change the settings by using the slider or define new keys in the polydiagram.
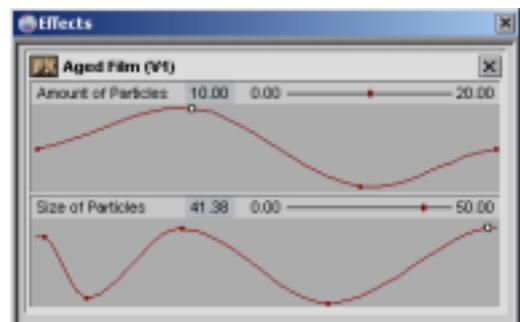
Flip:

This effect simply flips the picture so that it is the wrong way around or upside down.
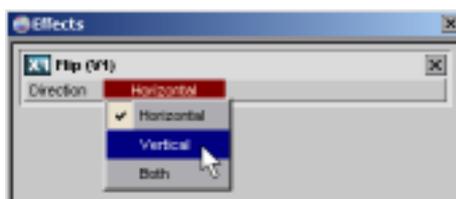
In the drop-down menu under **Direction** you find three options. **Horizontal** mixes up left and right in the clip; **Vertical** turns the clip upside down. **Both** combines the previously mentioned options.

Frame:

This effect puts an animated frame around your clip.

Appearance specifies the visible area of your clip. The higher the value, the less you see the original clip, i.e. the frame gets larger. You can use the slider to change the value or enter it manually. It is also possible to generate new keys, and turn the line into a curve in order to animate the frame.

Under **First Color** and **Second Color** you select two frame colors. To produce a single colored frame, you have to adjust two equal colors. When you want to choose different colors or change the color over time here, repeat the steps mentioned earlier.

Under **Variation** you select a different frame type. The value range is 1 ... 5000.
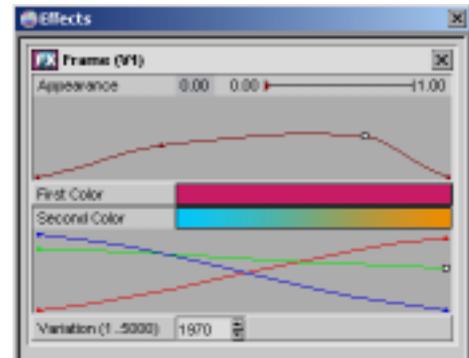
Incognito:

This effect enables you to make certain areas in your clips unrecognizable. You can define the area and its size where the **Incognito** effect will be applied to. The effect is useful for disguising people's faces in a film.
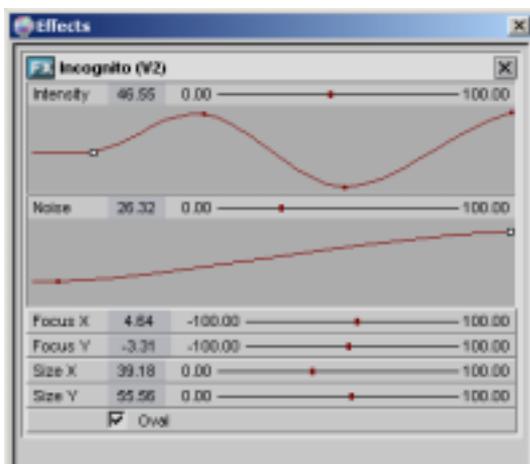
The option **Intensity** enables you to adjust the size of the individual pixel. The more you extend the value the more you enlarge the size of the pixels, i.e. you reduce the resolution of the specified area.

Under **Noise** you can add an animated noise to the effect area. This parameter generates a random pixel color for the specified area.

The parameters **Focus X** and **Focus Y** allow you to specify the exact position of the effect area on the x- and y-axis. You can change the values with the slider or change the position over time by creating new keys in the polydiagram. The latter option enables you to follow objects you want to disguise.

Under **Size X** and **Size Y** you define width and height of the effect area. It is also possible to change the area's size over time by defining new keys and generating a curve.

Activating the **Oval** checkbox enables you to change the general shape from rectangular to oval.

Tutorial - Incognito:

You know this effect for sure when you often watch TV. Sometimes there are television programs which present people whose faces are made unrecognizable. With the **Incognito** effect you can hide the faces or something else in a clip by maximizing the pixel size many times over. You are able to distort them at a user-defined position and with a user-defined size, so that you cannot identify the person anymore.

1. We assume that you have already added the necessary source clip to a clipboard or folder in the **Project** pane. Then drag the video from the **Project** Browser directly into track **V1** in the **Timeline** window.

2. Generate a second track (**V2**), because we do not want the effect to last the whole clip time. Move the cursor into the **Timeline** window, and press the right mouse-button. Choose the **Add video track** option in the appearing window, so that a new video track is added to your project.

3. Now we will add the **Incognito** effect to our project. Switch to the **Effects** pane, and open the **Filters** folder. Under **Special** choose the **Incognito** effect, and drag it from the Browser directly into track **V2** in the **Timeline** window.
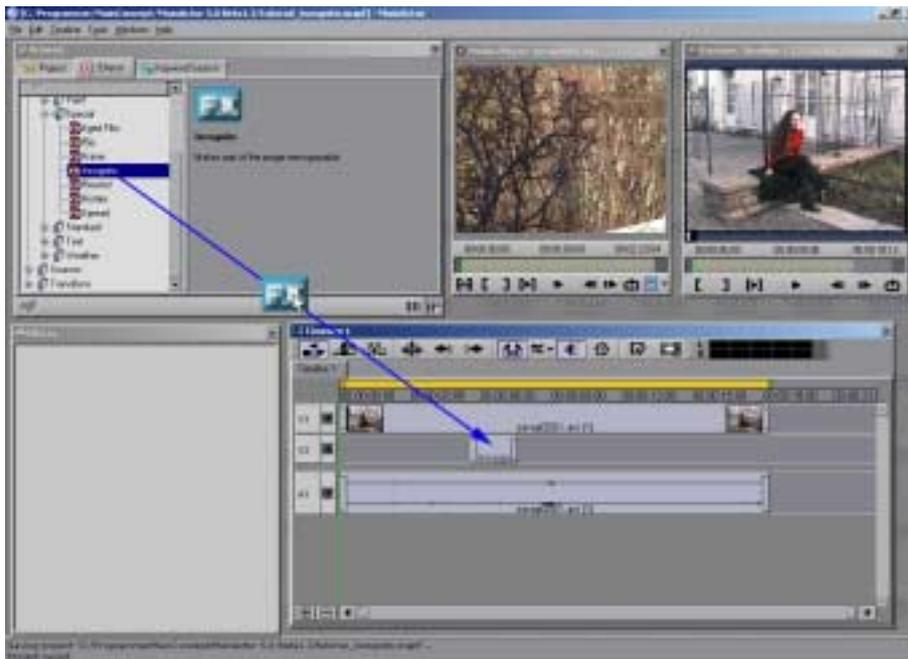
4. As you can see, the **Incognito** effect has not the desired duration in **V2**. For that reason, we have to extend it. Click the lever at the end of the effect, and drag it to the desired length while holding the mouse-button, i.e. you have to drag it to the position, where you want the face's distortion to end. If necessary, you can move the complete **Incognito** effect in **V2**. Simply select the effect so that it is highlighted, and move it to the exact start or end point while holding the mouse-button.
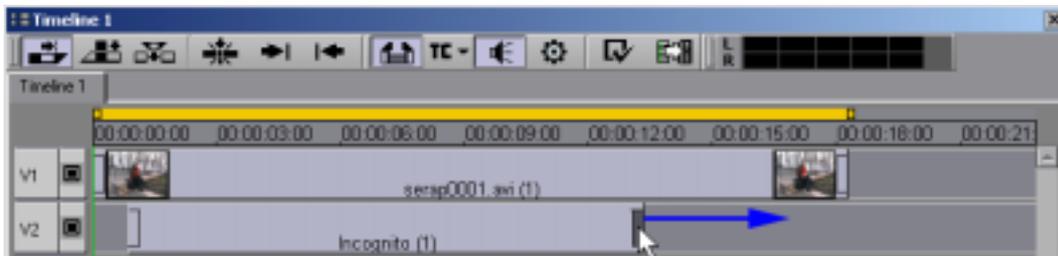
5. The **Incognito** effect has finally the correct length, and we can edit it for our clip now. Therefore, double-click the effect, so that its settings are copied to the **Effects** window. First of all, move the green slider, which indicates the current position in your project, to the first frame where the **Incognito** effect is applied to the clip.

At first, you should decide, whether the distorted area will be shaped as an oval or a rectangle. If the checkbox **Oval** is ticked, this area is shaped, of course, as an oval. For our tutorial, we activated the checkbox.

We recommend editing the parameters for **Focus X/Focus Y** and the **Size X/Size Y** at first. **Focus X/Focus Y** specifies the exact position of the distorted area on the screen. You can change it over time by defining new keys in the corresponding polydiagram. The result is that you can create a path, the **Incognito** effect will follow while a person walks through the clip. **Size X/Size Y** defines the size of the shape for hiding the person. It is possible to customize the size of the distorted area, so you can hide smaller as well as larger objects in your clips.

We slightly changed the size of the individual pixels by using the slider under **Intensity**.

We also added some animated **Noise** to the effect area. This option generates a random pixel color for the specified area.

After changing the parameters, the **Incognito** effect settings and the **Preview** for our project looked as shown in the screenshot below:
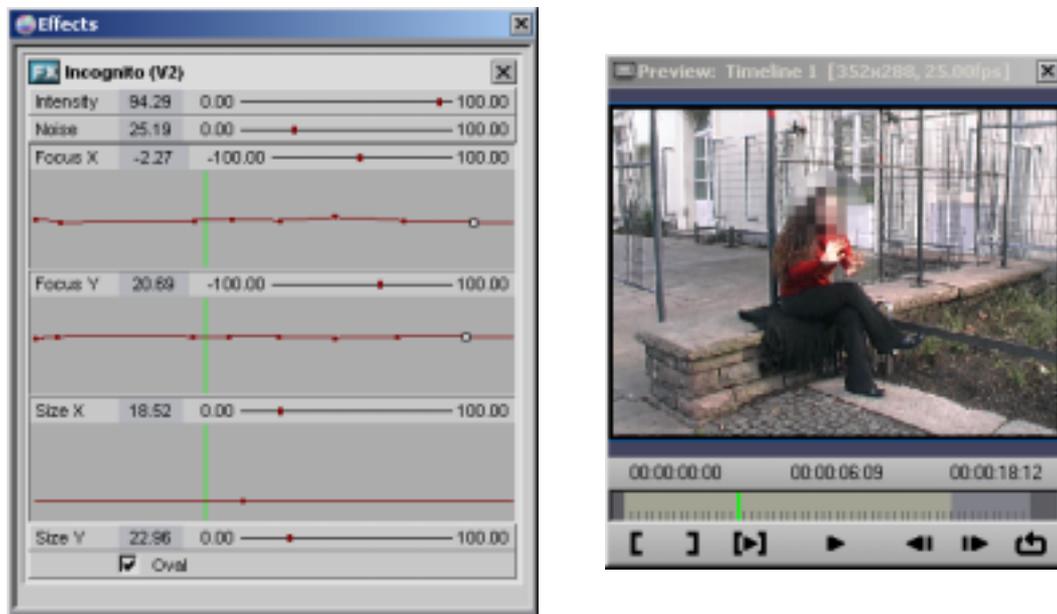
6. Congratulations! You have applied the **Incognito** effect successfully. Maybe you try to hide another object next time.

Perspective:

This option allows you to create 3D clip effects, picture-in-the-picture effects or use it in combination with titles. You can create paths with the **Perspective** effect, the clip will follow. It is very complex but we will explain you the different settings in a moment.

When you click **Position** three different options appear which enable you to define the clips position on the **X**-, **Y**- and **Z**-axis. You can enter a constant value for every parameter or change them over time in different polydiagrams. The latter allows you to create a path the clip will follow.

When you click **Rotation** three different parameters appear: **RX**, **RY** and **RZ**. **RX** rotates the clip on the x-axis, **RY** on the y-axis, and **RZ** on the z-axis. Use the dialer to set the value or create new keys in a polydiagram.

Scale offers two options: **SX** and **SY**. **SX** defines the size of the picture on the x-axis, and **SY** on the y-axis. Use the slider to define the value or open the polydiagram in order to create new keys so that the size is changed over time.

Pivot offers two options as well: **PX** and **PY**. It defines the axis for rotation. **PX** defines the pivot on the x-axis, and **PY** on the y-axis. Use the slider to define the value or open the polydiagram in order to create new keys in a polydiagram so that the pivot is changed over time.

The option **FOV** (= Field over time) defines the angle of the picture as seen from the spectator's position. Use the slider to specify a constant value or create new keys in the corresponding polydiagram in order to animate the picture.

The **Opacity** option is self-explanatory. It has the same function as in other effects.

The drop-down menu **Filtering** offers three different options for applying to the effect: **No image filtering**, **2x2 smoothing (fast)**, and **Maximal smoothing (slow)**. The parameters allow you to increase the quality of the picture by using pixel anti-aliasing.

The last option is **Composing**. The corresponding drop-down menu offers several parameters for working with a clip: **Opaque, Alpha, Intensity, R, G** and **B**.
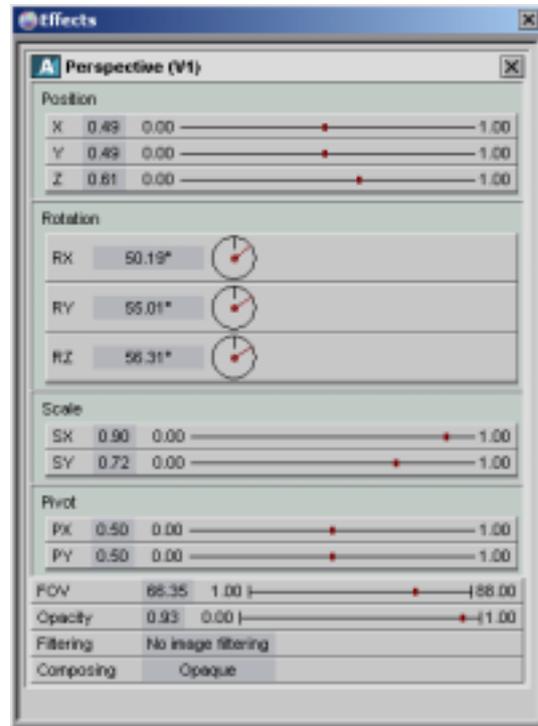
Tutorial - Perspective:

The **Perspective** effect enables you to generate 2D and 3D motion paths for your clips, to rotate them and even to create picture-within-the-picture effects. In this tutorial we want to introduce the **Perspective** effect with its numerous parameters, so that you have even more fun editing your videos in the future. But this is enough for now, let's start...!

1. We assume that you have already imported all clips you want to use in this project, and added them to a bin and/or folder in the **Project** pane of the Browser. We showed you how to do this in previous examples.

2. Drag the first clip from the **Project** pane right to the beginning of track **V1** in the **Timeline** window. Afterwards, click the **Effects** tab in the Browser, because we want to use **Perspective** effect for the whole clip. Open the **Filters** as well as the **Special** folder. Choose the **Perspective** effect, and place it on the video in **V1** while holding the mouse-button, as shown in the screenshot below.
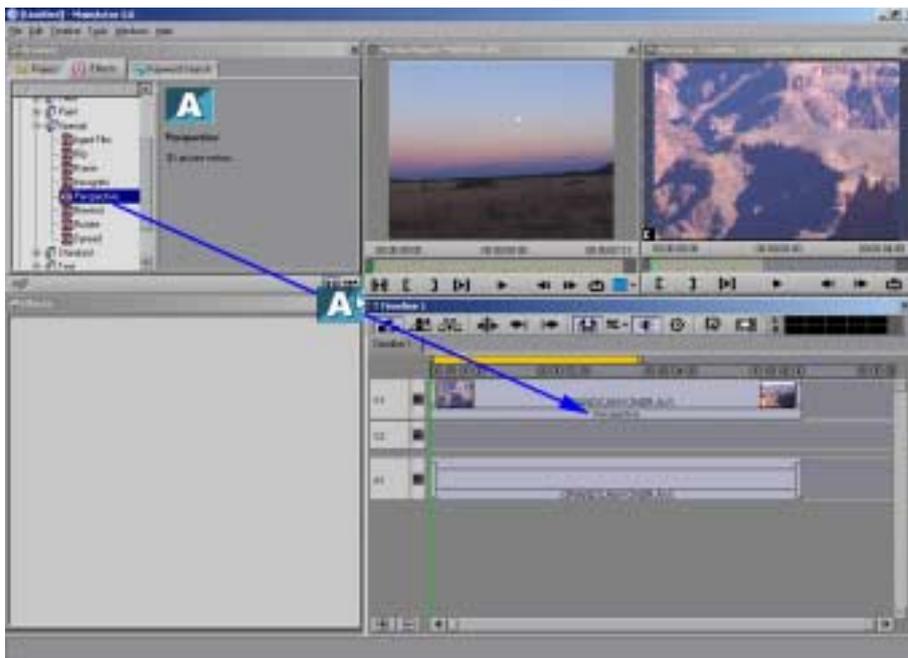
3. At the beginning of the project several clips shall move across the screen all over the place. Therefore, we have to generate different 2D motion paths with the **Perspective** effect for every video. Double-click the **Perspective** effect in **V1**, so that its settings are copied into the **Effects** window.
At first, you have to specify the size of the first clip, because there will be several clips on the screen simultaneously later on. And, of course, you should see all of them.

Open the **Perspective** effect's **Scale** settings by clicking them. **SX** defines the width of the clip, and **SY** its height. Use the sliders under **SX** and **SY** to specify the desired size of your video.
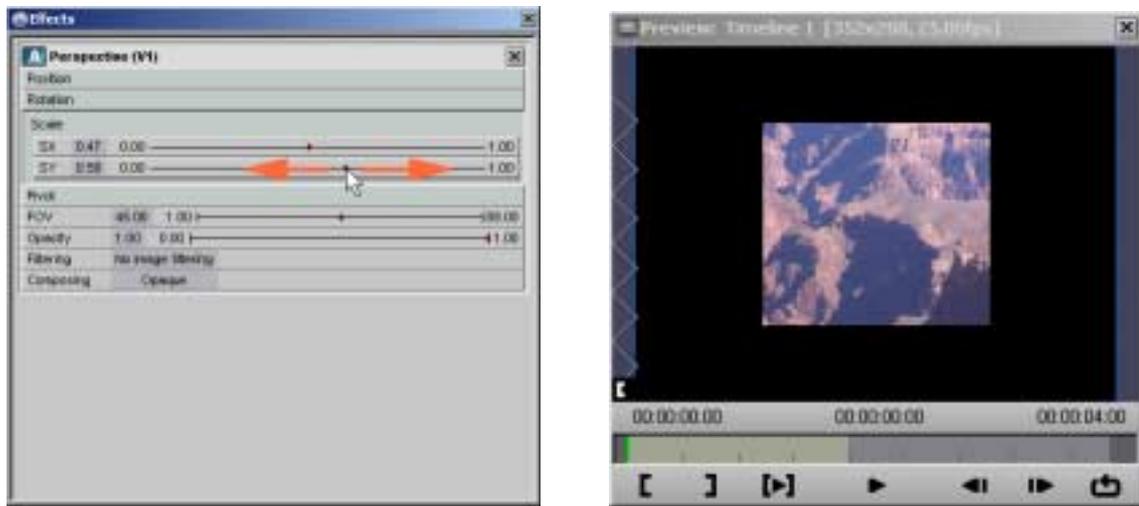
4. Now we create a path, the minimized clip will follow later on. Click the **Position** option, so that the parameters for axes **X**, **Y** and **Z** become visible. At first, open the polydiagram for the x-axis by clicking the **X** letter under **Position**. Generate new keys in the polydiagram by clicking on the red line while holding the *Shift*-key. Repeat these steps to create more keys. After you have generated enough keys, select one key or several keys, and shift them upwards or downwards. You can watch the results in the **Preview** window when you move the green slider in this window or in the **Time-line** to the left or right. In a polydiagram you can move the green slider while holding the *Alt*-key. Select and shift other keys until you have generated the desired path.

Afterwards, open the polydiagram for the y-axis (**Y**). Add new keys here as well, and shift them, in order to create a corresponding path. This is also valid for the final parameter under **Position** for shifting the clip on the z-axis (**Z**). Adjusting this option moves the video in space. In our example we haven't generated any additional keys, and left the parameters at their constant default settings.
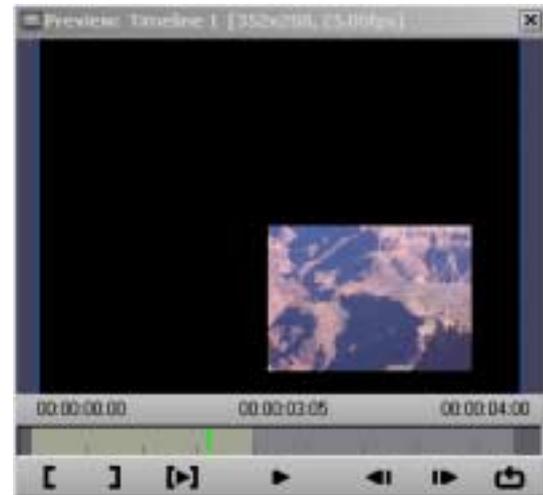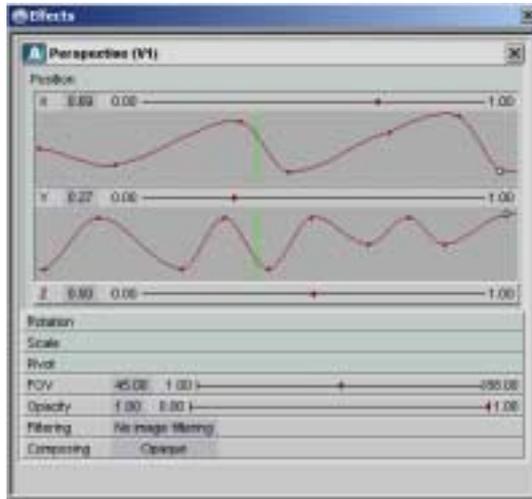
We recommend playing around with the settings and motion paths until you achieve the preferred results. There are so many different possibilities for creating motion paths, so that explaining only some of them would go beyond the scope of this tutorial. For that reason, here the motto is: Learning by doing!

Have a look at your project up to now. Make sure that the green slider in the **Preview** window is at the project's front position, and press the **Playback** button.

5. As we have mentioned at the beginning of this tutorial, we want several clips to move over the screen. But the second video will start a bit later. Therefore, drag it from the **Projects** pane of the Browser into **V2** in the Timeline slightly behind the starting point of the clip in **V1**.
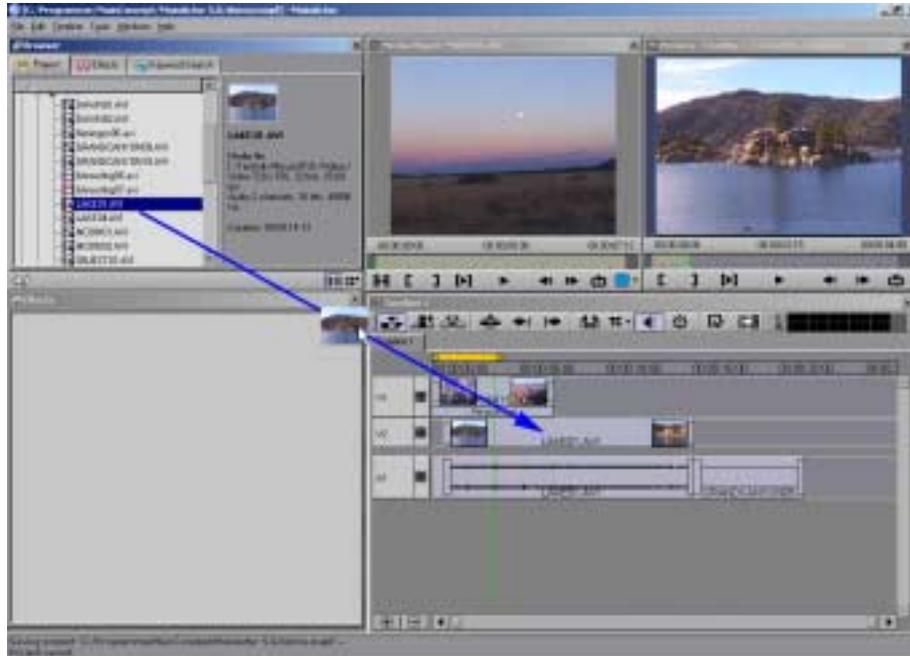
6. Afterwards, place the **Perspective** effect onto the clip in **V2**. Then repeat the steps mentioned in paragraph 2.

7. Double-click the **Perspective** clip in **V2**, so that its settings are copied into the **Effects** window. Now you can start with the actual editing process. At first, adjust clips' size, as shown earlier in this tutorial. As you can see, after minimizing the clip in **V2**, the one in **V1** becomes visible.
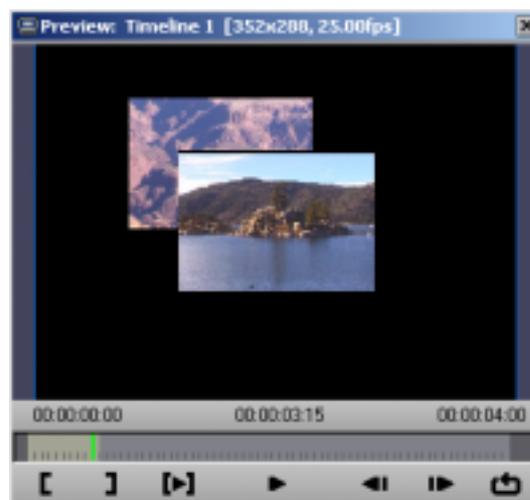
8. Under **Position** generate a path, the clip will follow later on. We have already explained how to do this. Simply use the keys in the polydiagrams to create a different path, so that the second video moves over the screen, e.g. in the opposite direction.

9. If you like to edit more clips in the same way, you have to generate additional video tracks at first. Move the cursor into the **Timeline** window and press the right mouse-button. Choose **Add video track** from the appearing list. Repeat the above mentioned steps to add more videos and create motion paths for them. After editing four clips containing the **Perspective** effect our project looked as follows:

10. We add another clip to our project now, because we will create a 3D motion path for it in a minute. Place the video in the **Timeline** window where you want it to appear. As you can see in the screenshot below, you can drag-and-drop the clip by using its thumbnail in the **Project** pane. Drag the thumbnail from the Browser directly in track **V1**.


After you have added the clip to the Timeline, place the **Perspective** effect on the new clip in **V1**, as shown earlier in this tutorial.

11. Double-click the **Perspective** clip, so that its settings are copied into the **Effects** window. First of all, set the size of the video, and press the **Scale** option in order to open the corresponding controls. Use the slider **SX** and **SY** to specify the width and height of the clip in **V1**. We have already explained the necessary steps in previous paragraphs of this tutorial.

12. We want to create a 3D motion path for our clip now. Click the **Position** option to make the necessary controls visible. Then open the polydiagrams for the x-, y- and z-axis (**X**, **Y** and **Z**). Generate new keys in the desired polydiagrams, and turn the lines into curves to specify a motion path for the video. The new aspect here is that we create a path on the z-axis, too, so that the clip will move in space as well.

We don't want the clip to appear on the screen suddenly, so we changed the parameter for another option as well. Under **FOV** you specify the distance of the image from the spectator's viewpoint. Generate another key in the corresponding polydiagram. Using this key we have created a constantly rising line. The result is that the

video moves towards the audience. At the same time, it is getting bigger and bigger until it achieves the previously defined size. Unfortunately, in the screenshot you cannot see what the actual animation looks like. But the settings and the **Preview** window looked like this:


13. Now we add an additional clip which will rotate later on. Add another video to **V2** and place the **Perspective** effect on it, as you have already done before several times. Make sure that the new clip in **V2** slightly overlaps with the one in **V1**, so that the collage-like impression of the film is preserved.

14. Copy the **Perspective** settings in the **Effects** window by double-clicking the clip. We want the video, which is coming from the background, to move towards the audience until it has automatically reached its previously defined size. During the animation the clip will also rotate around its own axis.

   First of all, adjust the width and height of the clip by using the two sliders under **Scale**. Then define another key in the **FOV** polydiagram, and create a similar curve, as the one already described in paragraph 12. If necessary, generate a steeper curve, so that the video achieves its full size even faster.

15. We return to the previous video for a while, and you will see why we are doing this in a moment. When you play back the project in the **Preview** window you will see, that the clips suddenly disappear from the screen. That doesn't look very good! For that reason, we want to fade out the preceding video. Open the **Perspective** settings for the second clip in **V1** and its **Opacity** option. Move the green slider, which shows the current position in the project, to the end of the clip. Generate a new key at the green line's and polydiagram line's point of intersection, by clicking the desired position while holding the *Shift*-key. Select the key, and pull it downwards, so that the video is slowly faded out. Repeat these steps for the rest of the **Perspective** effects in your project.
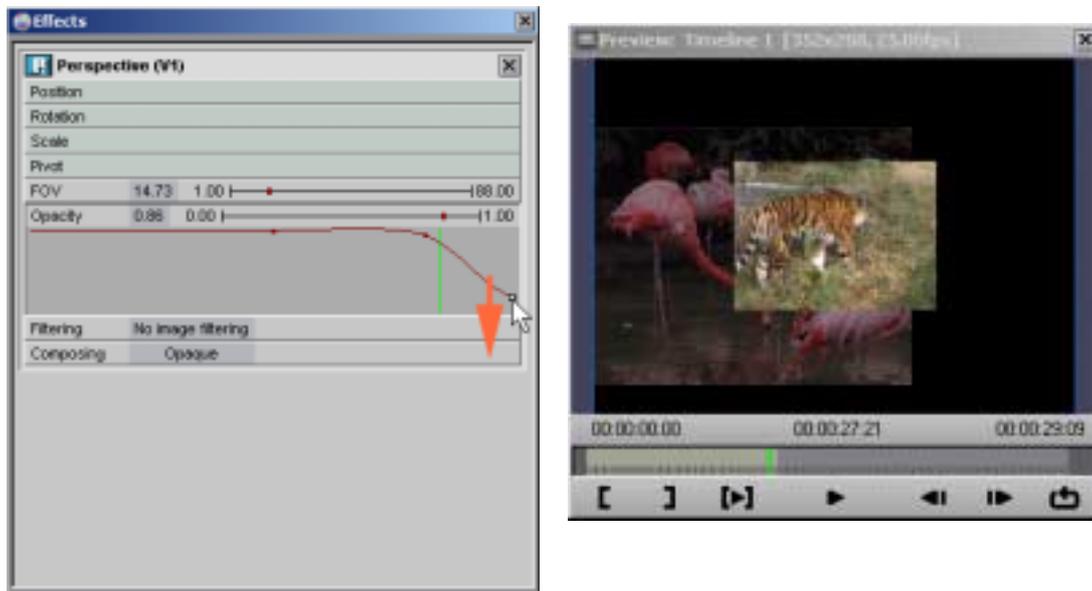

After you have edited the **Opacity** option(s), close the settings for the **Perspective** effect(s) by clicking the small **x** in its (their) header.

16. We return to the next clip in **V2** and its **Perspective** effect settings. In paragraph 14, we have already changed the parameters for **Scale** and **FOV**. Now click on **Rotation**, in order to rotate the video. Three different options appear on the screen: **RX**, **RY** and **RZ**. **RX** rotates the clip around its x-axis, **RY** around its y-axis, and **RZ** around its z-axis. To specify a constant value, use the corresponding dialer. For our tutorial, we want to animate the film. Therefore, open the polydiagrams for **RX**, **RY** and **RZ**. We recommend generating some keys for every option, and turn the lines into curves by shifting them. Use your imagination and try for yourself what amazing effects you can create here. In the **Preview** window you can watch the results for every step you have made so far.
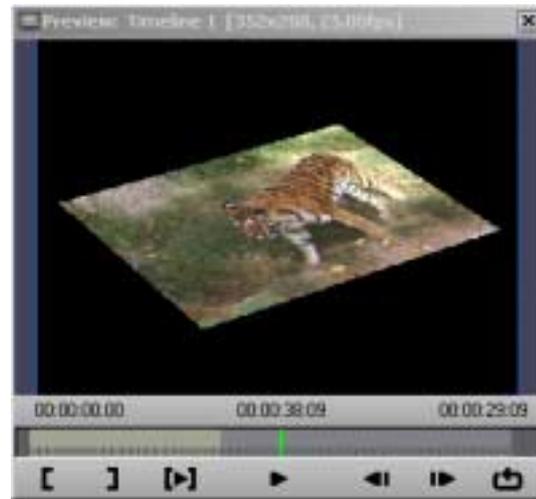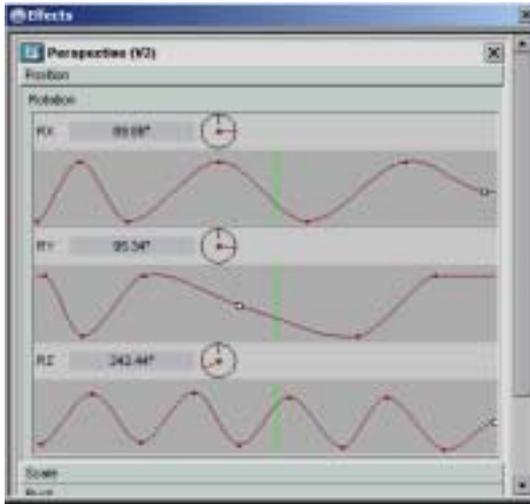
While fine-tuning the keys in a polydiagram it can be rather difficult to search for the current position with the green slider in the **Preview** window or the **Timeline**. It is also possible to change the current position by using the green slider directly in the **Effects** window. Simply click the green slider in the desired polydiagram while holding the *Alt*-key and move it to the left or right.

17. Finally, we want to adjust the pivot for the rotating clip. The result is that the rotary motion of the clip looks even wilder and uncontrolled. Click the **Pivot** option and open its polydiagrams **PX** and **PY**. The parameter **PX** defines the pivot for x-axis and **PY** for the y-axis. We recommend generating additional keys and turning the lines into curves. In the end, the **Effects** window and the **Preview** window for our project looked as follows. Unfortunately, the screenshot only gives an idea of the clip's animation.
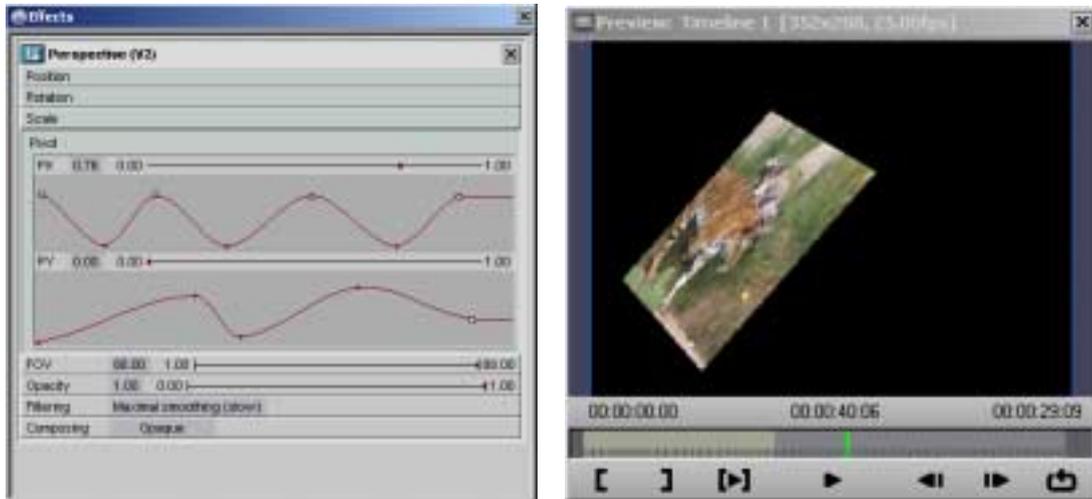
To enhance the video's quality when using the **Perspective** effect, you can select **Maximal smoothing (slow)** in the **Filtering** dropdown menu. This results in a quality improvement, but also requires more system power. Normally, the standard setting **No image filtering** already offers good results.

18. Congratulations! You have just finished your first **Perspective** tutorial successfully. We recommend continuing to play around with the different options and settings. With a little patience and practice you can create numerous impressive 2D and 3D effects with MainActor v5. We wish you a lot of fun with your future projects!

Rewind:

When you assign the **Rewind** effect to a clip it is played back backward. There are no additional settings for it.

Rotate:

This effect rotates the picture around fixed points.
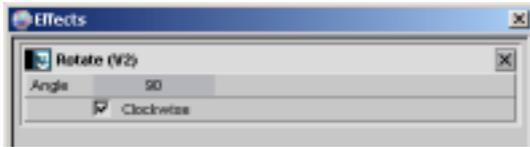
Under **Angle** you select the desired rotating angle. The predefined settings are **0, 90, 180** and **270** degree.

The **Clockwise** checkbox specifies whether the picture will rotate clockwise or counterclockwise.

Spread:

This option blurs an input image along user defined directions.

Under **Length** you adjust the width and expansion of the blurriness.

The option **Direction** specifies the angle and direction of the blur. You can use the polydiagram for changing the direction over time. You have also the opportunity to set the angle by using the dialer.

Under **Opacity Weight** you set the value for the opacity.

The drop-down menu under **Method** offers four options: **Linear**, **Additive**, **Manual** and **Manual Additive**. These options enable you to use different methods for blurring the picture, i.e. they define the mixing ratio. For example, **Linear** mixes the effect uniformly, and **Additive** uses additive mixing, meaning that the resulting opacity cannot be less than the original. The **Manual** and **Manual Additive** modes enable you to choose the mixing ratio.
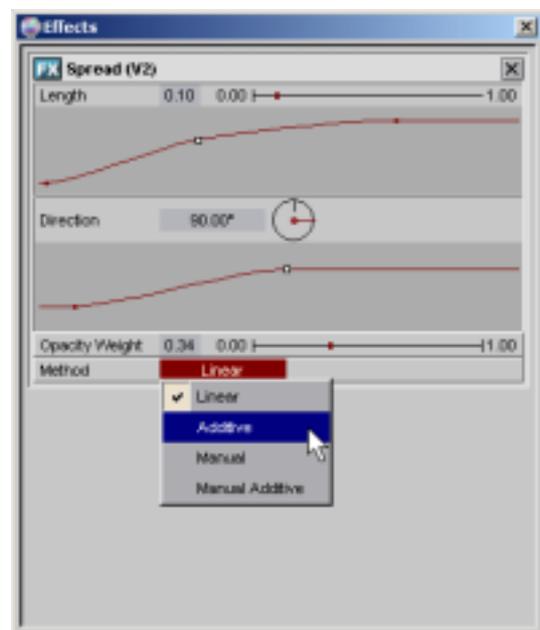
Standard

Bluescreen:

The **Bluescreen** effect is a famous filter for compositing bluescreened and greenscreened images onto a background. With this special effect it is possible to key a picture or a clip with an object, which was recorded in front of a blue background, on another clip so that you can conjure your actors to the most unusual places without any difficulty. You

only shoot an object or a person in front of a blue surface, area or wall. After that, you key out the blue color with MainActor. The result is that you have combined both clips. In the end the person or the object appears in front of the preferred scenery in your video.

Although it is easy to learn, the results can be quite impressive. The effect is an important part of today's film and movie business. There is hardly any Hollywood movie without a bluescreen effect in it.

For applying the **Bluescreen** effect you need at least two video tracks. In the first track, insert the clip which should be the background of your bluescreen sequence. Then add a second track to your project which contains the bluescreen clip, i.e. the scene you recorded in front of a blue surface. Now you have to combine the two clips by placing the **Bluescreen** effect on your bluescreen or greenscreen video in the second track. It is also possible to apply the effect only for a certain time. Therefore, you have to add a further track to your project and place the **Bluescreen** effect wherever you like. You can extend it according to your wishes.
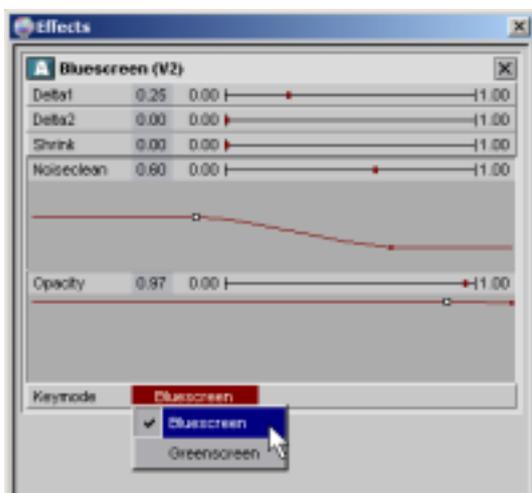
The **Bluescreen** effect offers various parameters which can be changed manually or by defining new keys in a polydiagram.

The two options **Delta 1** and **Delta 2** enable you to set the tolerance for the color thresholds.

The option **Shrink** smoothes the edges. Depending on the direction, the original object or the object, which is keyed, will be enlarged.

Noiseclean simply removes noise from the bluescreen image or clip.

With **Opacity** you adjust the transparency of the area. This is almost always set to one because the entire reason for using this effect is to make the color blue or green transparent.

Keymode specifies whether you want to use a **Bluescreen** or **Greenscreen** method for keying.

It might be possible that the final result shows some "errors" or unevenness. This depends on the quality of your blue- or greenscreen video. We have already mentioned this problem in the introduction. You can correct smaller defects to a certain degree by using the controls in the polydiagram. Simply play around with the parameters in order to obtain the adequate finetuning.

Tutorial - Bluescreen:

In this tutorial we want to show you how to apply the **Bluescreen** effect in a project. As we have already mentioned you need a video which is recorded in front of a blue (or green) surface, the so called bluescreen video. But where do you get such a large blue surface? Here are a few ideas: first and foremost, colored cardboards and posters are a very good possibility for recording bluescreen scenes. Unfortunately, you can often get some problems with their size because they are a bit small. An alternative is blue plastic film, e.g. for ponds. The advantage of a plastic film is its size. But keep in mind, that the blue surface has to be smooth and flat, i.e. there should be no waves or bumps. The available bluescreen sequence in this tutorial we have produced with a blue plastic film for ponds. Of course, you can use any other blue or green area for such shootings which are at your disposal. While you are shooting the video you only have to consider the size of the objects in front of a bluescreen and the background you want to include into your clip later on. But let's start now!

1. Before we start with the actual project, add the bluescreen clip and the clip, which will be the background, to the clipboard. We have already explained this in previous chapters. Press the small [icon] icon in the **Project** Browser, and follow the instructions on the screen.

   After you have added the background clip to the desired folder in the bin, drag it from the Browser into track **V1** of the **Timeline** window. You see the first frame of the clip in the **Preview** window.
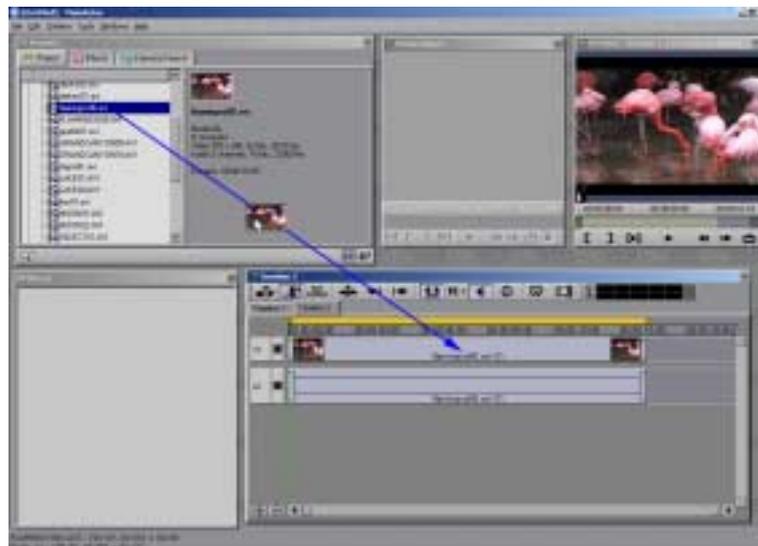
2. Now we have to generate a second video track (**V2**) for our project, which will contain our bluescreen clip later on. Move the cursor into the **Timeline** window. Press the right mouse-button, and choose **Add video track** from the appearing list.

   After you have generated the second video track, drag your bluescreen clip from the **Projects** Browser into **V2**, directly under the first clip in the **Timeline** window. As shown in the screenshot below, it is also possible to drag-and-drop the thumbnail of a clip into the Timeline in order to add it to a track.
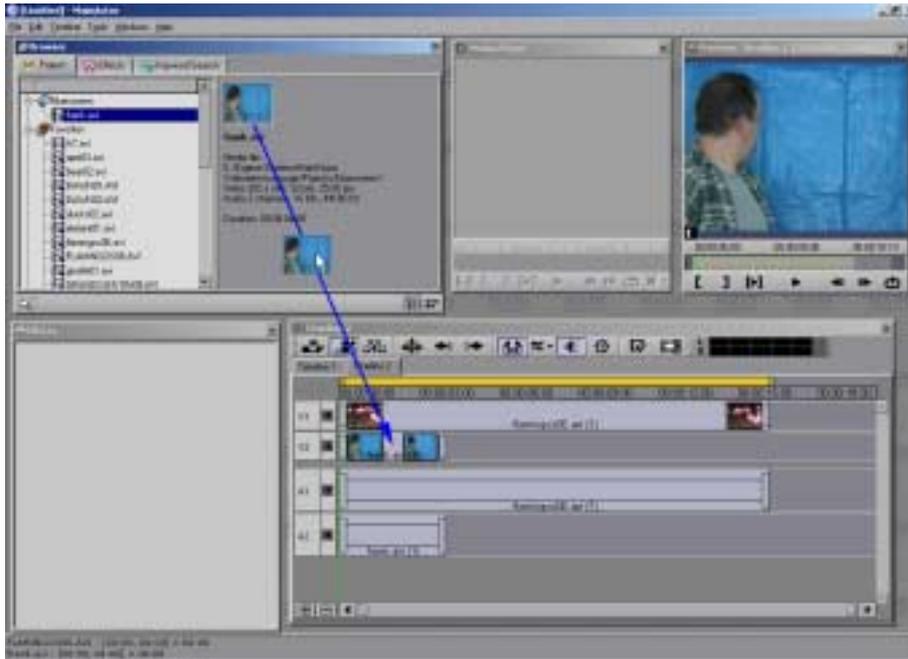
3. As you can see, the two clips in the **Timeline** window have different lengths. For that reason we have to shorten our background clip in **V1**, so that it matches our blue-screen video in **V2**. Click the lever at the end of the background clip and drag it to the left while holding the mouse-button until it corresponds to the final frame of the blue-screen video.
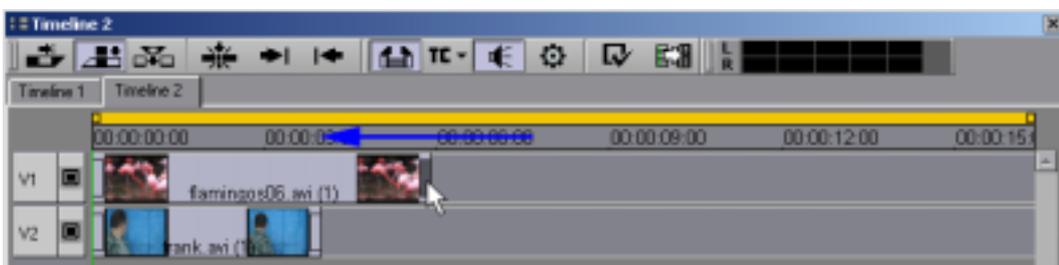
   Afterwards, you can shorten the yellow line above the tracks so that it corresponds with the end of the clips. The yellow line indicates that only this segment will be rendered.

4. We add the **Bluescreen** effect to our project now. Therefore, switch to the **Effects** pane, and open the **Filters** folder. Under **Standard** choose the **Bluescreen** effect, and drag it from the **Effects** pane directly on the bluescreen clip in **V2**.
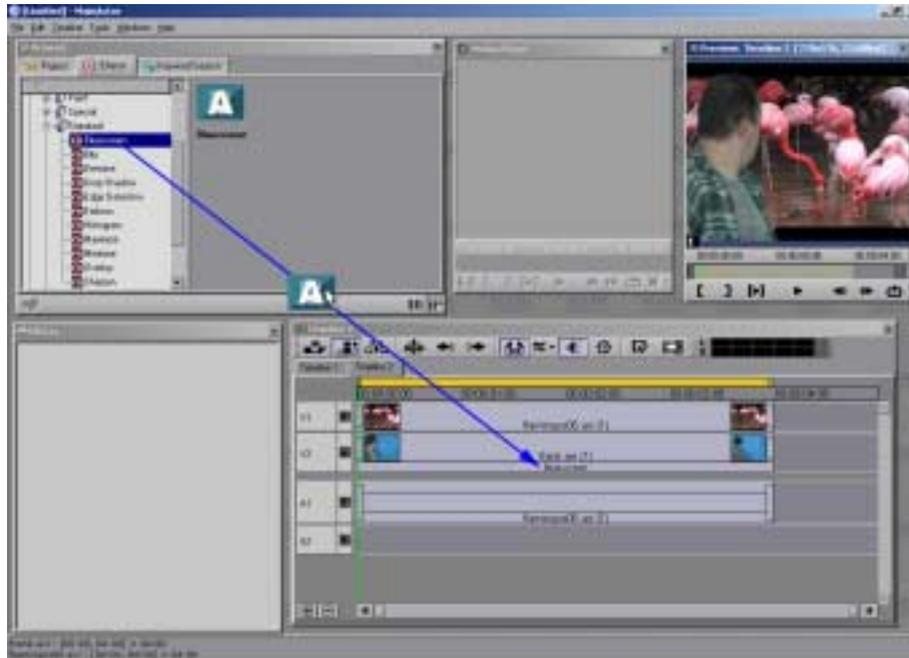
You see a first result of the two clips' combination with the **Bluescreen** effect in the **Preview** window.

5. Depending on your clips resolution you have to adapt the desired clips, so that they have the same resolution. In the screenshot above you can see, that the bluescreen image does not fit the background's clip resolution (parts of the bluescreen clip are in the black bar under the clip in V1). Double-click both clips, so that their settings are transferred into the **Effects** pane. In the drop-down menu **Resolution** select the **Resize to current resolution** option. Now the two clips' resolution should correspond with each other.
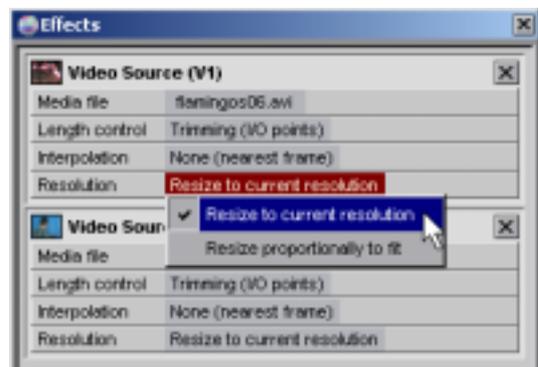
6. After applying the **Bluescreen** effect, you can fine-tune it, in order to improve the result. Double-click the **Bluescreen** effect in **V2**, so that its settings are copied to the **Effects** window. It is impossible to explain the individual settings in detail because the quality of your video is highly dependent on the quality of the source clip. And this is always different. After we have finished changing the parameters, the **Bluescreen** settings window looked like this, and our final video looked like this:
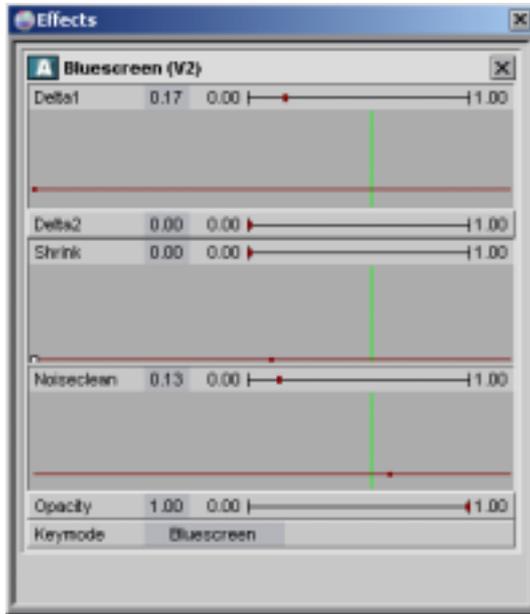
Depending on the quality of your bluescreen source, it might be possible that your final bluescreen video shows some noise or unevenness. We have already mentioned this in the introduction to this tutorial. You can correct smaller defects to a certain degree by using the controls in the polydiagram. Simply play around with the parameters in order to obtain the best possible results.

7. Now your bluescreen video is finished, and you can start a preview in the corresponding player. Maybe you play around with the parameters and try something else next time.

Blur:

This effect is a simple Gaussian blur applied to the input source.

The only option here is **Blurriness**. You can use it to adjust the intensity of the effect.
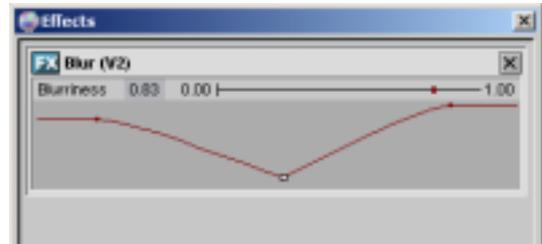
Color Keyer:

The **Color Keyer** is a basic tool for creating bluescreen, greenscreen and similar effects. The great advantage is that you can choose a user-defined color, i.e. you are not only restricted to blue or green but can select any color you like.
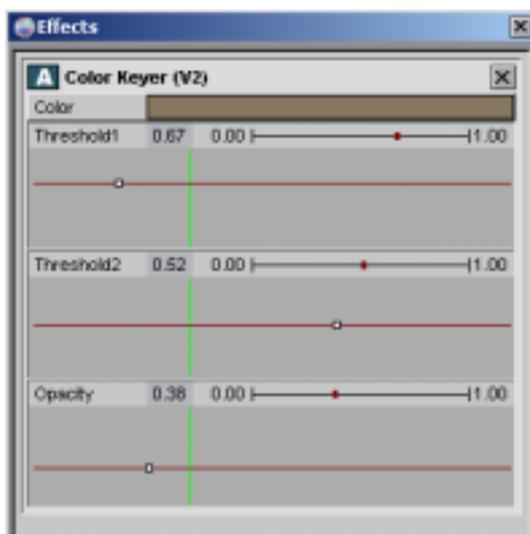

Under **Color** choose a color you wish to key out. Click the color bar, and select the preferred color in the following window. It is even possible to change the color in a polydiagram over time.

The two options **Threshold1** and **Threshold2** enable you to control the upper and lower threshold. These parameters help you to fine-tune your project. We will give you some brief examples to illustrate this: A higher upper threshold will result in higher transparence of the whole image. In contrast, a higher lower threshold will result in lower transparence.

Opacity controls the areas which are not keyed. Normally, the value is set to the maximum. Depending on the desired effect the value can be lowered, in order to give the object a ghost-like appearance.

When you use the **Color Keyer**, we recommend playing around with the settings and their results. The achieved results are highly dependent on your source material, and that is always different. So keep on trying...!

Tutorial - Color Keyer:

In this tutorial we want to show you how to use the **Color Keyer** in Main-Actor v5. In our project we will place the image of a person onto the wall of a building, so that the pixel color of the wall is replaced by the person's picture. Stay tuned, we will start in a moment!

1. After you have imported the two clips or images you want to combine, add the image, you want to place onto the wall, to **V1** in the **Timeline** window. In this tutorial we use a JPEG image of a person. Simply drag-and-drop the image from the **Project** pane into **V1**.
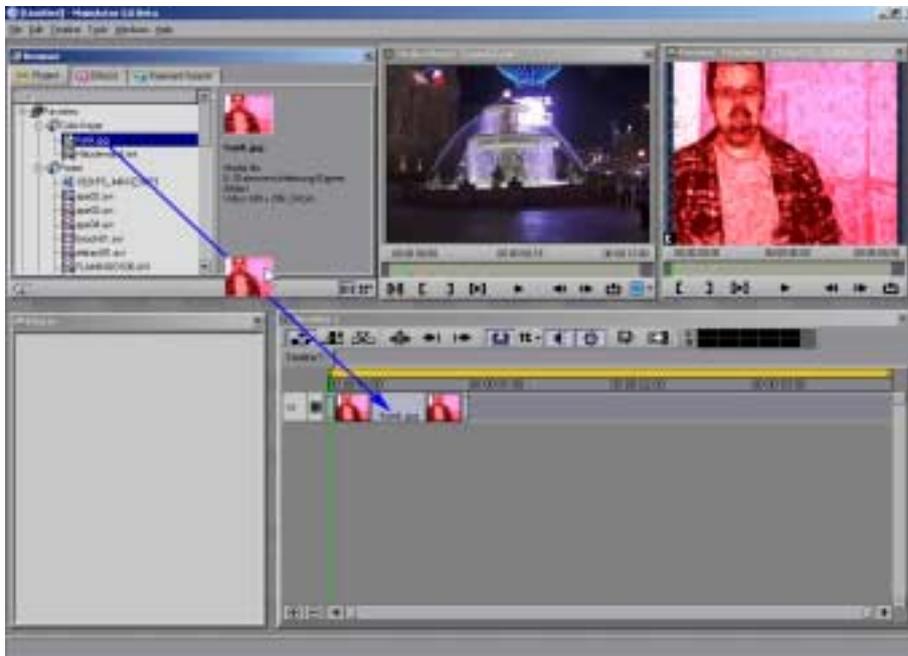
2. Now you have to create a new track for your background video, which shows the wall of the house. For that reason, move the cursor into the **Timeline** window and press the right mouse-button. Choose **Add video track** from the list so that a second track will be created.

    Afterwards, select the background clip in the **Project** pane, and place it right at the beginning of **V2** in the **Timeline** window. Our background video is an AVI file.
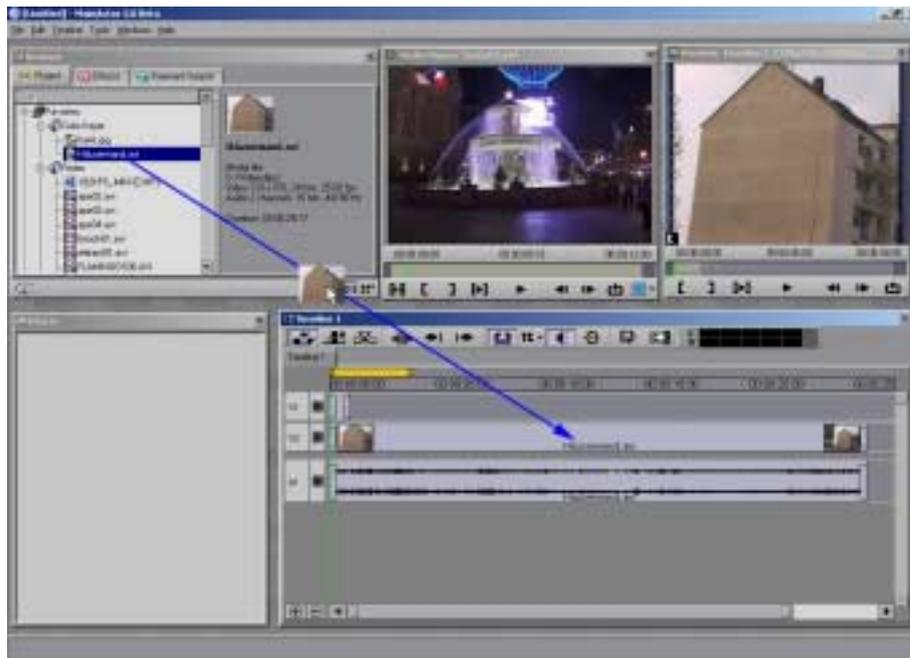
3. As you can see, the JPEG in **V1** and the AVI file in **V2** have not the same length. For that reason, we will extend the picture in **V1**, so that it corresponds with the back-ground clip. Click on the lever of the JPEG, and drag it to the right while holding the mouse-button until the two clips in the **Timeline** window have the same duration.

4. Now we will add the actual **Color Keyer** effect to our project in order to combine both clips. Switch to the **Effects** pane and open the **Filters** folder. Under **Standard** choose the **Color Keyer** effect, and drag it directly onto the background clip in **V2**.
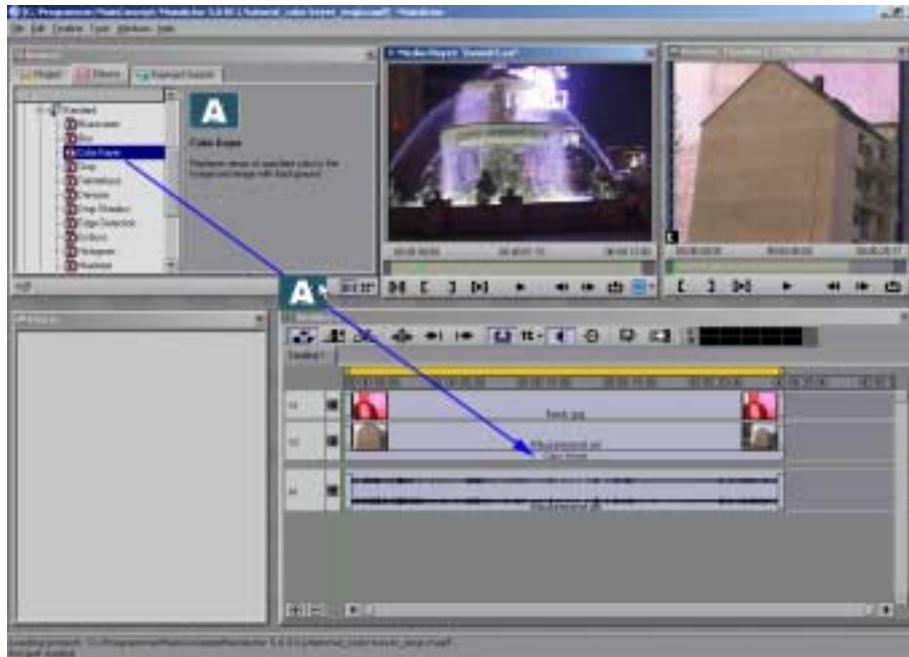
5. Now double-click the **Color Keyer** filter in **V2**, so that its settings are copied into the **Effects** window. It would be useless to explain all the settings we have done in detail, because they are highly dependent on the source material which is always different from each other. We want to make some notes on how to choose the color, you want to key out later on. In general, you have the opportunity to select every color in an image or video you like. With the help of the integrated pipette it is no problem anymore, and you can do it in no time at all. But you will have to do some fine tuning later on, so that the corresponding effect will display adequate results.

    At first, click the color bar among the effect settings, so that the appropriate dialog box appears on the screen. In the **Choose color** window, press the button with the pipette on the right. Afterwards, select the color you want to key out in the **Preview** window. As you can see, MainActor v5 displays every color you move the cursor over. Click the desired area, after you have found the color you want to key out. The chosen color is displayed in the dialog box. To disable the pipette, move the cursor on the correspond-

ing button again, and press it by using the right mouse-button. Confirm you choice by pressing the **OK** button in the **Choose color** window.
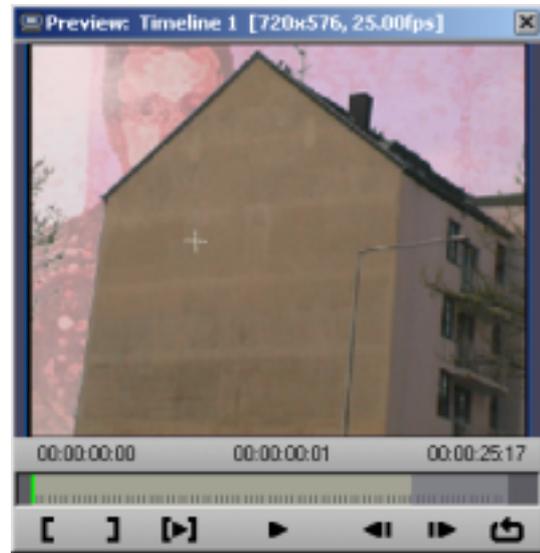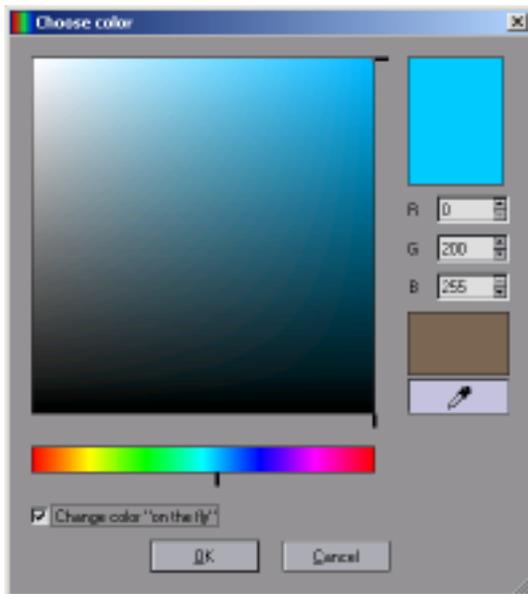
6. For our project, the **Color Keyer** settings window and the **Preview** window finally looked like as shown in the following screenshot:
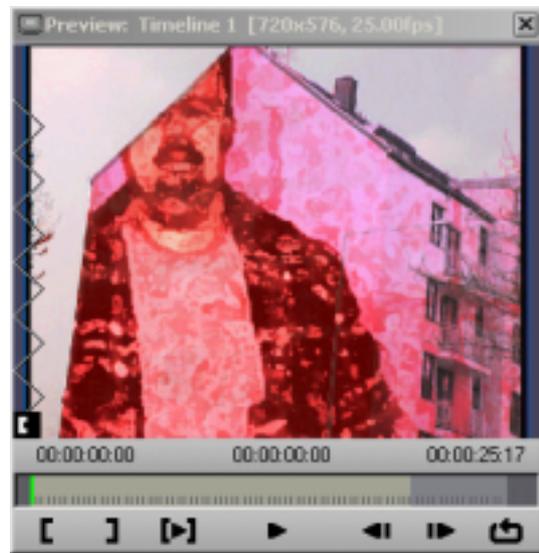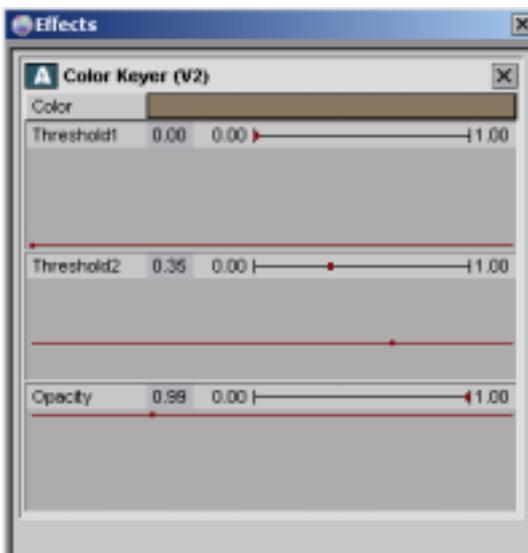
7. As you can see, in no time at all we have created an impressive compositing effect with the **Color Keyer**. Maybe next time you try a different color with this useful tool!

Crop:

This option enables you to crop the top, bottom, left as well as right margin of the picture.
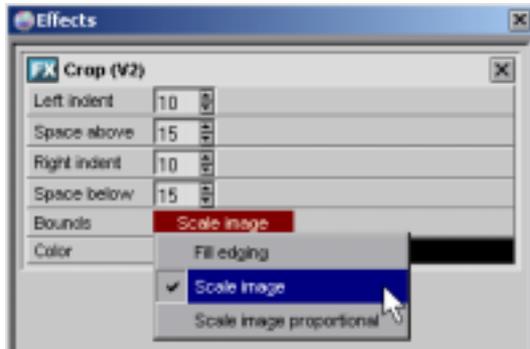
Left Indent crops the left margin of the picture.

Space Above crops the top margin of the picture.

Right Indent crops the right margin of the picture.

Space Below crops the bottom margin of the picture.

The **Bounds** option offers three parameters: **Fill edging, Scale image**, and **Scale image proportional**. **Fill edging** enables you to fill the margin with a user defined color. **Scale image** scales only the cropped area of the picture. Finally, **Scale image proportionally** allows you to fit the picture to the preview area, so that the aspect ratio is maintained.

Under **Color** you specify a color for filling the cropped area of a picture. It is possible to define a single color or to change the color over time by generating new keys in a polydiagram.

Deinterlace:

This filter helps you when grabbing an image from high-quality video that is interlaced. With interlaced video, each frame is made up of two fields. This approach provides smooth motion on a TV screen, but does not offer ideal results when a frame is captured as a snapshot. When the **Deinterlace** filter is applied to a clip, still images will be created by combining both fields of the selected frame. This method will produce much better results in most cases.

Threshold smoothes the noisy pixels of the picture. The value range is 0 ... 50.

Edge Detection sets a threshold for detecting edges in the picture. Sometimes horizontal edges in a picture are wrongly interpreted as a field shift such as lines which need to be deinterlaced. The value range is 0 ... 180.

If the **Blending** checkbox is ticked, field one and field two lay on top of each other. Normally, the fields are telescoped up.
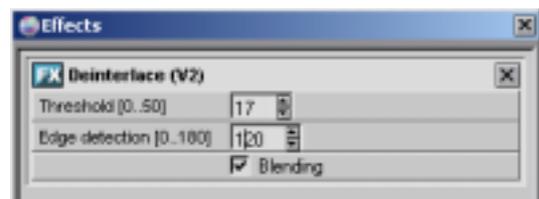
Deinterlace Basic:

This function is similar to the previous one, but it only offers some basic parameters for working with deinterlace.

Method specifies which field will be used. There are two options available: **Use upper field, discard lower one**, and **Use lower field, discard upper one**.
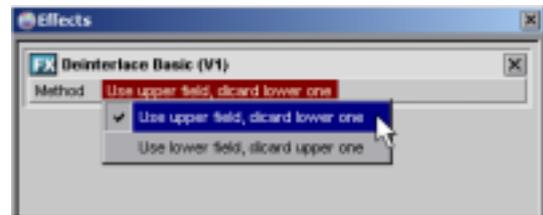
Denoise:

This effect removes noise from the input video clip.

You can only change the **Intensity** of the **Denoise** effect. Use the arrow buttons to define a new value. The value range for the filter is 1...11.

Drop Shadow:

This effect drops a shadow from the foreground onto the background. It includes a variety of parameters for generating unusual effects. For example, you can use it for texts which cast a shadow on the background.

The **Drop Shadow** effect contains several parameter which can be changed manually, by using a slider or by adding new keys in a polydiagram. Open the corresponding polydiagrams by clicking the options' names.

Under **Shadow Opacity** you define the opacity of the shadow, i.e. its visibility.

The option **Shadow Offset** defines the shadow's distance from the original object.

Shadow Direction enables you to define the shadow's angle and direction from its source. Use the dialer or the polydiagram to specify the desired angle. It is also possible to enter the number of **Turns** and the **Value** manually by clicking the value display under this option.

Shadow Blur adds a kind of blur effect to the shadow so that it looks more real.
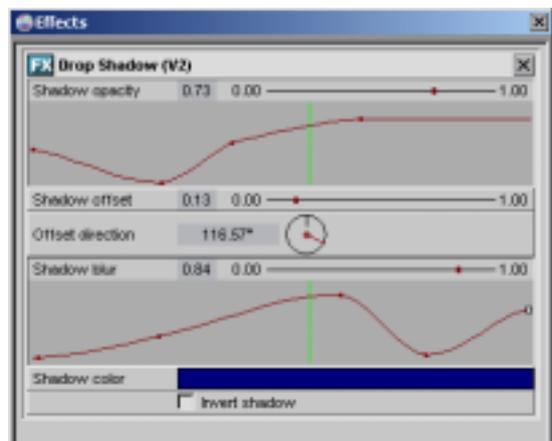
Color opens a dialog box where you can select your favorite shadow color. You have also the opportunity to change the color over time by defining new keys and generating a curve in the polydiagram.

If the **Invert Shadow Opacity** checkbox is enabled, the shadow area will stay clear but the rest of the background will be covered.

Tutorial - Drop Shadow:

This effect enables you to drop a shadow from the foreground onto the background. In this tutorial we want to show you how to use the **Drop Shadow** effect together with the **2D Text**, so that the title will drop a shadow onto the background clip.

1. We assume, that you have already added a clip to track **V1**. After that, we have to generate a second track for our **2D Text**, because we do not want the title to last the whole clip. Move the cursor into the **Timeline** window, and press the right mouse-button. Choose the option **Add video track** from the appearing list.

2. Now we have to add the **2D Text** to **V2**. Open the **Filters** folder, and drag the **2D Text** option from the **Text** folder into track **V2** as shown in the screenshot below.
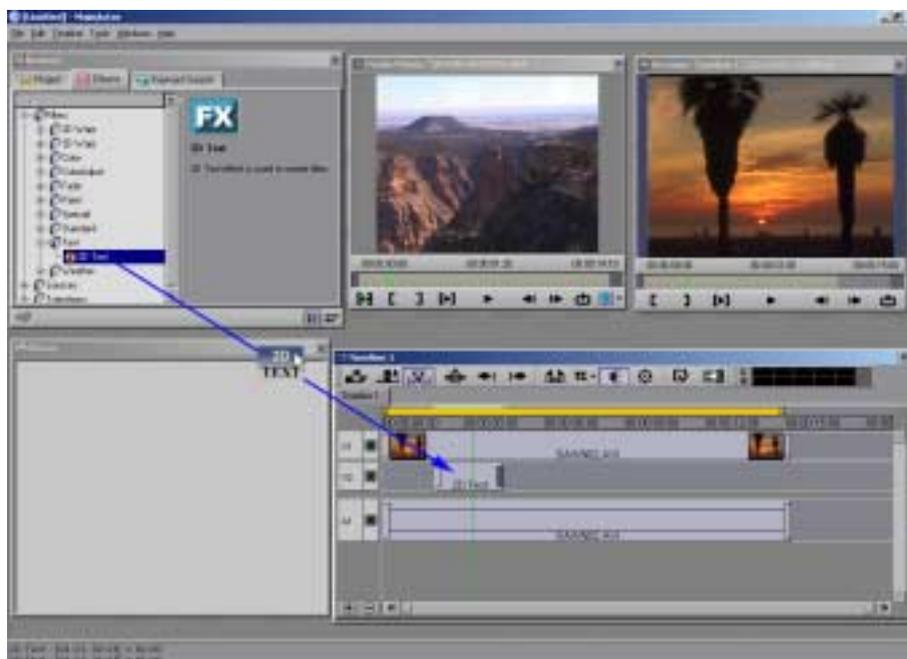
Now you have the opportunity to extend the **2D Text** clip in **V2**. Activate one of the levers, and drag it to the desired length while holding the mouse-button. If necessary, you can move the complete title clip to another position after you have selected it.
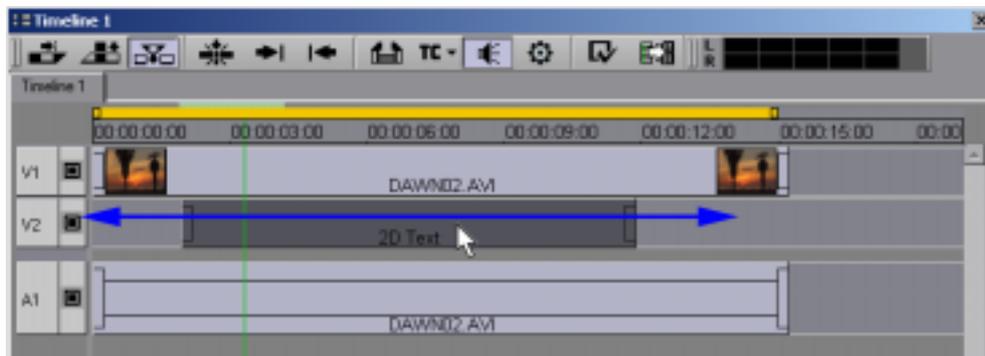
3. Double click the **2D Text** clip in **V2**, so that its settings are transferred into the **Effects** window. We will only adjust the most important settings for the **2D Text** because in this tutorial the **Drop Shadow** effect is the center of attention.

At first, delete the *MainConcept* writing, and enter the desired title in the input area of the **2D Text** settings. For our example, we decided that *Sunset...* is a nice title for our clip.

Now we have a look at the actual parameters of the **2D Text**. Under **Color** we chose white for our text because it can be seen very well on the red and yellow background.

Use the slider under **Size** to define the desired text size.

We want to create a static title. For that reason, it might be necessary to delete a key in the **X Pos** polydiagram. Select one of the keys and press the right mouse-button. Choose the **Delete** command from the list so that the key disappears. Use the slider under **X Pos** and **Y Pos** to define a static position for your title. You see the results of your changes directly in the **Preview** window of MainActor v5.

If you like, you can also change the settings for the **Skew** option. For our example, we left the settings at that!
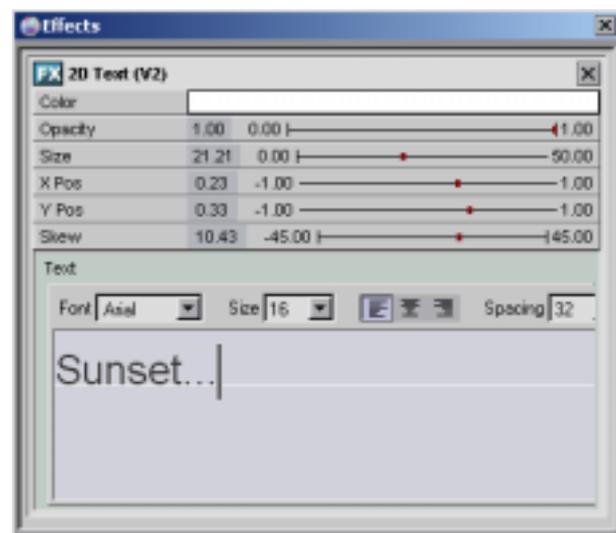
4. Now we add the **Drop Shadow** effect to our title. Therefore, open the **Filters** and the **Standard** folder. Choose the **Drop Shadow** effect, and drag it directly onto the **2D Text** clip in **V2**. In this example, we applied the effect by dragging its preview icon in the Browser onto our title clip.
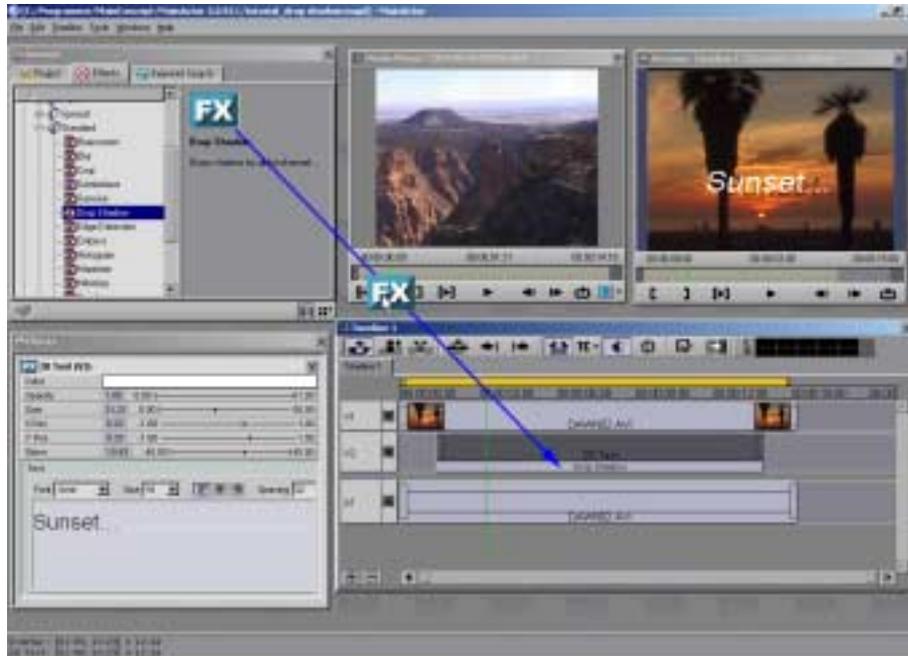
5. We will edit the **Drop Shadow** effect in a moment. At first, close the **2D Text** settings in the **Effects** window because we do not need them anymore. Simply click the **x** at the top right in order to close them. Then double-click the **Drop Shadow** effect in **V2** so that its settings are copied to the **Effects** window instead.

In the following we want to explain briefly the parameters we changed for the **Drop Shadow** effect. We recommend testing yourself what other options this effect offers.
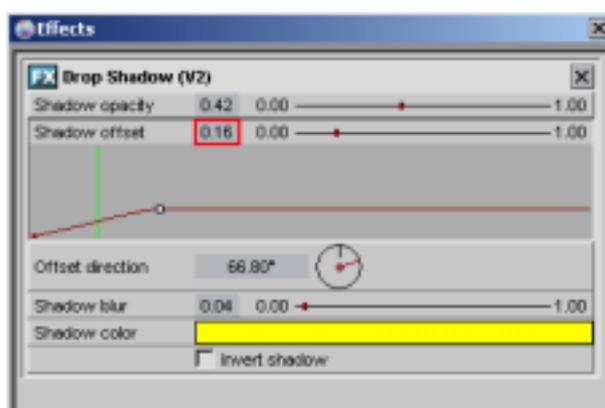
We move the **Shadow Opacity** slider to a middle position so that is the title's shadow is not completely visible.

For our tutorial, we have animated the shadow. At the beginning the **2D Text** title and its shadow are at the same position. Then the **Drop Shadow** slowly moves away from the original text, and becomes visible. Therefore, we generated another key in the **Shadow offset** polydiagram. At the beginning the offset value is zero. After a few seconds it has the offset *0.16* from the title.

We used the dialer under **Offset direction** to specify the shadow's angle from the original **2D Text**.

We slightly increased the value for the **Shadow blur** option in order to let the text shadow appear more genuine.

Under **Color** we chose yellow for the shadow. For our tutorial we only selected a single color. If you like you can also change the shadow color over time.

We left the rest of the parameters at their default settings.

In the end our **Drop Shadow** project looked like this:
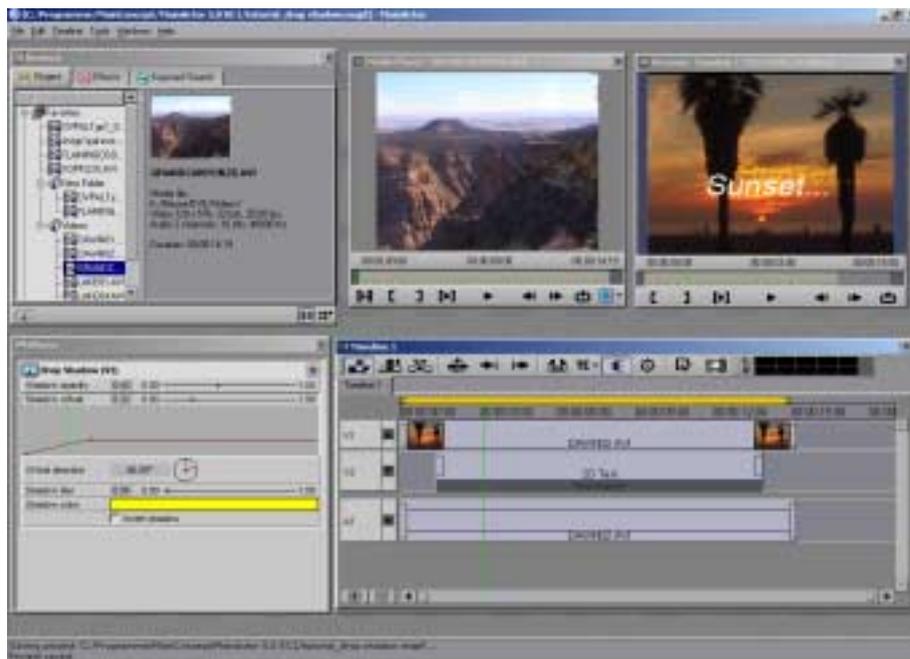
6. Congratulations! You have just produced your first **Drop Shadow** project. We recommend to try something else next time. Maybe you animate the colors or fade in and out the shadow. Use your imagination!

Edge Detection:

This effect tries to find edges in an image, and it outlines the borders within the image or a clip. The **Edge Detection** effect is based on the difference between neighboring colors.
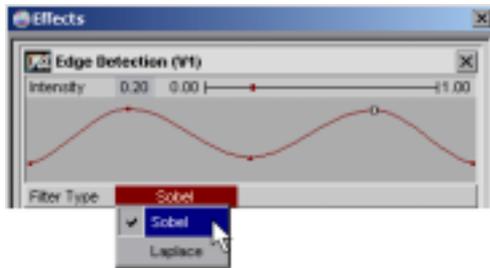
The option **Intensity** is self-explanatory. You can enter a constant value here or change the parameters in a polydiagram over time.

Under **Filter Type** you find two different filters for edge detection: **Sobel** and **Laplace**.

Emboss:

This option embosses an image or clip against the background. The **Emboss** effect generates a kind of relief on the background.

The option **Intensity** is self-explanatory. You can enter a constant value here or change the parameters in a polydiagram over time.

Under **Direction** you can specify the relief's direction. You find eight different parameters here.
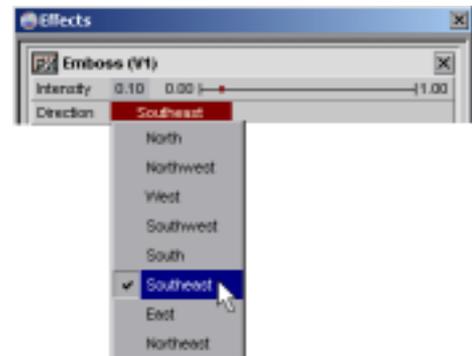
Histogram:

This effect is simply an auto contrast enhancement. It leads to better grey scale distribution.

Clicking the **Valid Range** button opens two settings:

Lowest Grey Value enables you to adjust the lowest value within the grey scale. The value range is 0 ... 128.

Highest Grey Value allows you to adjust the highest value within the grey scale. The value range is 128 ... 255.
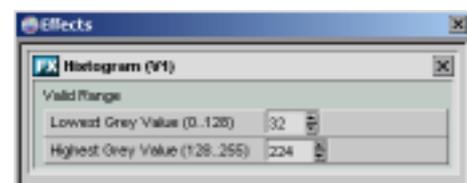
Maximize:

This effect replaces each pixel color with the maximum in its region.
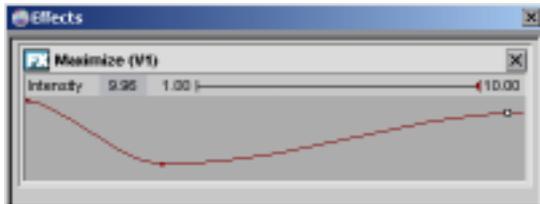
The option **Intensity** is self-explanatory. You can enter a constant value here or change the parameters in a polydiagram over time.

Minimize:

This effect replaces each pixel color with the minimum in its region.

The option **Intensity** is self-explanatory. You can enter a constant value here or change the parameters in a polydiagram over time.
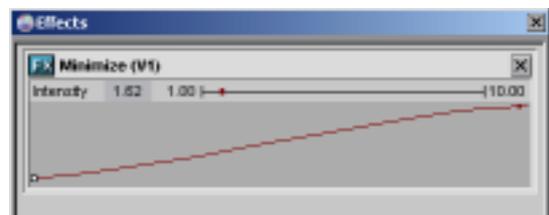
Overlay:

This effect lays an foreground image on the background by using a specific method. If your foreground source material contains an alpha channel, the **Overlay** filter can be a powerful alternative to keying.

You have to insert your background image or clip in track 1, and the foreground source in track 2. To use the **Overlay** effect for the whole source, place it on the second clip, or generate another track for using it over time. Afterwards, you can add this filter to the third track and define its duration.

We will present an example for using the **Overlay** effect in the **Noise** tutorial later on.
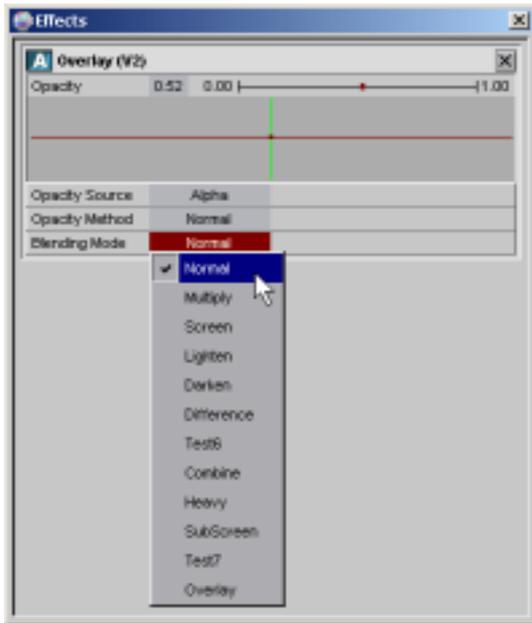
Opacity specifies the transparency of the area. This parameter defines the percentage rate for the opacity, i.e. which image is dominant.

The drop-down menu **Opacity Source** offers various methods for specifying the opacity rate for the source. The options included are **R, G, B, Alpha, Intensity** and **Opaque**.

The drop-down menu **Opacity Method** contains three options: **Normal, Premultiplied** and **Inverted**.

Under **Blending Mode** you find several different operations you can apply to a clip. The various options are: **Normal, Multiply, Screen, Lighten, Darken, Difference, Test6, Combine, Heavy, SubScreen, Test7** and **Overlay**. We recommend playing around with the different methods and have a look for yourself what exciting effects you can create here.

Sharpen:

This effect removes sharpness from the image or clip in the Timeline.

The **Intensity** option is self-explanatory. The value range is 1 ... 5.
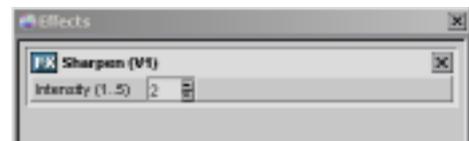
Text

2D Text:

This feature is a 2D text generator for creating credits, titles and other kinds of texts for your projects. You can use the texts as overlays or as individual clips. We have already explained you the general settings of the **2D Text** engine in a previous chapter. We will now explain its function in detail.

You can place a 2D text directly on or under a clip. In both cases it is used as an overlay. If you add it to track **V1** without a appropriate video source the title is used as an individual clip, so that you can select a desired color for the background of your text clip.

In the Timeline you have the opportunity to change the title's duration. Simply select the levers at the clip ends. Hold the mouse-button, and drag the text to the desired length.

You can enter the text in the area at the bottom of the **2D Text** settings window. Move the cursor into the text field and press the mouse-button. Now you can enter the desired text.

The **2D Text** engine offers various settings for editing titles.

Under **Color** you define the text color for your title. Click the colored box in order to choose the desired color. In the following window you select it. You have also the opportunity to change the title's color over time. Open the polydiagram, and generate new keys. After you have generated new keys, you can turn the line into a curve. You see the generated color gradient in the colored box, i.e. it displays which colors the text will have over time.

The option **Opacity** specifies the transparency of the title. This parameter defines the percentage rate for the opacity, i.e. if the text is completely visible, if it is hardly visible etc. If the value tends to zero the text becomes more and more transparent. You can enter a constant value manually or use the slider here. It is even possible to fade in and fade out a text. Therefore, you have to generate new keys as described in earlier chapters. Select the desired keys and turn the line into a curve. A high key means that the text is visible, and a low one that it is transparent.

The option **Size** enables you to adjust the size of your title. You can change the text size in the polydiagram over time by defining new keys. For example, you produce a text animation which is getting larger and smaller over and over again. Thus you gain the impression of a 3D effect, i.e. the text moves towards and away from the audience. To specify a constant value for the text size use the slider or enter the value manually by clicking the value box.

With **X Pos** and **Y Pos** you specify the title's position on the screen. The first option determines the text position on an imaginary x-axis, and the second one on an imaginary y-axis. It is possible to create static as well as animated texts.

To set the text position use the slider or enter it manually. For that reason, click the **X Pos** or **Y Pos** value button. In the appearing window you can enter the value for the position now. When you click the ▼ icon, two additional parameters appear. Here you can define a different minimum or maximum value user range for this option if necessary. Confirm the settings by pressing the **OK** button.
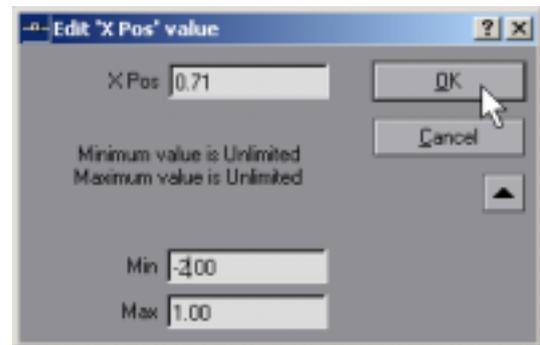
When you want to create animated text, which moves across the screen, you have to generate new keys. We have already explained how to work with polydiagrams. We want to give you some brief examples what animations you can create by showing you two common text animations.

1. A very common setting for films is that the text moves from the top to the bottom of the screen as in the credits of most Hollywood movies. At first, open the polydiagram for both the **X Pos** and the **Y Pos** option.
   Depending on the default settings and the desired position on the x-axis you have to edit some keys in the **X Pos** polydiagram. In our example, we have placed the title in the middle of the x-axis and the screen.

   Now move the green slider in the **Timeline** window to the beginning of the **2D Text** source. In the **Effects** window, open the polydiagram for the y-axis (**Y Pos**). Drag the slider until the title disappears from the top of the screen. The key must correspond with the green line in the polydiagram. Afterwards, move the green slider in the **Timeline** window to the end of the **2D Text** source. Then add a new key at the end of the line in the **Effects** window by holding the *Shift* key, and clicking the mouse button at the end position of the line. Select the new key and move it downwards until the title disappears from the bottom of the screen. When you start the preview now, the text moves from the top to the bottom of the screen.

For our example, the polydiagrams for **X Pos** and **Y Pos** looked like this:
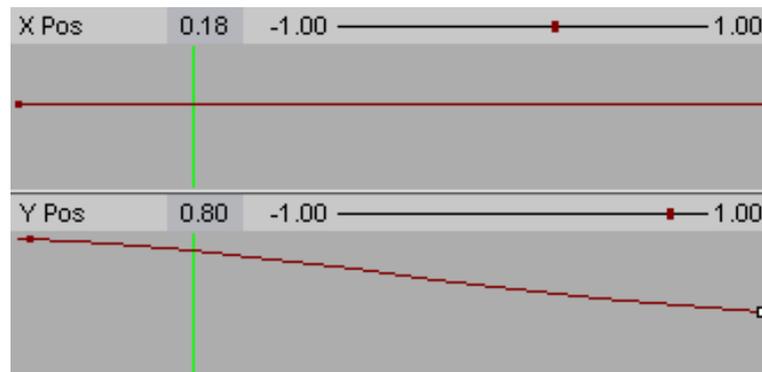
When you want to change the animation's direction, i.e. that the text moves from the bottom to the top, you have to reverse the keys' position in the polydiagrams, so under **Y Pos** the first key has to be at the bottom, and the second key on the top.

2. There is also the possibility that the text moves from the left to the right. These animation settings are similar. At first, open the polydiagram for the **Y Pos** option. Move the slider to the position where you want the title to appear on the y-axis.
    Now move the green slider in the **Timeline** window to the beginning of the **2D Text** clip. Afterwards, open the polydiagram for the **X Pos** option. You have to add a new key here because we want to animate the text so that it moves from the left to the right. Select the first key, and move the slider (or the selected key) downwards until the title disappears from the screen on the left.

    In the **Timeline** window, move the green slider to the end of the **2D Text** clip. Now select the second key which correspond with the green horizontal line, and use the slider (or the selected second key) until the title disappears on the right.

For our example, the polydiagrams for **X Pos** and **Y Pos** looked like this:
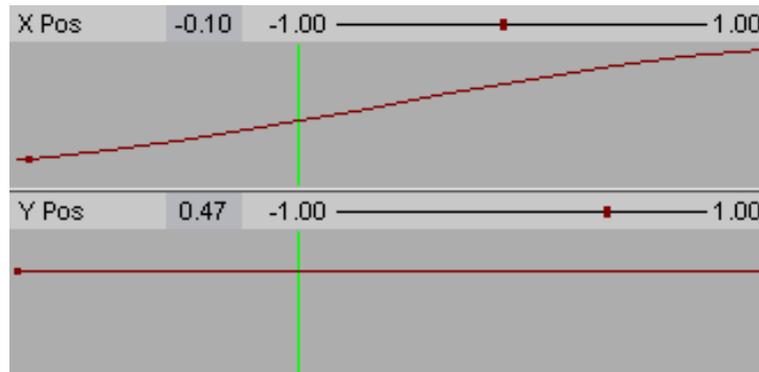

When you want to change the animation's direction, i.e. that the text moves from the right to the left, you have to reverse the keys' position in the polydiagrams, so under **X Pos** the first key has to be at the bottom, and the second key on the top.

The option **Skew** enables you to specify the title's slope. It is possible to tilt the text to the right as well as to the left by using the slider. Applying this option can produce a 3D effect. You have also the opportunity to edit this option over time so that you are able to animate a text. Simply open the polydiagram and generate new keys as mentioned earlier in this chapter.
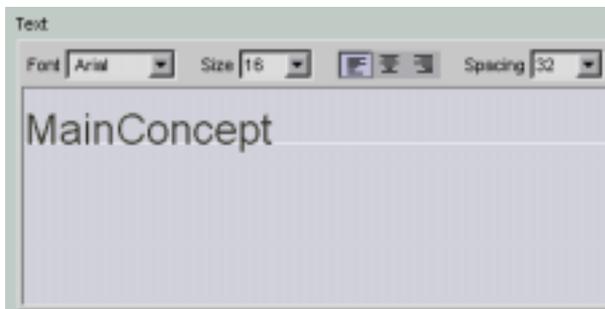
In the **Text** area you enter the text. It also offers some additional text functions.

Under **Font** you select the font type for your title. MainActor v5 offers innumerable different fonts. This option depends on your system requirements, i.e. which fonts are installed on your computer.

Under **Size** you choose the font size in the text field. This parameter has nothing to do with the title's size in your video. You define this parameter under the **Size** option mentioned earlier in this paragraph.

The three buttons in the middle of the bar specify the title's alignment: **Align Left, Align Center** and **Align Right**. Mark the lines you want to change the alignment for, and click the desired button.

Under **Spacing** you set the space between the lines. Mark the lines where you want to change the spacing, and choose the desired value from the drop-down menu.

In the text field below the parameter bar you enter the desired text.

Tutorial - 2D Text

In this tutorial we want to create an animated title which will move through the picture, and will be faded in as well as out again. In our example, we used the text as an overlay.

1. At first, create a new project by choosing the **New** option in the **File** menu. Then drag a video clip directly from the **Project** Browser into track **V1** in the **Timeline** window.

   After you have inserted the clip into **V1**, we must create a second video track because we do not want the title to last the whole video clip. Move the cursor into the **Timeline** window, and press the right mouse-button. Choose **Add video track** from the appearing list, so that track **V2** is added to your project.

2. Switch to the **Effects** pane. Open the **Filters** folder, and drag the **2D Text** option under **Text** directly from the **Effects** pane into track **V2** in the Timeline.

   Now you have the opportunity to move the **2D Text** to the exact position where you want it to appear. It is even possible to change the duration of the title. To move the effect in the Timeline, select it and move it to the desired position while holding the mouse-button.
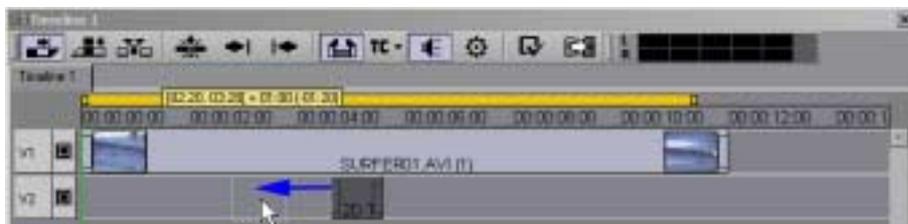
It is also possible to extend or shorten the **2D Text** clip in the Timeline. Click one of the small levers at the left or right end of the clip. Afterwards, drag it to the desired length while holding the mouse-button.
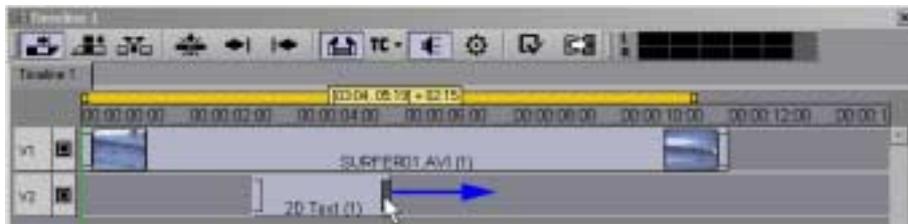
3. After you have placed the clip at the exact position, and defined its duration, double-click the **2D Text** clip in the Timeline, so that its settings are copied into the **Effects** window.

4. We will animate our title for the project in a moment. We want the text to move through he picture, let it fade in and out, and also adjust some more settings, such as font color, size etc. Move the green slider to the beginning of the **2D Text** clip, so that you see the title in the **Preview** window.

At first, change the color of the text. We want the title to have a single color. It is also possible to change the text color over time by generating new keys in the corresponding polydiagram. But we will work with the polydiagram while editing another parameter. However, click the color bar under **Color**, and choose the desired color in the following **Select Color** window. Confirm your choice with **OK**.
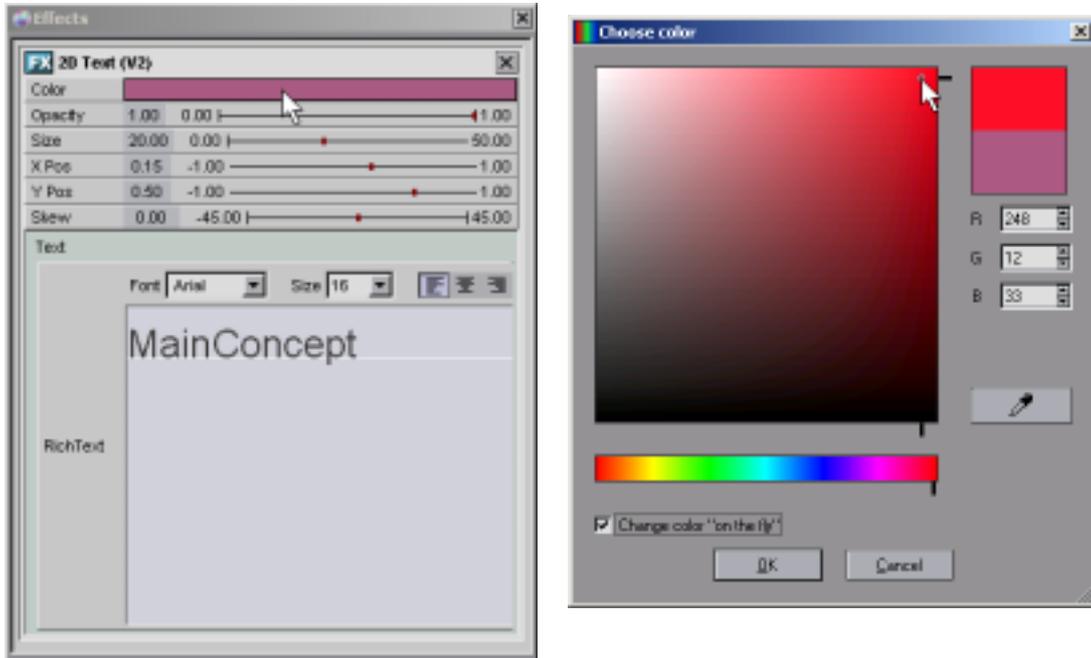
5. Before we continue changing the different text parameters, we will enter the desired title for our clip in the input area. At first, delete the *MainConcept* writing in the text input area. Then choose a font type for your text in the drop-down menu under **Font**. Then you can enter the desired text. In this tutorial we chose the title *On the Beach*.
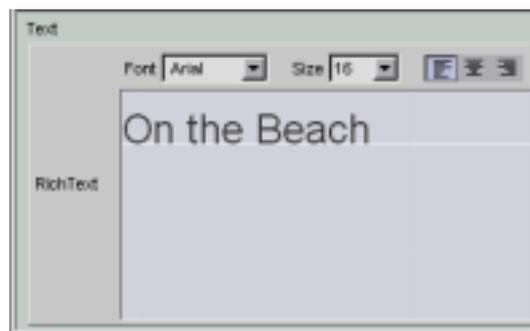
6. As we said before, we want the title to be faded in and out. Therefore, we open the polydiagram for the **Opacity** option by clicking its name. Make sure that the green slider is at the beginning of the **2D Text** clip. Now generate three new keys on the **Opacity** line. We need them in order to turn the line into a curve for creating the fade in and out effect.

7. To create a new key, you have to move the cursor onto the line in the polydiagram. Then press the mouse-button while holding the *Shift*-key. Repeat this step two more times. The screenshot on the right shows the poly-diagram after creating the new keys.
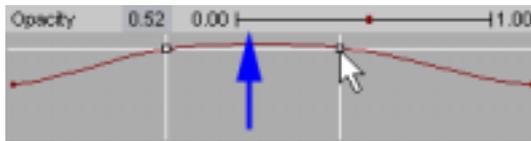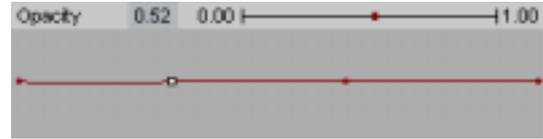
Now we have to change the position of the keys to fade the title in and out. The higher the value in the polydiagram, the higher is the opacity of it, i.e. the better your can see the title. We want the title to be visible in the mid-

dle of the **2D Text** clip. Therefore, select the second and the third key by clicking both while holding the *Ctrl*-key. Then click one of them, and drag it to the top of the polydi-agram, as shown in the screenshot on the left. The other keys will follow automatically.

At the beginning and at the end the text can-not be seen on the screen. For that reason, we have to drag the first and last key to the bottom of the polydiagram. Select the two keys as described above and drag them to the position of the polydiagram. As you can see, we generated a curve, that lets the text fade in and out again.
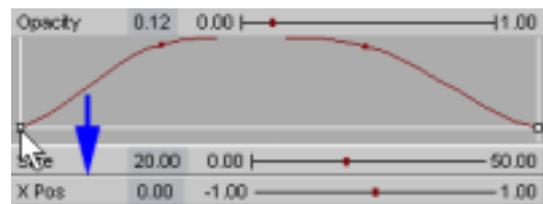
8. We will also change the text size because it is a bit small for our tutorial. We do not change the text size over time, i.e. we do not add any keys in the polydiagram here. Use the slider under **Size** to specify the desired text size. You see the results of the changes in the **Preview** window. However, it might be necessary to move the green slider in the **Timeline**, so that the text will be visible again.
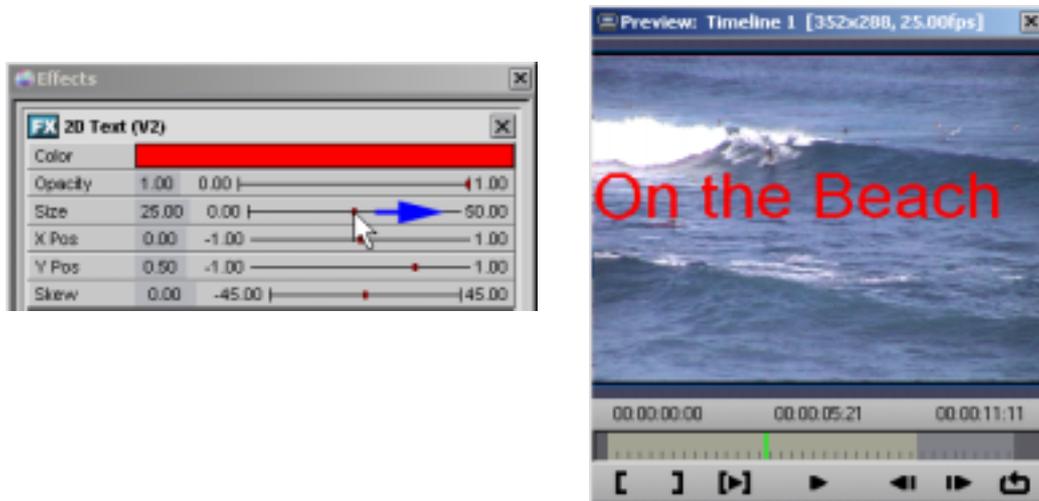
9. Now we will animate our title. As we said before, we want the text to move across the screen. Open the polydiagrams for the **X Pos** and **Y Pos** options. With **X Pos** you define the titles position on the x-axis, and with **Y Pos** on the y-axis. We recommend generating a few new keys, and playing around with the polydiagrams in order to get used to them. Simply generate a path you want the title to follow.
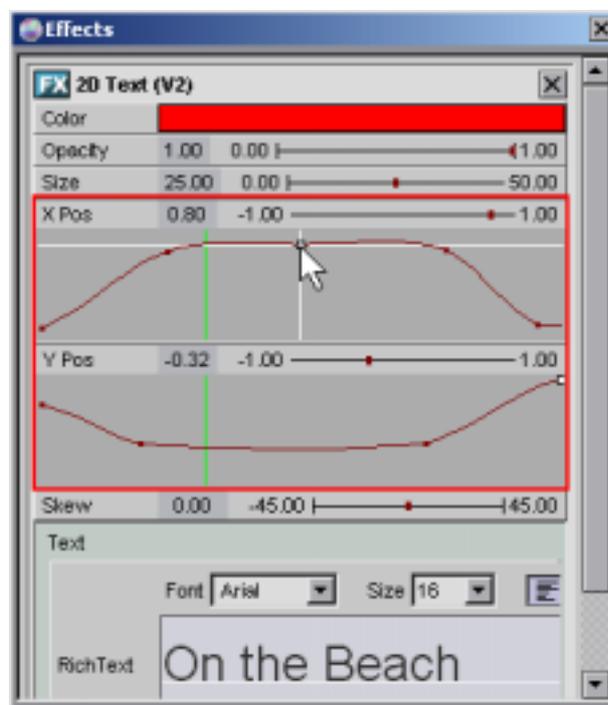
10. Under **Skew** you can specify the title's slope. We only made slight modifications to this option, otherwise the **2D Text** would be overornated. Use the slider to set it to the desired value. You can see the result in the **Preview** window.
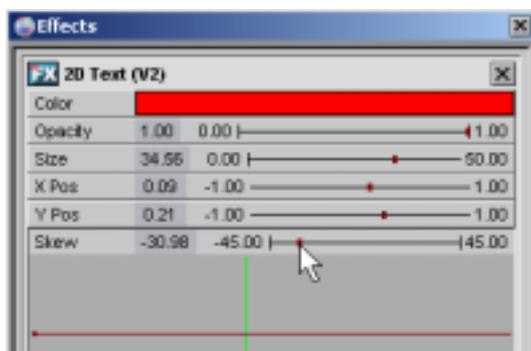
11. Now your animated title is finished, and you can start a preview in the corresponding player. Maybe you play around with the parameters and try something else next time.

Weather

Fire:

This filter alters your clip as if you watch your video through a fire. You can define whatever color you like for the fire.
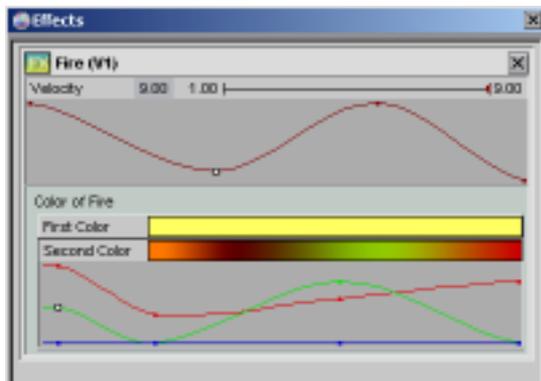
Under **Velocity** you set the strength of the fire's motion. You can set a constant value or change it in the polydiagram over time.

Under **Color of Fire** there are two options for changing the flame's color(s) by using the color bar as well as the polydiagram. The **First Color** and **Second Color** options enable you to choose a single color by clicking the colored box. In the following window you can select the desired color. You have also the opportunity to change the colors for the flames over time by defining new keys in a polydiagram and creating a curve.

Fireworks:

This effect simply adds a fireworks simulation to your clip.

Under **Number of Bangs** you set the frequency of fireworks explosions. The option's value range is 1 ... 30.

Living Time of Bangs enables you to adjust the duration the fireworks explosions will be visible. The value range is 1 ... 9 here.

Under **Variation** you specify the appearance of the explosions, i.e. their starting points and color. The value range is 1 ... 999 here.
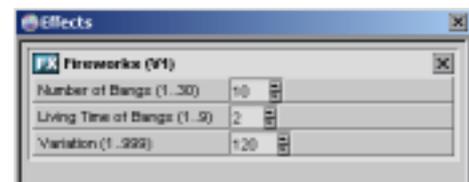
Flying Object:

This effect generates an object which looks like a comet with a tail.
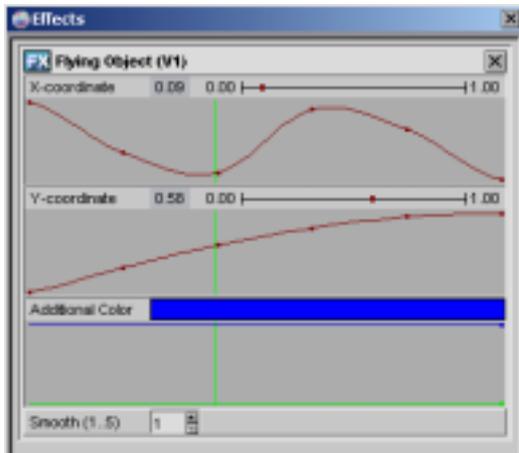
Under **X-Coordinate** and **Y-Coordinate** you set the current position of the object on the x- and y-axis. When you generate new keys, and turn the line into a curve you are able to create a path the comet will follow. We recommend playing around with the settings to get used to them.

The flying object consists of two colors: white and an **Additional color** you can select under the corresponding heading. Simply click the color bar, and choose you desired color in the following window. It is even possible to change the color over time. You only have to generate new keys in the polydiagram and turn the line into the desired curve.

The **Smooth** option enables you to blur the flying object and its tail. The value range for this parameter is 1 ... 5.

LightningBolt:

This effect generates lightnings that appear randomly or user defined on the screen.
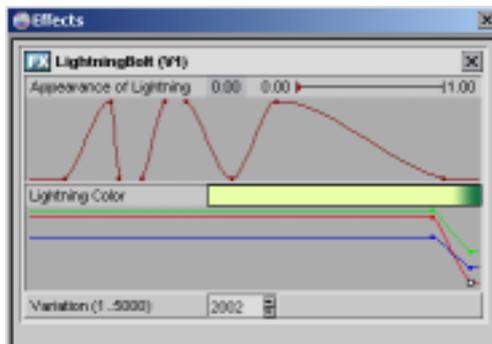
Appearance of Lightning specifies the lightning's frequency. You can set this parameter to a constant value or change it over time by generating a curve in the polydiagram.

Under **Lightning Color** you select the desired color for your lightnings. It is also possible to change the color over time.

Under **Variation** you choose a different appearance for the lightnings.

Rain:

This effect adds rain to your still image or clip.

The option **Intensity of Rain** is self-explanatory. It is possible to set a constant value or edit new keys in a polydiagram.

Drop Angle specifies the raindrop's angle in your clip. Use the dialer to set the desired angle, or click the value box and enter the **Turns** as well as the **Value** manually. It is even possible to change this option over time in a polydiagram.

The option **Visibility** enables you to adjust the appearance and visibility of the individual raindrops. The higher the value, the denser or heavier is the rain.
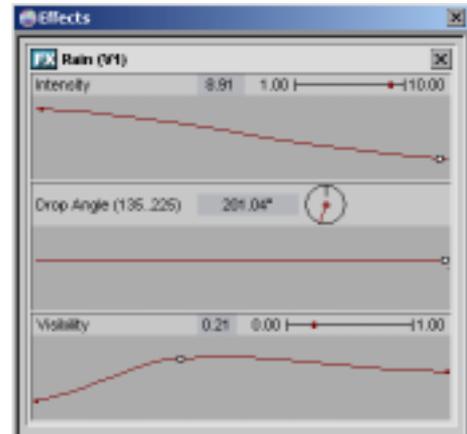
Rustle:

This effect adds noise to a clip or an image, as if there is a monitor or TV interference.

The option **Intensity** is self-explanatory. You can use the slider to set the value for the effect. It is also possible to change the intensity of the effect over time by defining new keys in the polydiagram.
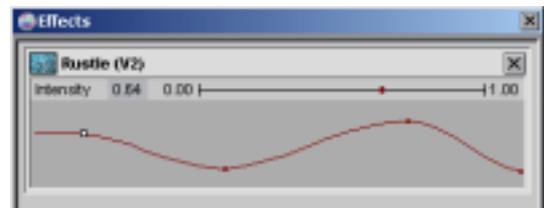
Snow:

This effect generates snowflakes which turn your clip into a winter landscape.
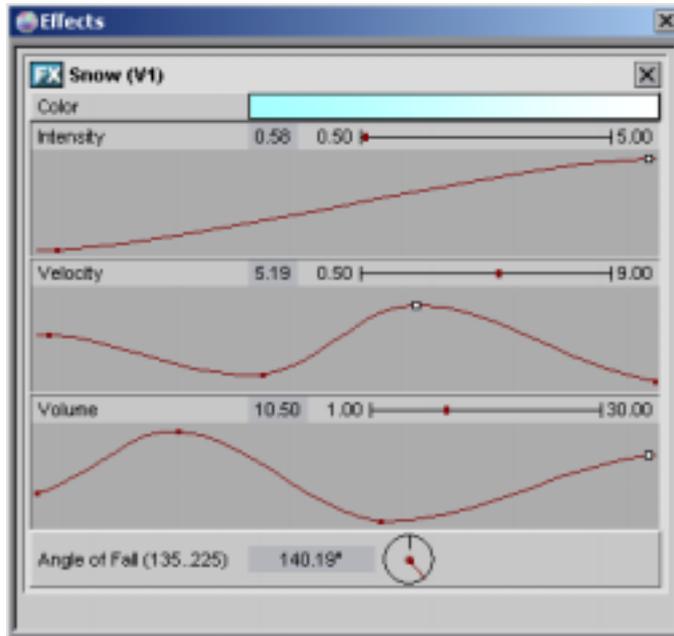
Color lets you choose a color for the snowflakes. Click the colored box to select the preferred color. You can also open a polydiagram by clicking the **Color** heading. Generate new keys and create a curve for changing the snowflakes' color over time.

Intensity is self-explanatory. It is possible to enter a constant value or change the parameters over time.

Under **Velocity** you set the strength of the snowflakes' motion. The option's value can also be changed over time by generating new keys in a polydiagram. It is even possible to enter a constant value here.

Volume is self-explanatory, too. It simply specifies the snowflakes' size and volume. You have the same options as mentioned for the previous settings.

Snow Angle defines the snowflakes' angle in your clip. Use the dialer to set the desired angle, or click the value box and enter the **Turns** as well as the **Value** manually. It is even possible to change this option over time in a polydiagram.

Tutorial - Snow:

When you want to shoot a film, unfortunately, you cannot choose the weather you like. Or that day there isn't the weather you need for your recordings. MainActor v5 offers several effects which can create different weather conditions, e.g. rain and snow. We want to introduce the latter in this brief tutorial. The **Snow** effect enables you to add snowflakes to your clip, so that it looks like cold winter. In combination with the **Recolor** effect you can produce impressive results.

1. We assume that you have already added the necessary source clip to a clipboard or folder in the **Project** pane. We will show you a different way to add clips to the Timeline this time. At first, drag the clip from the **Project** Browser into the **Media Player** of MainActor. If you like, you can specify In/Out-points in the **Media Player**, if you do not want to use the whole clip.

Before you add the clip to track **V1**, move the green slider in the **Timeline** window to the position where you want to insert the clip. Then drag the clip from the **Media Player** directly into the **Preview** window, as shown in the screenshot below. As you can see, the clip is placed on the previously defined slider position.
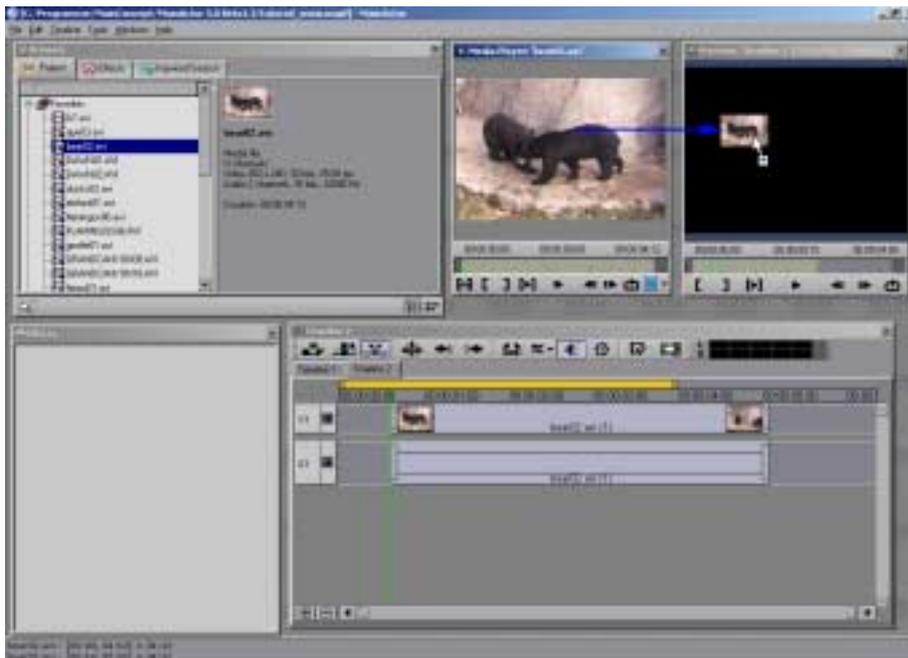
2. We will apply the **Recolor** effect to the clip because we want to create a winter land-scape, so we have to add a bit of grey and brightness. The clip has to visualize the cold atmosphere. For that reason, switch to the **Effects** pane, and open the **Filters** folder. Under **Color** you select the **Recolor** effect, and place it directly on the clip in **V1**, because we want to use the effect for the whole clip.
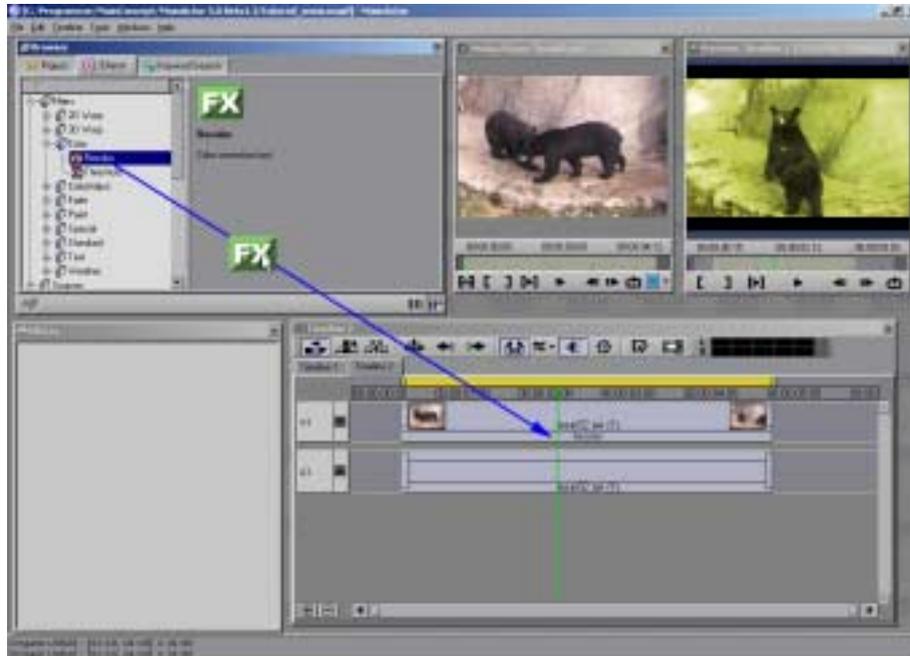
3. In order to fine-tune the **Recolor** effect, double-click it, so that its settings are copied into the **Effects** window. Now you can edit the effect, and remove the color from the clip. After you turned the picture into black and white, you have established the basis for a winter landscape. As we said before, it is difficult to present default values for the different options, because the settings are highly dependent on your source material. For our example, the **Effects** window and the preview looked like in the screen-shots below:
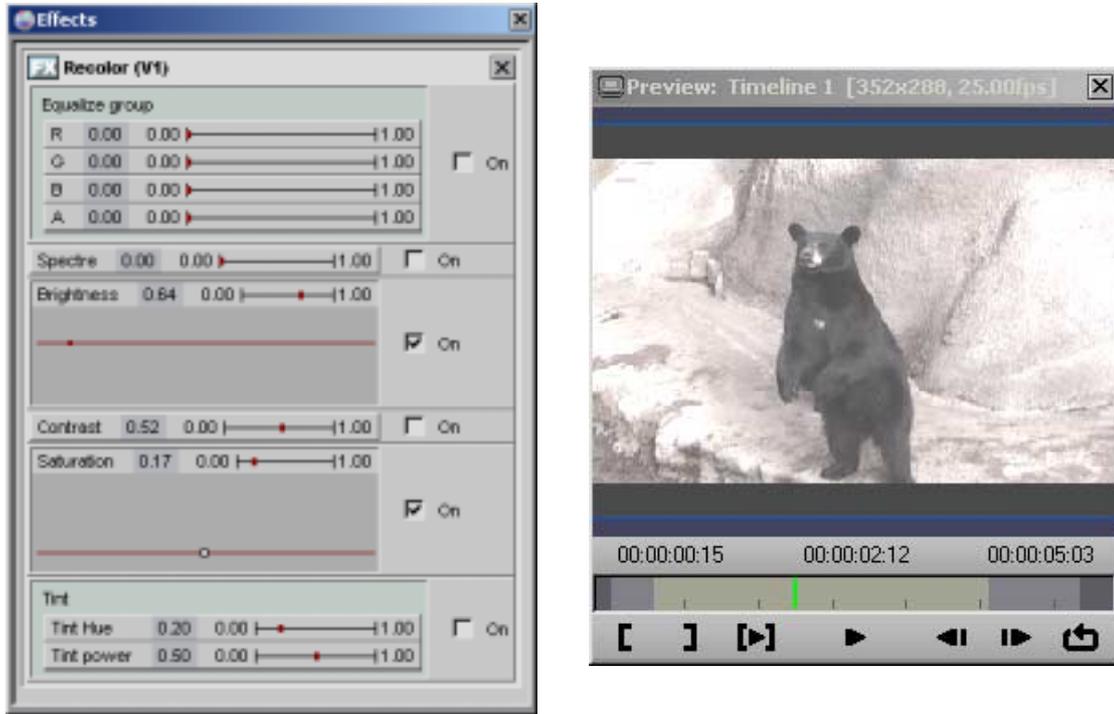
4. Generate a second video track for the **Snow** effect, because we do not want the whole clip in V1 to look like a snowstorm. Generate a new video track (**V2**) by pressing the right mouse-button in the **Timeline** window. Choose the **Add video track** option from the list.

5. Switch to the **Effects** pane, and open the **Filters** folder. Select the **Snow** effect under **Weather** and drag it in track **V2**.
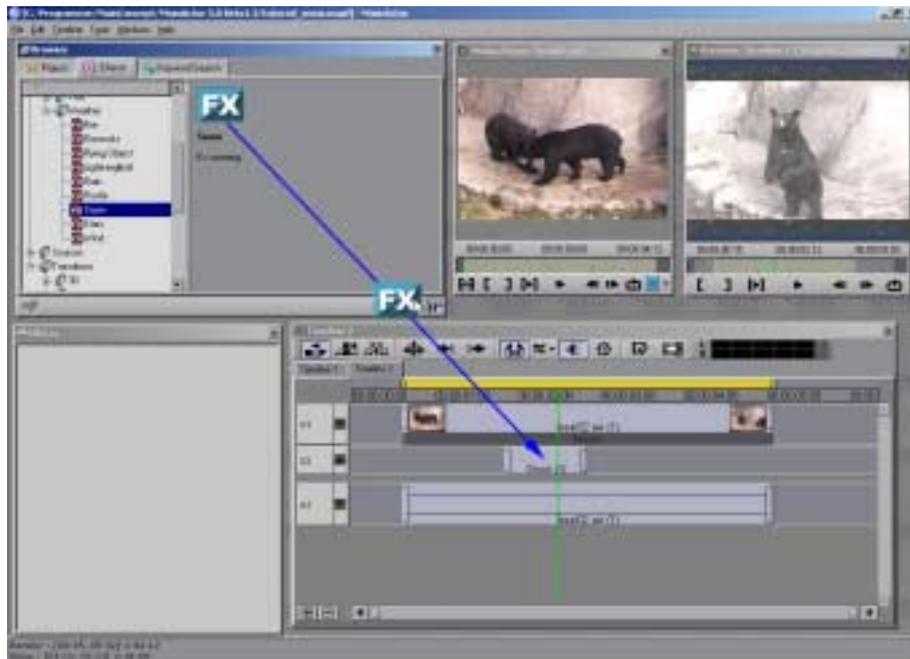
We want to extend the **Snow** effect in **V2**. For that reason, activate the effect's lever, and drag it to the desired length, as shown in previous tutorials.

6. As you can see in the **Preview** window, we have to adapt the clip to the correct Timeline resolution, because the video shows black bars at the top and at the bottom of the picture. Therefore, double-click the video stream in **V1**, so that its settings are transferred into the **Effects** window. Under **Resolution** choose the option **Resize to current resolution.** You can see the step's result in the **Preview** window.
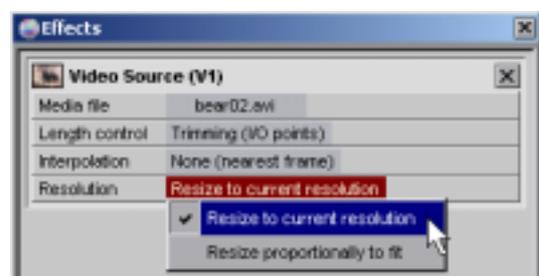
7. We want to edit the **Snow** effect now. Double-click the effect in **V2**, in order to copy its settings into the **Effects** window. Adjust the preferred settings until you achieve a satisfactory result. For our example the **Snow** effect parameters and the **Preview** window looked like as follows:
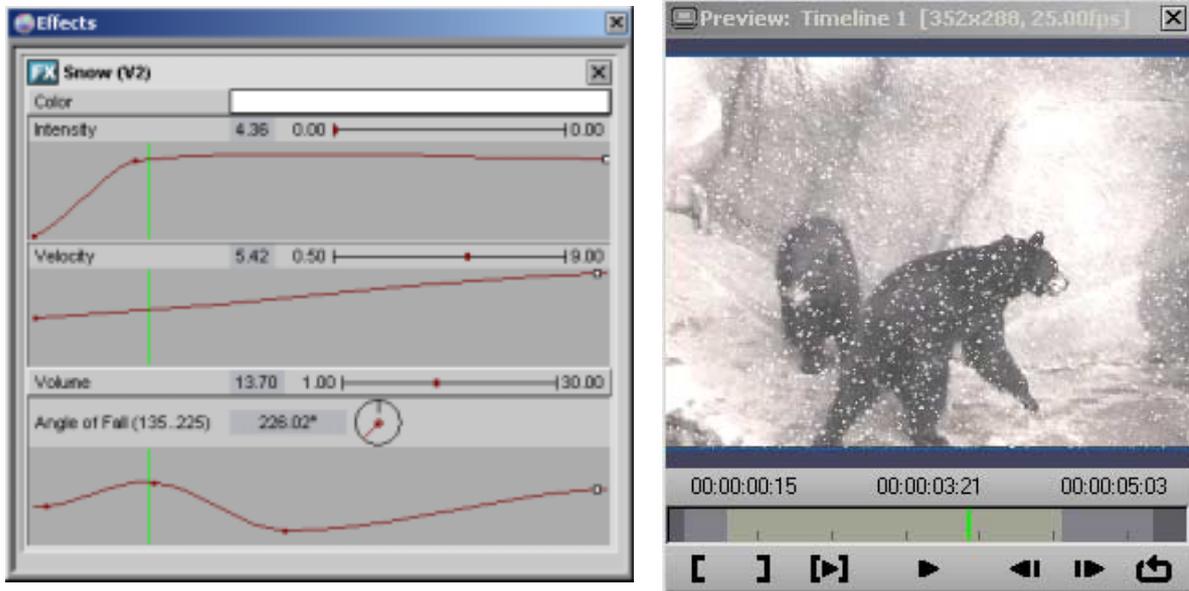
8. Congratulations! You have finished another project. Maybe you try a video on a rainy day with the **Rain** effect next time.

Stars:

This effect generates stars or starfields for your still images or video clips.

Under **Color** you define a single color for the stars, or you change their color over time as shown in the screenshot on the right.

Intensity enables you to specify the stars' frequency in your source material. The value can be changed over time, but it is also possible to set a constant value.

Under **Velocity** you set the strength of the stars' motion. You have the same options for adjusting this parameter as mentioned above.

Shape of Stars specifies the appearance of the stars. The value range is 1 ... 9.
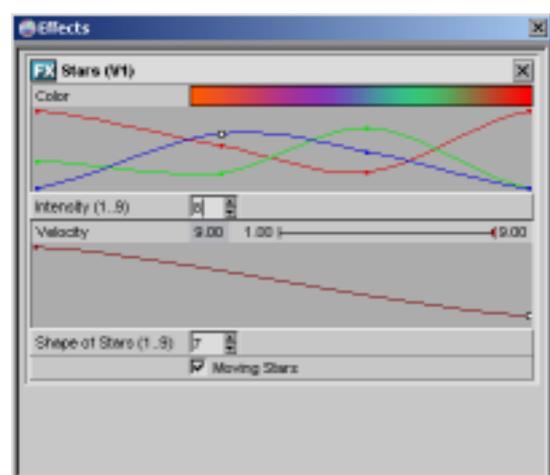
The **Moving Stars** checkbox allows you to animate the stars. If the checkbox is ticked the stars will move.

Wind:

This effect lets the picture look like as if it is put into a wind tunnel.
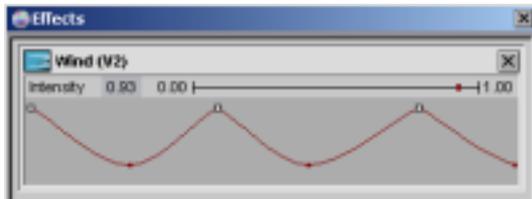
You only have one parameter here. The option **Intensity** is self-explanatory. It specifies the range of distortion. Use the slider to set the value for the effect or enter it manually. It is also possible to change the intensity of the effect over time by defining new keys in the polydiagram.

Sources

In the following paragraph we will introduce several sources of MainActor v5 and explain their settings in detail. The sources are used as individual clips, i.e. they do not require any input source. We also present you a brief example for some of the sources so you become familiar with its parameters. You can edit their settings by double-clicking them so that the individual options are copied to the **Effects** window.

Clouds Generator:

This source generates a sky with clouds. It requires no input source.

Color A and **Color B** specify the two colors of the sky as well as the clouds. It is possible to select a single color, and to change the colors for the sky and the clouds over time.

Opacity A and **Opacity B** specifies the transparency of the clouds and the sky. For example: when you place this effect on a video and set the slider to a lower value, you can see parts of the clip as well as the cloudy sky. You can define a constant value here, or change the value for the opacity over time.

Mesh Size enables you to determine the quality of the effect. Adjusting the parameters results in a clouds' change in number, volume and size. The value range is 1 ... 9.

The option **Random Seed** is an easy-to-use generator which allows you to change the appearance of the sky and the clouds at random. Simply enter a number or use the arrow controls on the right of the value box to generate a different cloud style.

The option **Dimension** tunes the dimension and mesh size. By using the slider you specify the clouds' level of detail. This option has an influence on both the number and the volume of the clouds, too. You can specify a constant value or generate new keys for changing the effect over time.

The **Power** option controls the power of the background. Higher settings increase the background strength, and weaken the clouds at the same time. You can specify a constant value or generate new keys for changing the effect over time.

The **Number of Periods** control enables you to set the number of motion cycles the clouds will go through. It has also an influence on the speed of the clouds.
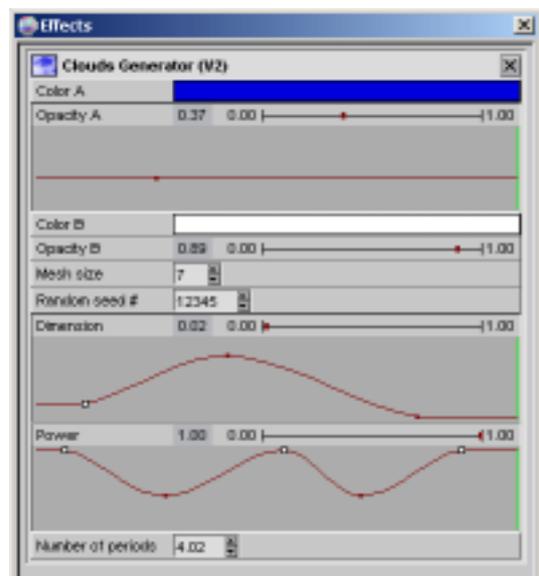
Flame:

This source generates a flame in the middle of the screen.
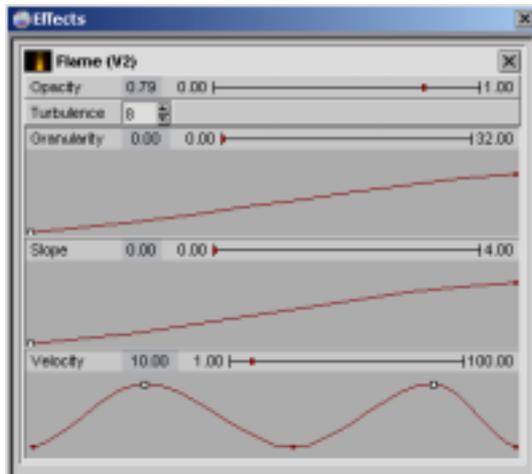
Under **Opacity** you specify the transparency of the flame. It is possible to enter or adjust a constant value, or change the value for the source over time by generating new keys and editing them.

Turbulence enables you to determine the flame's movement and animation speed. Use the controls to specify the value or enter it manually.

Granularity determines the quality of the flame. A higher setting creates a more detailed flame. You can define a constant value or change it over time.

The option **Slope** determines the height of the flame. A side effect is the increase of color and volume. You can define a constant value for this parameter or change it over time.

Under **Velocity** you set the strength of the flame's motion. It is possible to define a constant value here as well as to generate new keys so that the source will be changed over time.

Gradient:

This source generates a two-color gradient defined by the user. This process can also be done over an input image. The **Gradient** source displays a transition between two colors. It offers a lot of different parameters.

You can enter a constant value for nearly every option here. It is also possible to change the source the parameters over time by defining new keys and generating curves.

Angle defines the gradient's angle and direction. Use the dialer or the polydiagram to specify the desired angle. It is also possible to enter the number of **Turns** and the **Value** manually by clicking the value display under this option.

Color1 and **Color2** let you specify two gradient colors.
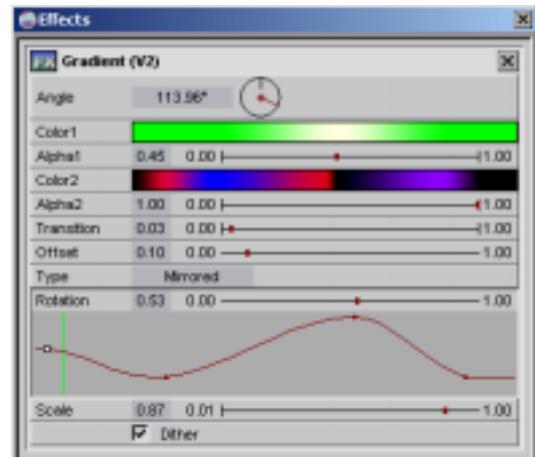
The options **Alpha1** and **Alpha2** allow you to set the alpha channels for the previously chosen colors.

Transition controls the gradient's transition strength. The higher you set the value for this option, the larger the gradient appears on the screen.

The option **Offset** determines the gradient's distance from the center of the picture.
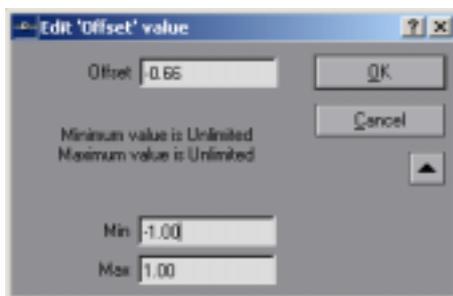
When you click the value box of this option, the **Edit 'Offset' value** dialog box appears. Here you can change the minimum and maximum value for this option. The default setting only allows you to move the gradient to the right. If you enter the value *-1.00* for **Min** it is also possible to move it to the left. Enter a negative value manually or use the slider to place the gradient on the left.

The drop-down menu **Type** allows you to choose a specific gradient type. The option offers four different types: **Linear, Mirrored, Radial** and **Circular**.

Under **Rotation** you animate the gradient by generating new keys and turning the line into a curve. A constant value defines the gradient's position in the clip.

The **Scale** option controls the surface area of the gradient.

The **Dither** checkbox controls the quality of the gradient.

Noise:

When you place this source on a track, you see only noise on the screen as if there is no TV channel available or as if there is an interference right now. The **Noise** source offers one additional setting.

The **Opacity** option enables you to work with the alpha channel. You can enter a constant value here or change it over time.
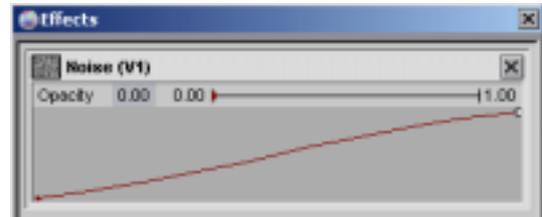
Tutorial - Noise:

In this brief tutorial we want to show you how to add an artificial noise to a video. The result is that your clip looks like your TV has an interference and the channel is hardly visible.

1. We assume, that you have already added a clip to track **V1**. After that, we have to generate a second track, because we don't want the interference effect to last the whole clip. Move the cursor into the **Timeline** window, and press the right mouse-button. Choose the option **Add video track** from the appearing list.

2. Now switch to the **Effects** pane of the Browser. Open the **Sources** folder and drag-and-drop the **Noise** effect directly in **V2** under your first clip in the Timeline.
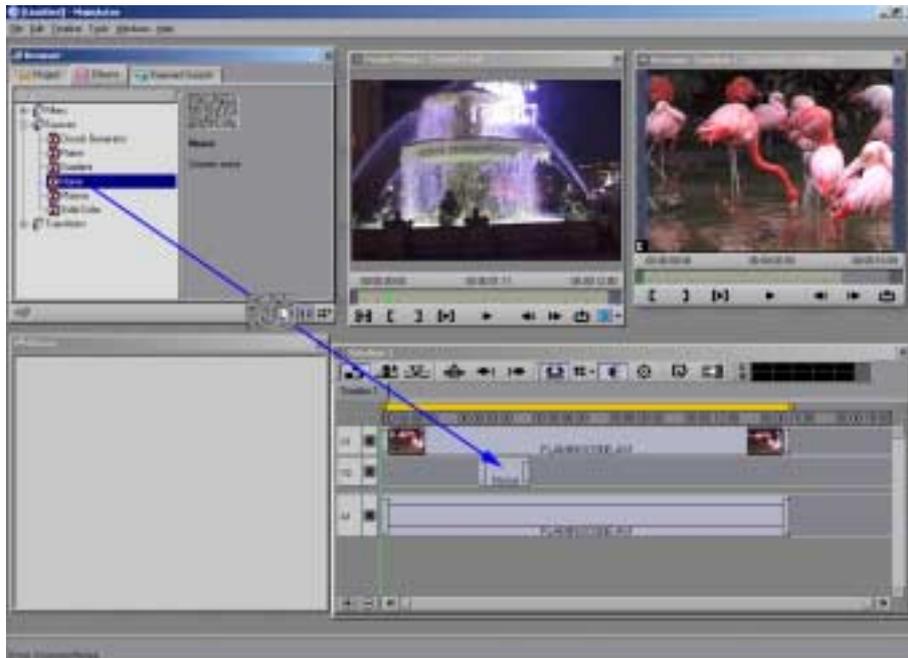
Now you have the opportunity to extend the **Noise** source in **V2**. Activate one of the levers, and drag the source to the desired length while holding the mouse-button. If necessary, you can move the complete clip to another position after you have selected it.
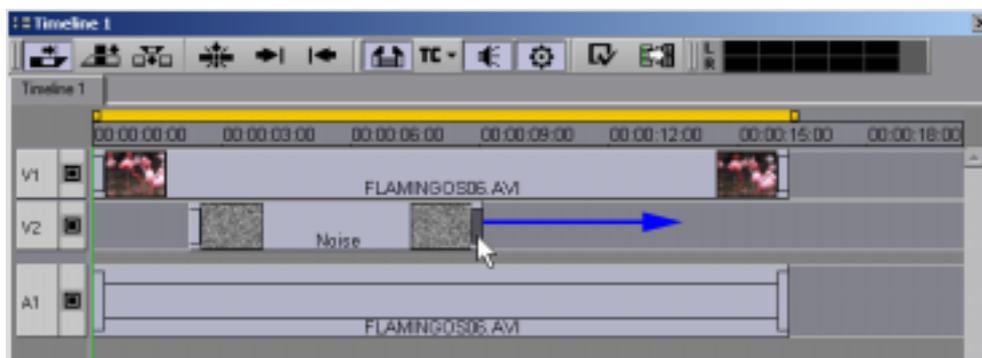
3. As we said in the introduction to this tutorial, we want to see our clip through a television interference. For that reason, we need an additional effect: the **Overlay** filter. Switch to the **Effects** pane and open the **Filters** folder. Place the **Overlay** effect from the **Standard** folder directly on the **Noise** clip in **V2** as shown in the screenshot below.
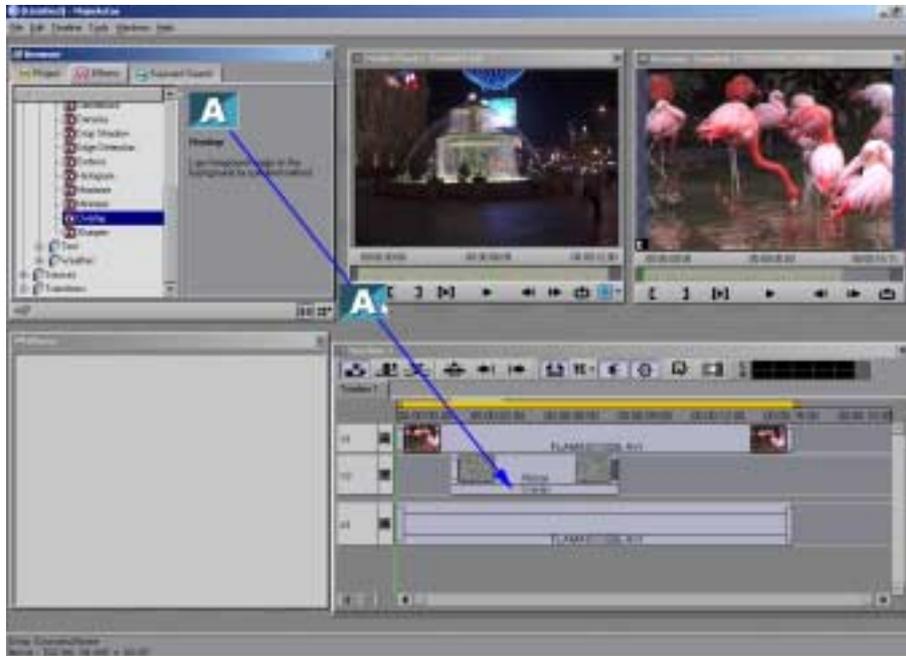
4. Double-click the **Overlay** effect in **V2**, so that its settings are copied into the **Effects** window. We want to fade in and fade out the interference. We will explain the necessary settings in a moment.

At first, open the polydiagram for the **Opacity** option by clicking the corresponding heading. We have to generate three more key because we want to edit this setting over time. Therefore, move the cursor onto the line and press the mouse-button while holding the *Shift*-key. Repeat this task two more times. Now you have to drag the first and the fourth key to the bottom position at the

beginning and end of the line. Now select the two keys in the middle of the line by clicking them while holding the *Ctrl* key. As you can see in the screenshot, both keys are selected. Now you can drag both keys upwards at the same time. The higher the value, the less you can see from the original clip. We recommend playing around with this parameter until you obtain a satisfying result.
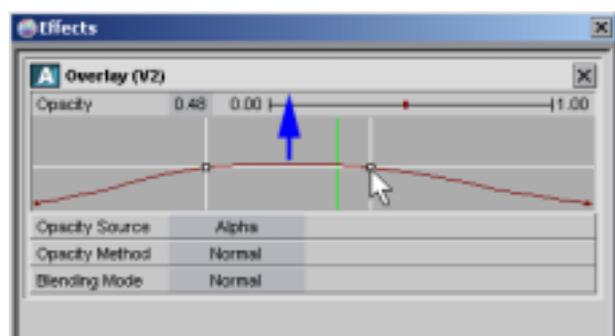
For our **Noise** tutorial the interface looked like this:
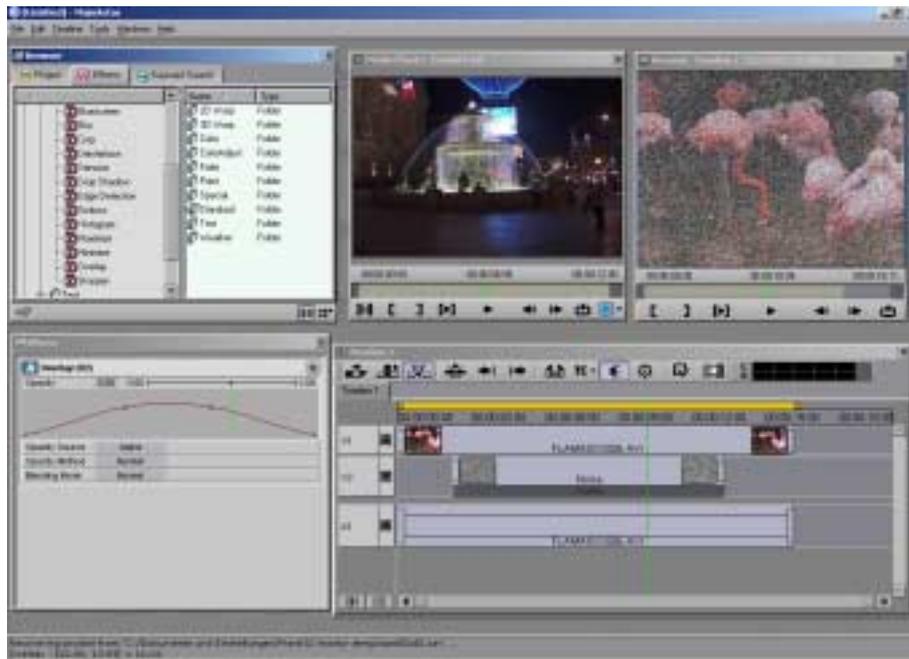
Plasma:

This source produces a plasma effect. The **Plasma** is animated and in constant movement.
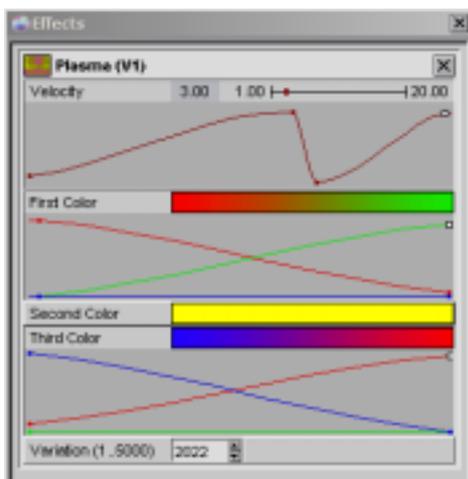
Velocity sets the plasma's movement speed. You can enter a constant value here or change it over time.

The plasma field consists of three colors. Under **First Color**, **Second Color** and **Third Color** you can select the preferred colors for your source. It is possible to choose a single color or to change the colors for the different options over time by generating new keys.

The option **Variation** enables you to choose a specific plasma type. Use the controls to set a plasma type. The value range is 1 ... 5000.

Sine Audio Generator

Using this generator you produce a sine audio sound. It is possible to change the frequency and the volume here.
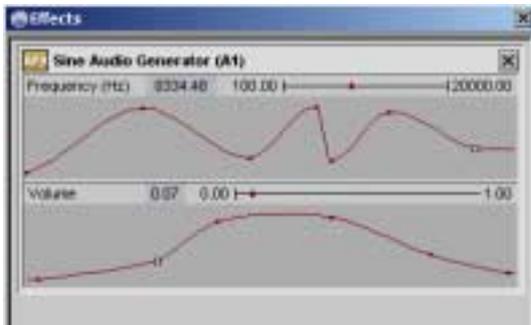
The option **Frequency (Hz)** enables you to change the frequency of the sound. You can enter a constant value here or edit it in a polydiagram over time.

The **Volume** function is self-explanatory. You can enter a constant value or edit it in a polydiagram over time, too.

Solid Color:

This source simply creates a single colored clip. It is also possible to change the color of the background over time.

Color enables you to select the desired color for the source. Click the color bar, and choose your favorite color in the appearing window. In the polydiagram you have the opportunity to change the color over time.

The option **Alpha** lets you adjust the alpha channel. It controls the different levels of transparency so that you can specify to what degree the background will be visible.
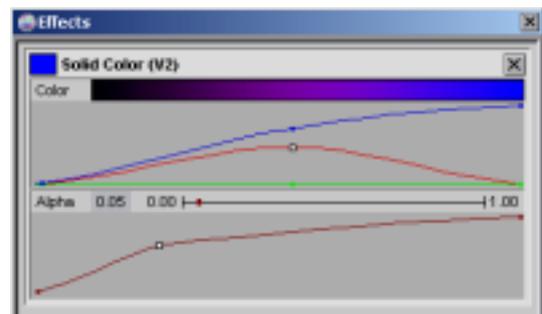
Test Pattern Generator:

The **Test Pattern Generator** source creates pictures, which look like TV test pattern.
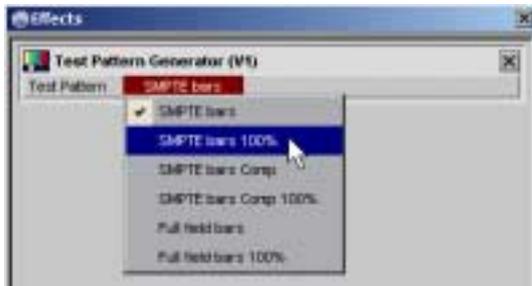
The drop-down menu **Test Pattern** offers several default test pictures you can add to your own videos.

Transitions

MainActor v5 offers numerous transitions. It would be useless to introduce every transition and explain all their different settings in detail. In this chapter we want to give you a general survey of the program's transitions and their parameters. We will explain you the common settings of a transition on the basis of three examples. Most of the parameters are self-explanatory in fact, and the transition's preview gives you a first impression of it.

The main folder **Transitions** contains several subfolders which include the actual transitions you can use for combining clips. The different folders are: **3D**, **Dissolve**, **Iris**, **Push**, **Slide**, **Special**, **Stretch**, **Wipe** and **Zoom**. We recommend to have a look at the different transitions and to play around with them.

1. The first transition is **Origami Unfold**. We have taken it from the **3D** transitions folder. It offers numerous parameters which are typical for a lot of transitions.

   Transition specifies from which image (clip) you want to change to the other: **Image 1 > Image 2** or **Image 2 > Image 1**.

   X-division and **Y-division** enables you to split particular transitions on the x- and/or y-axis so that the effect can be seen on the screen several times. An example is that instead the original two vertical doors six appear on the screen now. You find this option often in the **3D**, **Slide** and **Wipe** folder very often.
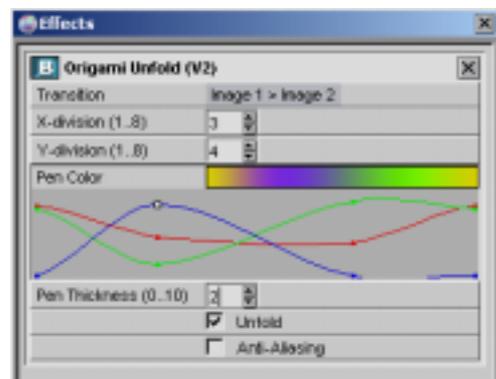
   Pen color specifies the color of the outlines that surround certain elements, items and objects of a transition. You can define a constant color or change it over time by defining new keys in a polydiagram. You find this option especially in the **3D**, **Slide** and **Wipe** folders. Sometimes you can also define the color of the background.

   With **Pen thickness** you specify the thickness of the above mentioned outlines.

   The checkbox **Unfold** allows you to specify whether the picture of the next clip unfolds or folds.

   The checkbox **Anti-aliasing** activates the anti-aliasing for better quality.

   A lot of transitions offer different checkboxes which enable the user to activate and disable additional options, e.g. if the transition is applied clockwise or counterclockwise, if the picture gets dark or light, if a door open or closes etc.

2. The second transition is **Corner Zoom** taken from the **Zoom** folder. You find some typical settings here as well.

The options **Transition**, **Pen color** and **Pen thickness** we have already explained above.

The drop-down menu under **Zoom** specifies whether the next clip is **Zoomed in** or **Zoomed out**.

The drop-down menu under **Corner** specifies the direction from where the new clip is zoomed in or out. The options are **top left**, **top right**, **bottom left** and **bottom right**. For some transitions this option is called **Direction**.
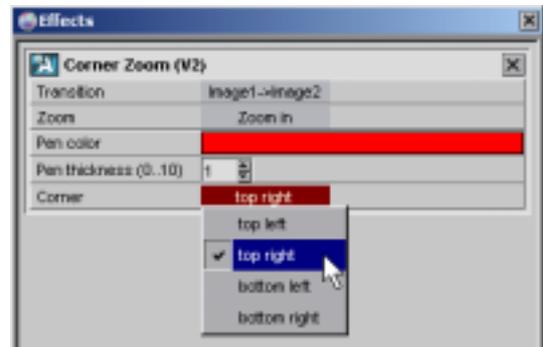
3. The final transition is **Fractal** taken from the **Dissolve** folder. Here you can adjust most parameters using keys in different polydiagrams.

We have already explained the meaning of the **Transition** option above.

Under **Opacity** you set the transparency rate of the fractals. It is possible to enter or adjust a constant value, or change the value for the source over time by generating new keys and editing them.

Roughness specifies the granularity of the whole fractal. If defines whether the fractals are smooth or coarse-grained. You can create curves with new keys here to change the option over time.

Spectrum defines the strength of the gradient at the fractal's borders. You are able to adjust smooth and hard borders here. In the poly-diagram it is possible to change the parameters over time.

Under **Zero Line** you can specify the visibility of clips connected by the transition. It is possible to compare the functioning of this option with a mountain. The higher the volume the more you see from the next clip, i.e. as if you would only see different peaks of several mountains, and the rest would be covered in mist.

With **Variation** you specify different types of fractals, i.e. you choose another appearance for them here.
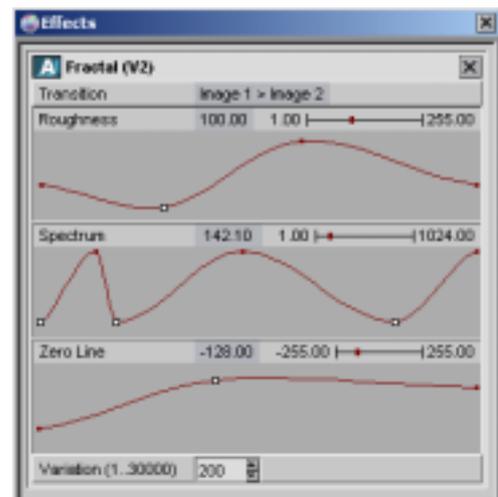
Audio Effects

In this chapter we want to introduce the different audio effects which come with MainActor v5. They can be directly applied to a complete audio stream/clip or to parts of a audio clip/stream. In general, audio effects are treated like video effects.

Delay

Chorus:

The **Chorus** effect is a non-recursive echo which also allows the modulation on the individual echoes.
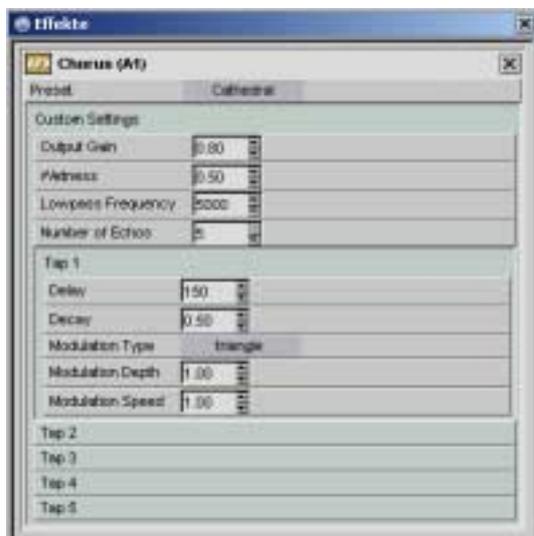
In the drop-down menu **Preset** you find three settings which modify the audio effect: **Open Room**, **Cathedral**, and the default parameter **Use Custom Settings**.

Under **Output Gain** you specify the gain value of the output audio.

The **Wetness** option makes the audio of a clip shaky.

The **Lowpass Frequency** option is self-explanatory.

Under **Number of Echoes** you define the number of echoes which will be heard in the clip.

Under **Tap1-5** you have the opportunity to modify the individual echoes:

The **Delay** option specifies the delay of the echo.

The **Decay** option specifies the decay of the echo.

The drop-down menu **Modulation Type** allows you to choose a particular modulation. The available options are: **none**, **sine**, **triangle** and **square**.

The **Modulation Depth** option defines the depth of the previously specified modulation.

The **Modulation Speed** option defines the speed of the previously specified modulation.

Echo:

The **Echo** effect creates an audio delay and adds depth as well as atmosphere to the audio.

In the drop-down menu **Preset** you find four settings which modify the audio effect: **Metal Tube**, **Large Hall**, **Small Cave**, and the default parameter **Use Custom Settings**.

Under **Output Gain** you specify the gain value of the output audio.

The **Wetness** option makes the audio of a clip shaky.

The **Lowpass Frequency** option is self-explanatory.

Under **Number of Echoes** you define the number of echoes which will be heard in the clip.

Under **Tap1-5** you have the opportunity to modify the individual echoes:

The **Delay** option specifies the delay of the echo.

The **Decay** option specifies the decay of the echo.
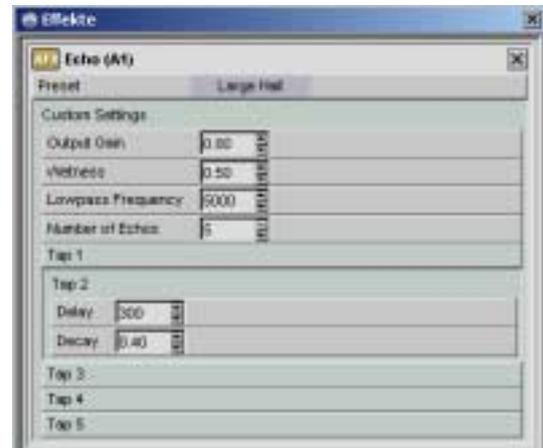
Phaser:

The **Phaser** effect is a recursive echo which allows modulation of the individual echoes.

In the drop-down menu **Preset** you find three settings which modify the audio effect: **Wobbly**, **Phased Transmition**, and the default parameter **Use Custom Settings**.

Under **Output Gain** you specify the gain value of the output audio.

The **Wetness** option makes the audio of a clip shaky.

The **Lowpass Frequency** option is self-explanatory.

The **Reverb Delay** specifies the audio's reverb time.

Under **Number of Echoes** you define the number of echoes which will be heard in the clip.

Under **Tap1-5** you have the opportunity to modify the individual echoes:

The **Delay** option specifies the delay of the echo.

The **Decay** option specifies the decay of the echo.

The drop-down menu **Modulation Type** allows you to choose an particular modulation. The available options are: **none**, **sine**, **triangle** and **square**.

The **Modulation Depth** option defines the depth of the previously specified modulation.

The **Modulation Speed** option defines the speed of the previously specified modulation.

Reverb:

Reverb is an recursive echo. The output created by the effect is fed back to the input with a certain delay.

In the drop-down menu **Preset** you find four settings which modify the audio effect: **Medium Size Room**, **Little Alps**, **Robo**, and the default parameter **Use Custom Settings**.

Under **Output Gain** you specify the gain value of the output audio.

The **Wetness** option makes the audio of a clip shaky.

The **Lowpass Frequency** option is self-explanatory.

The **Reverb Delay** specifies the audio's reverb time.

Under **Number of Echoes** you define the number of echoes which will be heard in the clip.

Under **Tap1-5** you have the opportunity to modify the individual echoes:

The **Delay** option specifies the delay of the echo.

The **Decay** option specifies the decay of the echo.

Filter

Band-Pass:

The **Band-Pass** filter enables you to remove all frequencies not inside the defined range from the audio clip.
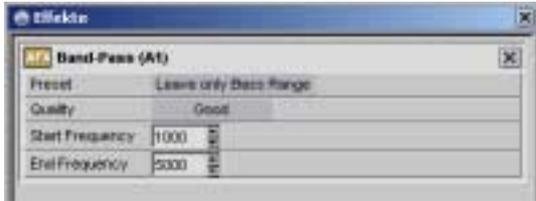
In the drop-down menu **Preset** you find different options which range will be preserved.

The drop-down menu **Quality** enables to specify the quality of the audio effect. The higher the quality setting, the more accurate is the cut in the frequency range. The available parameters are: **Medium**, **Good** and **Very Good**.

The **Start Frequency** option specifies the lower frequency range.

The **End Frequency** option specifies the upper frequency range.

Band-Stop:

The **Band-Stop** filter removes all frequencies within the defined range from the audio clip.

In the drop-down menu **Preset** you find different options which range will be removed.

The drop-down menu **Quality** enables to specify the quality of the audio effect. The higher the quality setting, the more accurate is the cut in the frequency range. The available parameters are: **Medium**, **Good** and **Very Good**.
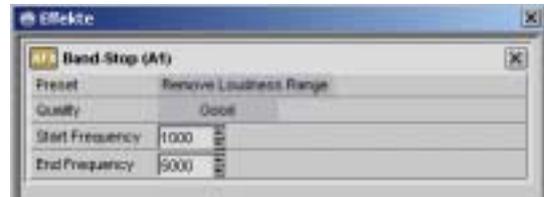
The **Start Frequency** option specifies the lower frequency range.

The **End Frequency** option specifies the upper frequency range.

High-Pass:

The **High-Pass** filter removes all frequencies below the defined range from the audio clip.
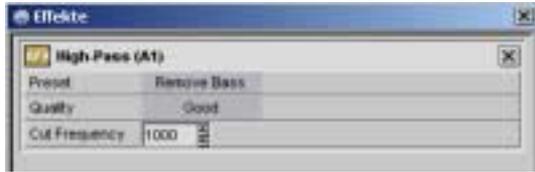
In the drop-down menu **Preset** you find different options which parts of the audio will be removed. The available presets are **Remove Humming**, **Remove Bass**, **Remove Vocals and below**, **Leave only clangor**, and the default parameter **Use Custom Settings**.

The drop-down menu **Quality** enables to specify the quality of the audio effect. The higher the quality setting, the more accurate is the cut in the frequency range. The available parameters are: **Medium**, **Good** and **Very Good**.

The **Cut Frequency** option allows you to specify the boundary of the audio's frequency.

Low-Pass:

The **Low-Pass** filter removes all frequencies above the defined range from the audio clip.

In the drop-down menu **Preset** you find different options which parts of the audio will be left. The available presets are **Leave only Humming**, **Leave only Bass**, **Leave Vocals**, **Remove clangor**, and the default parameter **Use Custom Settings**.
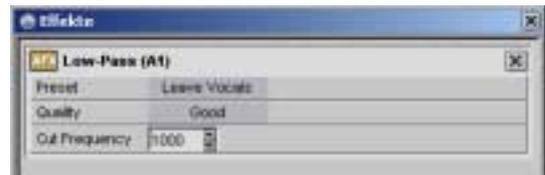
The drop-down menu **Quality** enables to specify the quality of the audio effect. The higher the quality setting, the more accurate is the cut in the frequency range. The available parameters are: **Medium**, **Good** and **Very Good**.

The **Cut Frequency** option allows you to specify the boundary of the audio's frequency.

Notch:

The **Notch** filter removes certain frequencies from the audio clip. It cuts small holes into the audio spectrum.
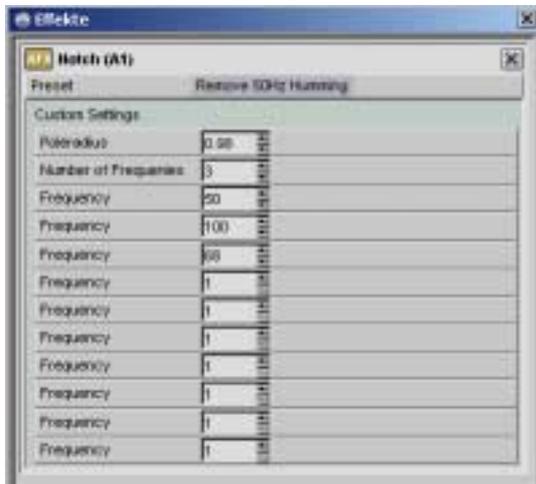
Under **Preset** you find different options which frequencies will be removed from the audio. The available presets are **Remove 50 Hz Humming**, **Remove 60 Hz Humming**, and the default parameter **Use Custom Settings**.

The **Pole Radius** option specifies the sharpness of the filter.

Under **Number of Frequencies** you define the number of frequencies which can be modified.

The ten **Frequency** controls allow you to change the value for the individual frequencies.

Simple Audio Switcher:

This audio effect enables you to change, combine or disable the left and right input audio channels. It offers two options.

The drop-down menu **First output channel** allows you to specify the left channel for the audio stream. The available options are **Off, Input 1, Input 2** and **Mix of all inputs**.

The drop-down menu **Second output channel** allows you to specify the right channel for the audio stream. The available options are **Off, Input 1, Input 2** and **Mix of all inputs**.
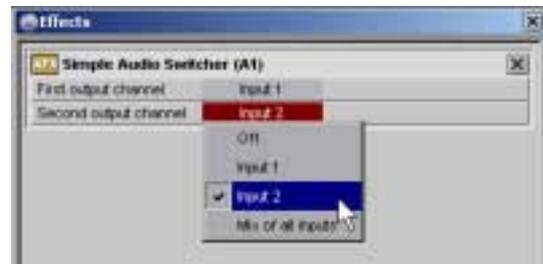
Transitions

Audio Transition:

The **Audio Transition** is placed between audio streams, but it also contains some options for modifying the video stream. The audio as well as the video stream offer a simple fade in and fade out option.
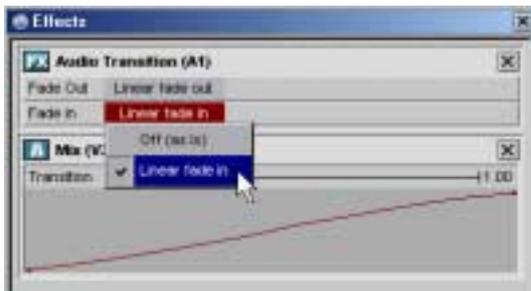
For the video stream you have only the **Mix** transition. The polydiagram under **Transition** enables you to slowly fade out and fade in the video. This is also the default setting.

For the audio stream the **Audio Transition** offers two options:

Fade out enables you to fade out the audio of a clip slowly. Alternatively, you can maintain the original clip volume. The available options are **Linear fade out** and **Off (as is)**.

Fade in enables you to fade in the audio of a clip slowly. Alternatively, you can maintain the original clip volume. The available options here are **Linear fade in** and **Off (as is)** as well.

Exporting a Project

After you have finished a project you can export it from the Timeline, i.e. you merge the current project into a single video clip (e.g. an MPEG-2 file for DVD). There are various ways for exporting a project: you can output existing clips to a DV camcorder or another device. An alternative way for exporting clips is to produce an output file in MPEG-1/2 for the common formats VCD, SVCD and DVD.

In this chapter we want to explain the various ways for exporting a project and the necessary tools which enable the user to create such output files with MainActor v5. We will also introduce the different formats for producing videos.

The Export Window

We have already explained the various settings and options of the **Export** window in previous chapters. For that reason, we only want to summarize the main aspects for rendering a project with MainActor v5.

Under **Export to** you specify the destination and the filename of the project you want to render. Use the **Browse** button to search for the desired location on your computer.

The drop-down menu **Format** offers four options: **Video + Audio**, **Video**, **Audio** and **Files sequence**. Here you specify if only the video stream, only the audio stream or if both streams will be exported. The latter is the normal case, because when using the **Video + Audio** option, picture as well as sound will be exported. The fourth option **Files sequence** enables you to export your project as a series of images.

Depending on the selected parameter the formats in the second drop-down menu vary. If you choose **Files sequence**, you can specify an image format for exporting your project. MainActor v5 offers a lot of different formats here, such as JPEG, BMP, Tiff and many more. If you choose **Video**, **Audio** or **Video + Audio** there are several different formats available as well. We will explain them later on.

According to the chosen **Format** settings the **Format Options...** button is enabled. It leads to additional menus and windows we will explain in detail later on. Here you can fine-tune the settings for the output files in order to improve their quality even more.

In the middle of the **Export** window you find a lot of settings for **Video** and **Audio.** Depending on the chosen format, these options are hidden.

Video:

The pop-up menu **Custom Settings** offers a lot of default settings for rendering a project in PAL, NTSC, HDTC etc. Simply select a setting and the rest of the parameters will be changed according to the chosen option.

Resolution (WxH) specifies the width and height of the picture.

The drop-down menu **Frame rate** enables you to define the correct frame rate for your project. This may be determined by your hardware, so we recommend reading the hardware manufacturer's documentation for further information. The standard setting for PAL is 25 fps (frames per second), and for NTSC 29.97 fps.
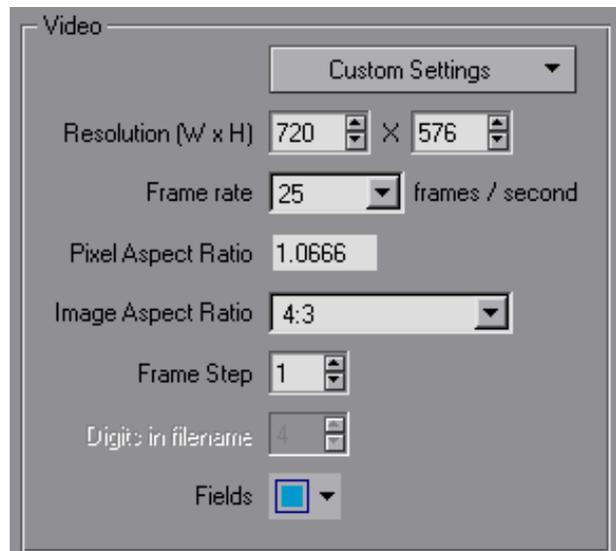
Pixel Aspect Ratio defines the ratio of width and height of a frame.

The option **Image Aspect Ratio** allows you to specify the aspect ratio, e.g. 4:3 is the standard TV format, 16:9 is widescreen format. You also find some more parameters here.

Frame step indicates whether MainActor shall render all frames (represented by the parameter one), or skip frames. This option is useful for quickly producing test render output by deliberately skipping frames.

The option **Digits in filename** offers specifications for exporting multiple files. For example, when you choose four here, the files will be exported as "animal0001", "animal0002", "animal0003" and so on. If you choose zero here, MainActor v5 generates files like "Wedding1", "Wedding2", "Wedding3" etc. It is useful when you do not want to change the filename each time.

The blue button next to **Fields** allows the user to set the correct field order: **No Fields, Upper Field first**, **Lower Field first** and **Deinterlace**. This setting should match the field order of the source video.

Audio:
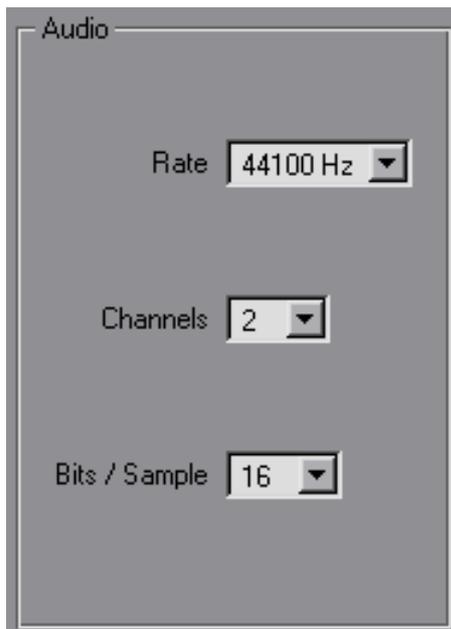
The drop-down menu **Rate** enables you to change the frequency of the audio stream.

Under **Channels** you specify whether your project will be exported in Mono (1) or Stereo (2).

In the drop-down menu **Bits/Sample** you can select the desired audio bitrate.

The **Options** section offers several checkboxes which include more functions for exporting your clips:

In the **Timeline** window, use the yellow line for specifying the segment of your project, you want to render. It is possible to change the yellow line's length as well as its position above the Timeline, so that only parts of your project will be rendered.
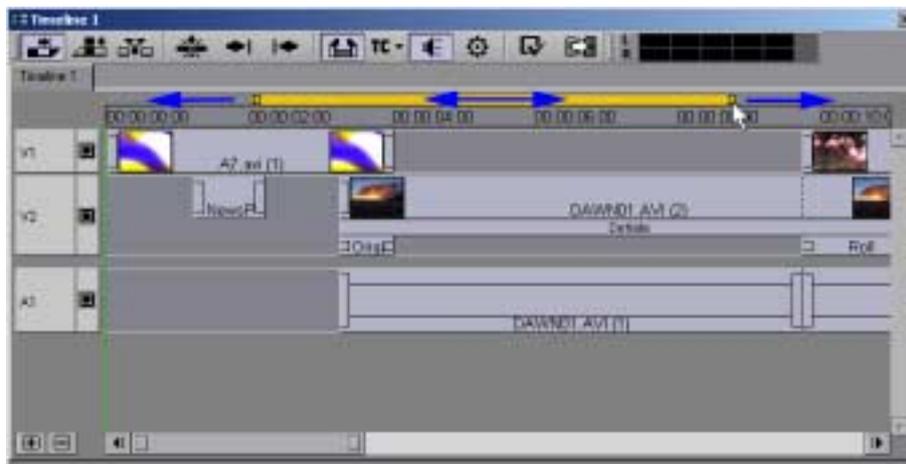
When you enable the checkbox **Export yellow I/O segment only** in the **Export** window, only the part of your project which is covered by the yellow line will be rendered. Otherwise, the complete Timeline will be exported.

The checkbox **Import exported clip to Browser** specifies whether the exported file will automatically be imported into the browser of MainActor v5 or not.

Using the option **All audio channels are mixed (the same)** allows you to mix all audio channels to one channel. This particular channel distributes the audio to all output channels. If there is only one output channel nothing happens at all.

When you enable the checkbox **Separate .wav file for audio** automatically generates an additional audio file as well.

Ticking the checkbox **Do not use Smart Rendering** disables smart rendering, so that it is not used for exporting a project.

The two buttons at the bottom of the **Export** window enable you to save and load user defined presets. After you have created a user defined setting, press the **Save** button so that it is added to the **Profiles**' list. In the following window you can enter a new name for this setting or accept the default one (see screenshot on the right). Confirm with **OK**. When you want to use this setting in the future, simply choose it from the **Profiles** pop-up menu.
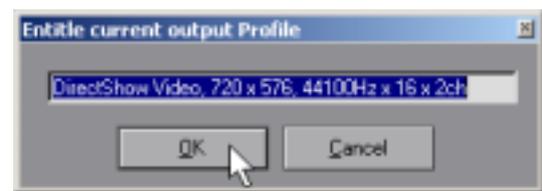
When you export a project, sometimes the source material might be corrupted or another problem can occur, so that MainActor v5 aborts the export process. In this case, the following window appears on the screen:
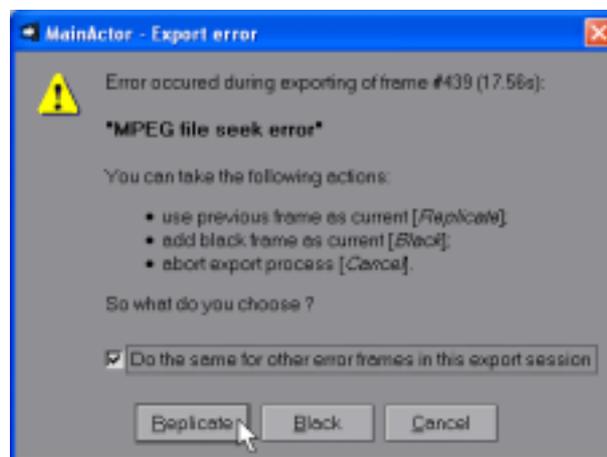
Here you can decide what MainActor should do when an error occurs:

Replicate uses the previous frame instead of the corrupted one, i.e. the program uses the last frame which is okay.

Black inserts a black frame for the corrupted one.

Cancel stops the export at the current position where the error has occurred.

Ticking the checkbox applies the selected options for further errors as well, so that you do not need to remain at the computer.

DV AVI Type 1

When you choose the format DV AVI Type 1 there are further format options available as well. The corresponding button is enabled when you chose the above mentioned format.

Under **Video Mode** you specify the appropriate video standard for the DV output file: PAL or NTSC.

The **Fields** option allows you to define the correct field order. The available options are **No fields (progressive), Upper field first** or **Lower field first**.
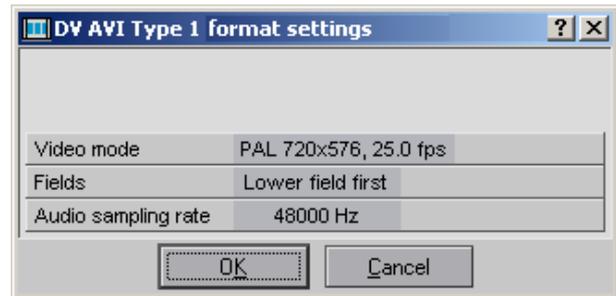
The drop-down menu **Audio Sampling Rate** enables you to choose the appropriate audio frequency for your output file.

DV AVI Type 1 Multifile

This option allows you to create DV AVIs Type 1 as multifiles. Simply select **DV AVI Type 1 Multifile** under **Format**. It is useful for specifying the size of segments that will be created during long video exports. MainActor v5 automatically splits the AVIs into multiple sequences to bypass file size limitations that are imposed by certain Windows configurations. If you plan to archive the produced video after completing a project, you might want to choose a split size that will fit on the type of disc you plan to use for archiving, for example 700-megabyte CD-ROMs.
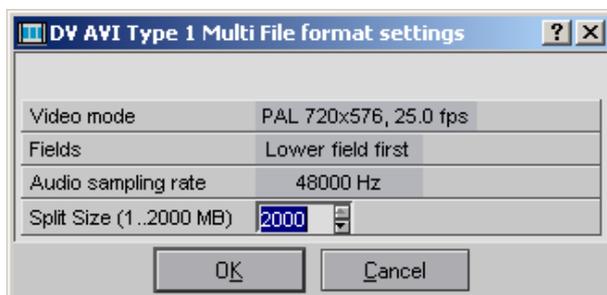
Under **Video Mode** you specify the appropriate video standard for the DV output file: PAL or NTSC.

The **Fields** option allows you to define the correct field order. The available options are **No fields (progressive), Upper field first** or **Lower field first**.

The drop-down menu **Audio Sampling Rate** enables you to choose the appropriate audio frequency for your output file.

Under **Split Size** you can freely specify the desired file size for the export process. Use the arrow up/down buttons to define the desired value. You can enter a value between 1 MB and 2000 MB.

DV AVI Type 2 (max. 2 GB)

When you choose the format DV AVI Type 2 there are the same format options available as for Type 1. The corresponding button is enabled when you chose the above mentioned format. The format DV AVI Type 2 is not used very often and is rather seldom in video editing.

Under **Video Mode** you specify the appropriate video standard for the DV output file: PAL or NTSC.

The **Fields** option allows you to define the correct field order. The available options are **No fields (progressive), Upper field first** or **Lower field first**.

The drop-down menu **Audio Sampling Rate** enables you to choose the appropriate audio frequency for your output file.
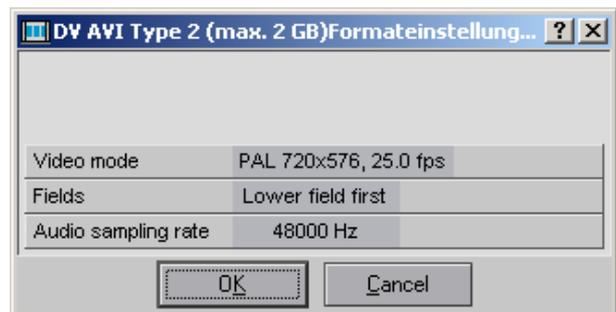
When you export a project with this DV AVI Type 2 option, the render process will stop when 2 GBs are achieved, i.e. the rest of the project will not appear in the exported video.

DV Dif

A further format for exporting your projects is **DV Dif**. DV Dif is a raw format, i.e. all frames in your video are connected one after the other without any information (in contrast to DV AVI).

When you press the **Format Options...** button, a window appears which offers a **Compression type** option. The drop-down menu includes two parameters: **Standard** and **DVCPRO**. The first one is the normal standard type for compression.
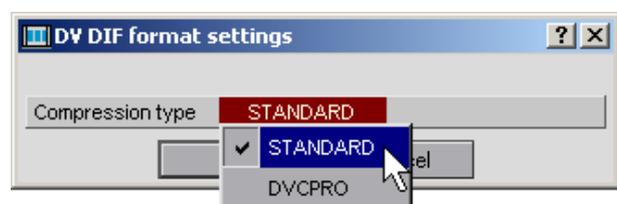
MPEG - The MainConcept MPEG Encoder

With MainActor v5 you can export your projects in MPEG-1 or MPEG-2 for the common formats VCD, SVCD and DVD, i.e. you can merge a project into a single clip. When you choose **MPEG** in the second Drop-down menu under **Format**, and press the **Format options...** button, then the following window appears on the screen. It allows you to adjust some general MPEG settings for the output file.

MPEG format settings	
MPEG Type	MPEG-2
Video mode	PAL (25.0 fps)
Frame size	720 x 576
Fields	No fields
Audio sampling rate	48000 Hz
Advanced settings...	
OK	Cancel
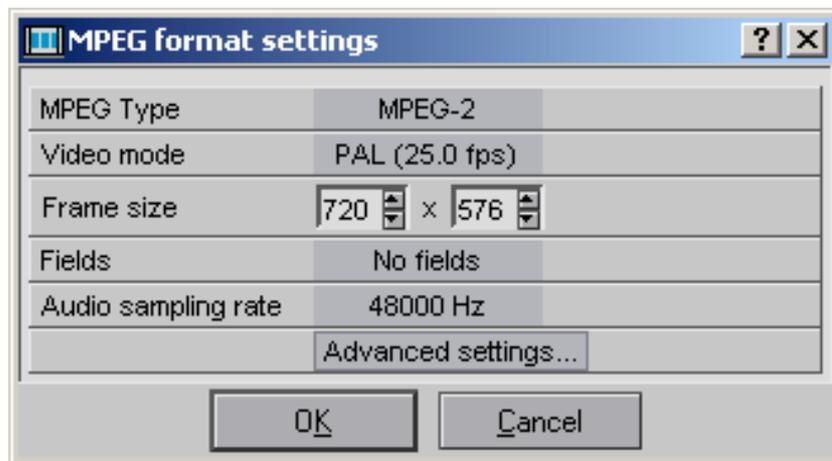
The drop-down menu **MPEG Type** offers five options: **MPEG-1, VCD, SVCD, MPEG-2** and **DVD**. Here you specify the desired output format for you MPEG file.

Video Mode defines the correct video standard: PAL or NTSC.

The option **Frame Size** lets you specify the appropriate size of the frames. Depending on the selected MPEG type you choose predefined settings from a drop-down menu or enter the value for the frame size manually as shown in the screenshot above.

Under **Fields** you set the correct field order: **No fields**, **Upper first** and **Lower first.**

The drop-down menu **Audio Sampling Rate** enables you to select the appropriate audio frequency.

Clicking the **Advanced Settings...** button, opens the advanced settings for the integrated MPEG encoder. We will explain the different panes of it soon.

When you confirm your settings in the **Format options** window, the parameters are summarized in the normal **Export** window, so that you can check them.
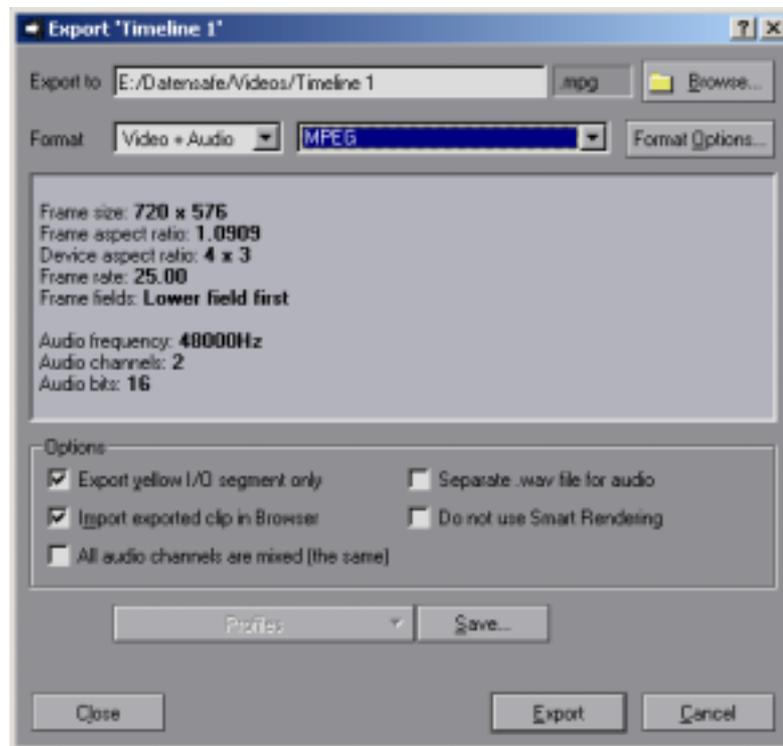
We have included the advanced settings of the MainConcept MPEG Encoder in our video-editing software MainActor v5, in order to increase the quality of your output files. This advanced interface offers even more settings, primarily for professional users in highly specialized environments.

The advanced window includes four panes: **Video Settings**, **Advanced Video Settings**, **Audio Settings** and **Multiplexer Settings**. Some options are only available when certain parameters are in effect. You can save the settings for future projects by using the **Save** button in the **Export** window. To load a previously saved MPEG setting use the **Profile** drop-down menu.

The default settings in the **Format options** window for MPEG generally offer the correct settings for high-quality results. We recommend that you only change the advanced settings if you are familiar with them and have a specific need to do so. Incorrect adjustments of these parameters can result in non-compliant MPEG files.

Before we explain the most important advanced settings in detail here some general remarks before. As mentioned above we recommend that only experienced users should modify these settings. Some of the advanced settings may be restricted by the settings

selected in previous dialogs. When encoding in the VCD, SVCD or DVD formats, it is possible to make changes to these settings such that the resulting file is not compliant for the chosen format.

The Video Settings Pane

In this window you can change the settings for **Frame rate**, **Aspect ratio** and **GOP** (Group of Pictures) **structure**. You can also make various adjustments to the bitrate.
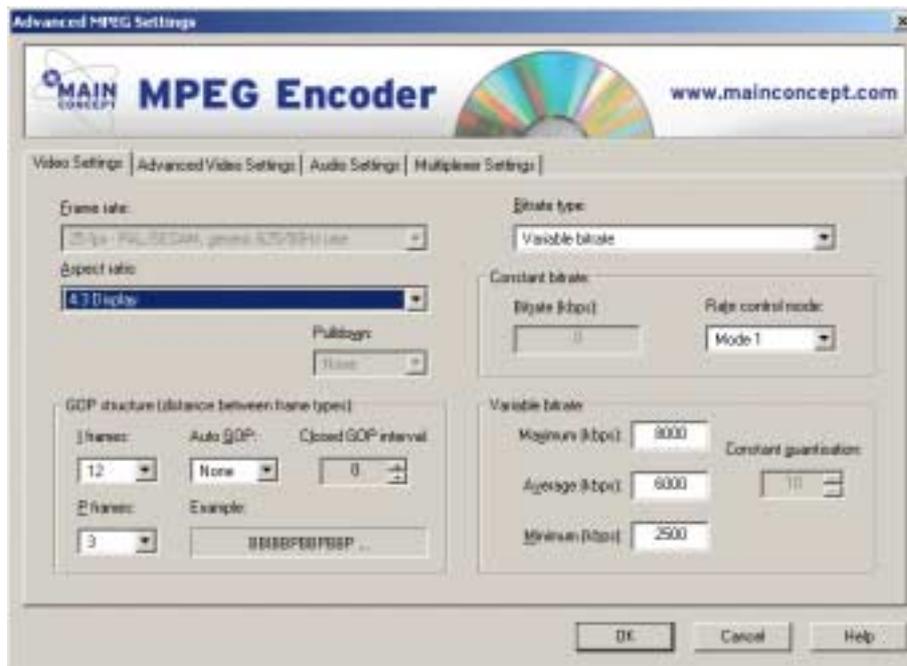
Under **Aspect ratio** you have different options:

Square Pels: Square resolution (used for PC monitors)
4:3: Standard format (TV)
16:9: Widescreen format (16:9 TV, cinema)
2.21:1: Aspect ratio

Pulldown:

The parameters under **Pulldown** convert 23.976 fps (frames per second) to 29.97 fps, or 24 fps to 30 fps, and it is supposed to be done only on progressive frame video (like film). The movie studios slow their films from 24 fps to 23.987 and then encode using pulldown to display at 29.97 fps. The video encoder manipulates the *Top Field First* (tff) and *Repeat First Field* (rff) flags to convert 4 frames (8 fields) to 5 frames (10 fields) like this:

(T = top field, B = bottom field)

frame 1: tff = 1, rff = 0 fields displayed: TB
frame 2: tff = 1, rff = 1 fields displayed: TBT
frame 3: tff = 0, rff = 0 fields displayed: BT
frame 4: tff = 0, rff = 1 fields displayed: BTB

So you get the sequence of fields: TB TBT BT BTB or grouped as frames: TB TB TB TB TB. The above would be considered **2:3** pulldown as it is 2 fields, 3 fields, 2 fields etc.

3:2 is the reverse:

frame 1: tff = 1, rff = 0 fields displayed: TBT
frame 2: tff = 0, rff = 1 fields displayed: BT
frame 3: tff = 0, rff = 0 fields displayed: BTB
frame 4: tff = 1, rff = 1 fields displayed: TB

In this case you get the sequence of fields: TBT BT BTB TB or grouped as frames: TB TB TB TB TB.

Start Time (seconds):

This option specifies the starting value of the timecode in the video stream. It is completely arbitrary; as an example one could encode 1 hour of video with the start time set to zero, then encode another hour of video with the start time set to 3600 seconds. Then when the two videos are played one after the other the timecode will be continuos between the two files.

GOP (Group of Pictures) structure:

I frames: These frames are also called Key Frames. All GOPs start with an I frame. I frames contain information for a complete picture, and can be decoded independent of any other frame. I frames are the largest (and least compressed) frames.

P frames: P frames are encoded using information from the previous I or P frame, and can only be decoded correctly if the previous I / P frame is available. P frames are smaller than I frames.

B frames: B frames are usually encoded using information from the previous I or P frame and the next I or P frame. In this case, B frames can only be decoded correctly if the previous and the next I / P frames are available. B frames are smaller than P frames. In addition, B frames can be encoded using only information from the next I / P frame but then they are larger than if they were encoded using both the previous and next frame information.

As a general rule for practical settings: The GOP size (in frames) is specified with the I frame setting and it must be a multiple of the P frame setting. When I frame is set to 1, all frames in the video will be I frames. When I frame is larger than 1, it specifies the size of the GOP, and the P frame setting specifies how often P frames occur in the GOP. If P frame is set to 1, the video will consist of only I and P frames. If P frame is larger than 1, B frames are placed between the P frames and the video will consist of I, P and B frames. Larger GOPs will yield greater compression but will possibly cause a loss of quality. We recommend using the default settings.

Auto Gop: This function always starts a new GOP when there is a scene change, i.e. the encoder sets an I frame. If you choose **None** from the drop-down menu, there will not be a scene detection. The **Fast** option is a quick method of scene detection where no VCSD happens. During the motion search the application checks, if a scene change occurs, and - if yes - the P frame is encoded as an I frame. Then the encoder starts a new GOP. **VCSD** is the abbreviation for *Visual Content Scene Detection*, which is a better way of doing scene detection. At first, the VCSD is carried out, i.e. the analysis of the frames, and then the GOP planning. It will yield a slightly slower encoding.

Closed GOP every: This value specifies how often the GOPs should be closed and is only of importance if there are B frames present in the GOPs. A value of 0 means do not close any of the GOPs, a value of 1 means close every GOP and a value of 2 means close every other GOP etc. If a GOP is closed, it can be decoded by itself. If a GOP is not closed, the first few B frames of the GOP will be dependent on the last P frame of the previous GOP and cannot be decoded correctly without decoding the previous GOP first. When a GOP is closed, the first few frames of a GOP are encoded so they only depend on the I frame in the GOP (the previous GOP is not required). This can be useful for setting "chapter" points so a player can jump to these GOPs and can start decoding immediately without having to read the previous GOP (or discarding the first few B frames).

Bitrate type:

Constant: Fixed bitrate (the relevant input prompt will be enabled if selected)

Variable: The minimum and maximum values define the bitrate range the encoder should stay within while encoding. The average value is the desired average bitrate of the video stream. The relevant input prompts will be enabled if selected.

Rate Control Mode:

Fast: An older mode, not normally used anymore.
Mode 1: Standard mode (recommended)
Mode 128: Experimental (will probably cause problems; it should only be used for testing)

Variable Bitrate:

The **Constant quality** affects the macroblock quantization value, sort of the "compression" of the macroblocks. Lower numbers yield better quality and larger files (larger bitrate results in less compression). The range is 1 ... 31; 1 is probably excessive in that the quality does not improve much but the file size increases quite a bit. A range is probably 3 ... 15 for constant quality operation. In normal VBR/CBR modes, the encoder changes the macroblock quantization value to adjust the bitrate; in constant quality mode it does not. You have to set the average bitrate to zero in order to make the **Constant quality** option active.

The Advanced Video Settings Pane

This pane offers professional settings which should not be changed if you are creating MPEG streams for VCD, SVCD or DVD. These adjustments are designed for specific, highly technical environments.
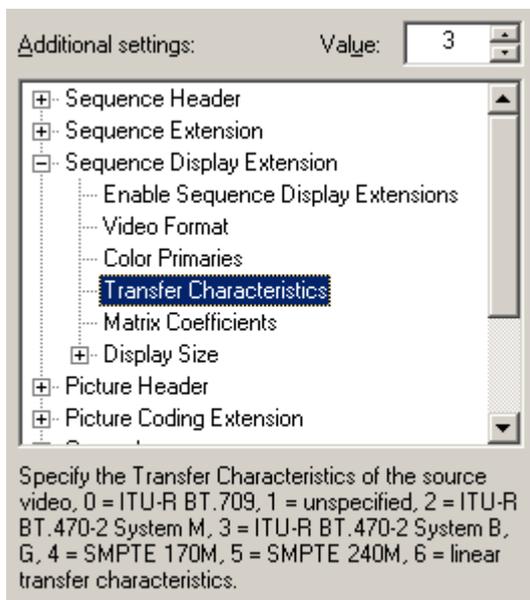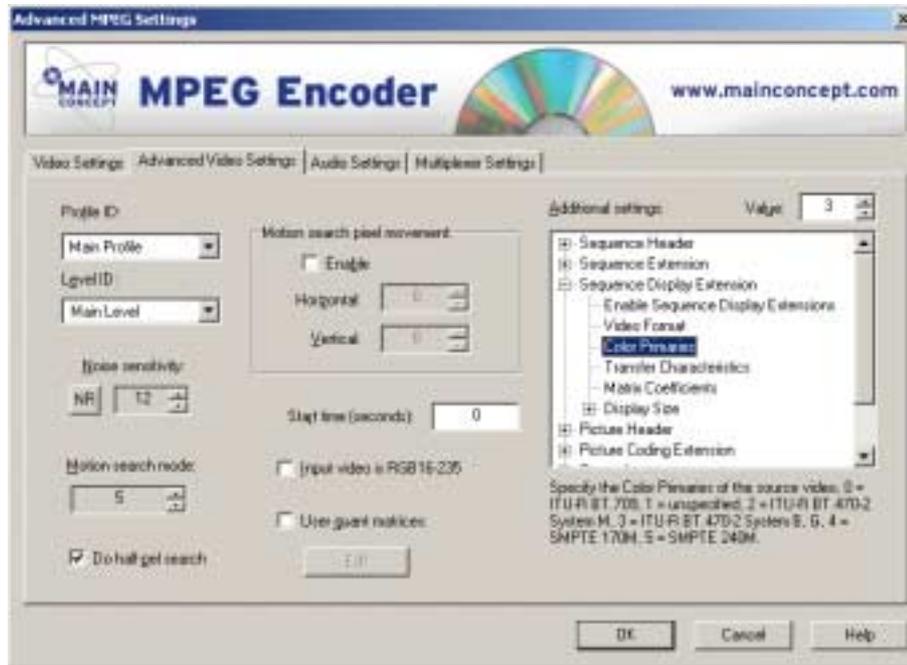
The box on the right side of this pane contains many more parameters for professional users. If you click on an option, details are listed under the box.

We highly recommend that these changes are only performed by professional users.

Here are the **Advanced Video Settings** in detail:

Profile ID:

You have three different options here: **High Profile, Main Profile** (standard setting) and **Simple Profile**.

Level ID:

You can choose between **High Level, High 1440 Level, Main Level** (standard setting) and **Low Level**.

The MPEG-2 spec (specification) allows for a large number of variations in the settings, e.g. the frame resolution can theoretically be as large as 2^{14} x 2^{14}. The **Profiles** and **Levels** just set limits on what the values of some of the other settings can be; so if a specification (like the DVD spec) says only *Main Profile/Main* or *Low Level* is allowed, the decoders can safely assume what the bounds of some settings are going to be. A DVD player does not have to account for the resolution being 2^{14} x 2^{14} because the DVD spec only allows a maximum of *Main Profile/Main Level* which only enables for a maximum frame resolution of 720x576.

Noise Sensitivity:

This option specifies how sensitive the video encoder is to noise in the source video; it does not reduce the noise in the source video at all. It sets a motion search threshold at which point the encoder will stop the search for matching blocks of pixels from one frame to another. Higher values mean low sensitivity (faster search times, less quality), while lower values mean higher sensitivity (longer search times, better quality). Typically this option is set in the 1 ... 14 range as follows:

1 ... 5 - Computer animation, VCD from DV-Source, after a line-filter or noise reducing filter (virtually no noise in the source video)

3 ... 7 - Digital video, DV-quality, Hi8-quality etc.

5 - 14 - Analog captured video, Video 8, Hi8, broadcast TV

Motion Search Mode:

The **Motion Search Mode** defines which method is used to search for pixel movement in the video stream. A higher value specifies a better method and will normally yield better quality. The practical range is 3 to 11.

User Quantization Matrices:

Each 8x8 block of pixels in the image is run through a DCT (*Discrete Cosine Transformation*) function which yields an 8x8 block of DCT coefficients. These coefficients are arranged in the 8x8 array with the lower frequencies in the upper left corner of the array and the lower frequencies in the lower right corner. The numbers of these 8x8 blocks are the results of mathematical functions performed by the encoder to represent the video in a smaller number of bits.

The quantization matrices determine the divider used by the quantization function for each DCT coefficient. Lower numbers mean the coefficient will be quantized less (better quality, closer to the original DCT value but more bits are needed), while higher numbers mean the coefficients are quantized more (lower quality but less bits are needed). The default intra matrix values are biased towards the low frequency coefficients; they are represented better while the high frequency coefficients are not represented as well. The numbers on the top left handle the low frequency regions, and the numbers on the bottom right handle the high frequency regions. The human eye is less sensitive to the high frequencies, so that region can be compressed to a higher degree; this is why the values are higher there. If the whole matrix consists of 1, there would be virtually no compression at all (but a very large number of bits). If you set all numbers of the matrix to 255, you will obtain a very bad picture because it has been compressed to such a degree that it will lead to a significant loss of quality.

When you activate the checkbox you can click the **Edit** button in order to adjust the parameters for **Matrix for Intra Block** and **Matrix for non-Intra Block**. In the following window you can change these settings.

These values must be in the range 16 ... 256, with the exception that the first entry in the intra block matrix must be 8. Intra blocks are macroblocks coded using only information from the current picture (I frames), non-intra blocks are macroblocks coded using information from the current picture and other pictures (B and P frames). If the bitrate is high you should not change the parameters. Ultimately, these values depend on the source material. If the bitrate is low you can change the parameters to get better results.
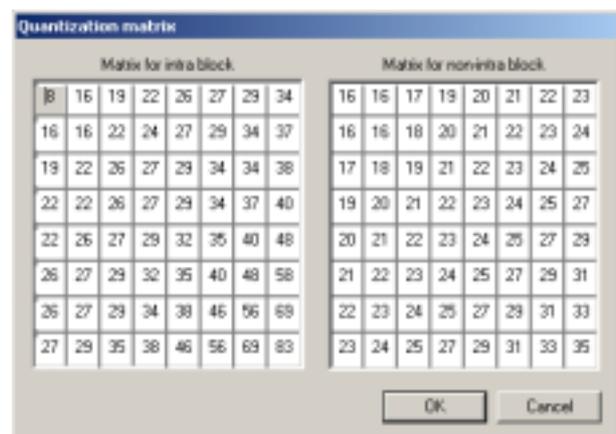
Do half-pel Search:

When this option is activated the **Motion Search** operation also looks for pixels that move only 1/2 of a pixel from one frame to the next (a subpixel search). This should usually be enabled and should only be disabled if speed is desired above quality.

Set motion search areas from pixel movement:

These settings specify the maximum movement of a pixel from one frame to the next. They are used to calculate the *Motion Search Areas*, the maximum area the encoder will search in an attempt to find a match for a block of pixels from one frame to the next. If the video has quite a bit of movement, it is useful to raise these values. Unfortunately, this also extends the encoding time.

These settings are an easy way to manipulate the *Motion Search vectors*. The motion search vectors can also be manually manipulated in the *Motion Estimation* section of the **Additional Settings** tree. The motion search vectors are different and optimized for the different frames and frame types.

Additional Settings Tree:

Now we want to introduce the different parameters in the **Additional Settings** tree. The different options are displayed in the tree. You can change the settings by using the **Value** parameter box. Depending on the setting you have to adjust the appropriate option in the corresponding tree. A short definition of the selected option is offered under the display.

Under **Sequence Header** you find the following option:

VBV Buffer size: This value specifies the size of the *Video Buffering Verifier* (VBV) buffer in KB (1024 bytes). Decoders can use this value to determine the largest buffer needed to decode the video stream. Set it to zero to have the encoder compute a value based on the video bitrate. VCD specifies 40 KB, SVCD and DVD specify 224 KB. Use the **Value** prompt in order to change the parameters. See ISO/IEC 13818-2 section 6.3.3 or ISO/IEC 11171-2 section 2.4.3.2 for more information.

The option **Sequence Extension** offers two settings:

Progressive Sequence: If set to 1 all frames in the video are progressive, if set to 0 both progressive and interlaced frames can appear in the video. See ISO/IEC 13818-2 section 6.3.5 for more information. This option is only valid for MPEG-2.

Chroma Format: Specify whether to use the 4:2:0 or 4:2:2 (high profile only) chroma format for the encoded video. See ISO/IEC 13818-2 section 6.3.5 for more information. Only the 4:2:0 and 4:2:2 formats are supported. This option is only valid for MPEG-2.

Under **Sequence Display Extension** you can edit several options:

Enable Sequence Display Extension: If set to 1, sequence display extension headers are placed in the video stream after the sequence extension headers. If set to 0, the *Video format, Color Primaries, Transfer characteristics, Matrix coefficients* and *Display Size* settings are not used or present in the video stream. Some SVCD players can have problems if sequence display extensions are present, for DVD the sequence display extension may or may not be present. See ISO/IEC 13818-2 section 6.3.6 for more information. This option is only valid for MPEG-2.

Video Format: This setting is just a flag in the bitstream to inform the decoder how the pictures were represented before encoding. If the sequence display header is not present, the decoder will assume "*Unspecified video format*". This setting does not affect the encoding process at all. It is part of the sequence display extension and is only used when the Sequence display extension setting is 1. See ISO/IEC 13818-2 section 6.3.6 for more information. This option is only valid for MPEG-2.

Color Primaries: This field specifies the x, y chromaticity coordinates of the source picture primaries. It is strictly an informative flag to the video decoder and does not affect the video encoding at all. DVD specifies a value of 2 (ITU-R BT.470-2 System M) or 4 (SMTPE 170M) for NTSC or 3 (ITU-R BT.470-2 System B,G) for PAL. See ISO/IEC 13818-2 section 6.3.6 for more information. This option is only valid for MPEG-2.

Transfer Characteristics: This field specifies the opto-electronic transfer characteristics of the source picture. It is strictly an informative flag to the video decoder and does not affect the video encoding at all. DVD specifies a value of 2 (ITU-R BT.470-2 System M) or 4 (SMTPE 170M) for NTSC or 3 (ITU-R BT.470-2 System B,G) for PAL. See ISO/IEC 13818-2 section 6.3.6 for more information. This option is only valid for MPEG-2.

Matrix Coefficients: This field specifies the matrix coefficients used in deriving luminance and chrominance signals from the green, blue, and red primaries when RGB->YUV conversion (if any) is done. DVD specifies a value of 3 (ITU-R Rec. 624-4 System B, G) for both NTSC and PAL. Currently only a value 3 is supported regardless of the setting of this field. See ISO/IEC 13818-2 section 6.3.6 for more information. This option is only valid for MPEG-2.

Display Size: These values specify a rectangle which may be used by decoders as their active display area. MPEG itself does not define what these values are actually used for, so it is up to the decoders to handle as they see fit. DVD does define uses for these values, and the values should be 720x480 (NTSC) or 720x576 (PAL). These settings are part of the sequence display extension and are only used when the Sequence display extension setting is 1. Use the options **Horizontal** and **Vertical** to specify the exact value. See ISO/IEC 13818-2 section 6.3.6 for more information. This option is only valid for MPEG-2.

Under **Picture Header** the encoder offers one more setting:

Force VBV Delay: Set to 1 to have the et to 1 to have the VBV delay in the picture headers fixed to a value of 0xFFFF. Normally this is 1 when doing VBR encoding and 0 when doing CBR encoding. When the VBV delay is 0xFFFF a different method is used to input data to the VBV than if VBV delay is not fixed to 0xFFFF. See ISO/IEC 13818-2 section 6.3.9 or ISO/IEC 11172-2 section 2.4.3.4 for more information.

The option **Picture Coding Extension** offers several additional settings:

Intra DC Precision: Specifies the effective precision of the DC coefficients in intra coded macroblocks. 10-bits usually achieves quality saturation, 11-bits can be used if the quantization is very low (the bitrate is quite high compared to the frame size/rate). See ISO/IEC 13818-2 section 6.3.10 for more information. This option is only valid for MPEG-2.

Use Frame Prediction and Frame DCT: Set to 1 to have the motion estimation and DCT (*Discrete Cosine Transformation*) computations done on both fields of a frame in the same pass, set to 0 to have them done on each field independently. Normally this should be 0 for interlaced frames and 1 for progressive frames. Setting this field to 1 will result in slight faster encoding but will yield less quality in interlaced frames. This setting can be specified independently for each frame type (I, B and P). See ISO/IEC 13818-2 section 6.3.10 for more information. This option is only valid for MPEG-2.

Quantization Scale Type: Specifies which mapping to use between the encoded quantization scale factor and the quantizer scale applied in the inverse quantization arithmetic. Set to 0 to specify a linear mapping or 1 to specify a non-linear mapping. This setting can be specified independently for each frame type (I, B and P). See ISO/IEC 13818-2 section 6.3.10 for more information. This option is only valid for MPEG-2.

Intra VLC Format: VLC is the acronym for *Variable Length Coding*. This option specifies one of two MPEG defined variable length coding tables used for intra coded blocks. Table 1 is considered to be statistically optimized for Intra coded pictures coded within the sweet spot range (e.g. 0.3 to 0.6 bit/pixel) of MPEG-2. Normally set to 1 for MPEG-2 video, this setting can be specified independently for each frame type (I, B and P). See ISO/IEC 13818-2 section 6.3.10 for more information. This option is only valid for MPEG-2.

Use Alternate Scanning Pattern: Specify one of two entropy scanning patterns which define the order in which quantized DCT coefficients are run-length coded. Set to 1 for the alternate scanning pattern or 0 for the zig-zag scanning pattern. The alternate scanning pattern is considered to be better suited for interlaced video where sophisticated forward quantization is not enabled. This setting can be specified independently for each frame type (I, B and P). See ISO/IEC 13818-2 section 6.3.10 for more information. This option is only valid for MPEG-2.

The **General** option offers two more parameters you can change:

Sequence End Code: If set to 1 a sequence end code is written at the end of the video stream (it terminates the stream). Normally this is set to 1, set to 0 if you intend to concatenate video streams together after encoding. See ISO/IEC 13818-2 section 6.3.2 or ISO/IEC 11172-2 section 2.4.3.1 for more information.

Embed SVCD User Blocks: If set to 1, user data blocks are placed in the bitstream to reserve space for the SVCD scan information data. The multiplexer then fills in the correct values when the video stream is muxed. Should only be enabled for SVCD video, disable for non-standard SVCD video.

Under **Rate Control** you find the following options:

The options **Reaction Parameter, Initial Average Activity, Initial Global Complexity Measure** and **Initial Virtual Buffer Fullness** are very complex as well as highly mathematical. These values are default to 0 and should not be changed unless advised to do so by MainConcept support.

Minimum Frame Percentage: Unused, this setting will be removed in the next version.

Pad Frame Percentage: Unused, this setting will be removed in the next version.

Motion Estimation offers the following options:

- P Frame Motion Vector
    - Forward Search Width
    - Forward Search Height

- B Frame Motion Vectors
    - Forward Search Width
    - Forward Search Height
    - Backward Search Width
    - Backward Search Height

The search width and height settings set the (half) width of the windows used for motion estimation. Here is an example of how to set these values, assuming a maximum motion of 10 pixels per frame in horizontal direction and 5 pixels per frame in the vertical direction and M = 3 (I B1 B2 P).

Table 1: Search Width and Height values

forward	horizontal	vertical	backward	horizontal	vertical
I => B1	10	5	B1 <= P	20	10
I => B2	20	10	B2 <= P	10	5
I => P	30	15			

The search window settings are +/- values, for instance if a search window value is 10, the actual search for a matching pixel is done from (x + 10, y) to (x - 10, y) for each pixel (x, y).

These values are usually set automatically by either the *Video encoder quality* sliders (**Search method** and **Search range**) or the **Motion search pixel movement** settings but can be set manually here.

The Audio Settings Pane

This pane offers professional adjustments for audio exporting.
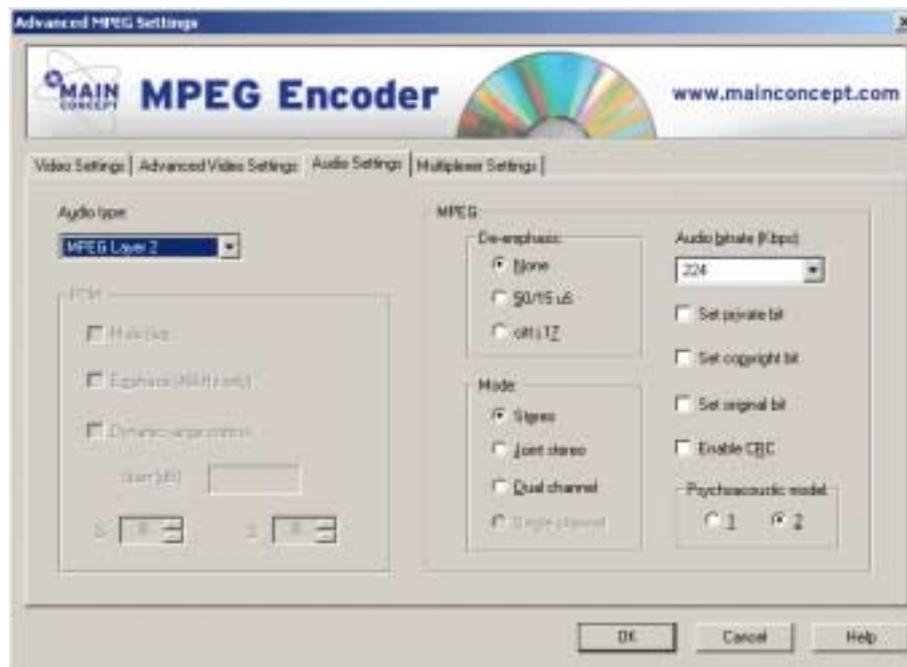
The **Audio Settings** include the following options and parameters:

Audio type:

None: If you do not want to encode audio, select none here.
MPEG-1 Layer 1: Normally not used
MPEG-1 Layer 2: Used for VCD, SVCD and PAL DVD
PCM: Used for NTSC DVD

NTSC DVDs use LPCM (Linear PCM) audio (or AC3) as the standard audio type instead of MPEG Layer2. LPCM is an uncompressed audio format, which offers higher quality but it also uses far more of the total bitrate (consequently less bitrate is available for the video stream). PCM is only available for MPEG-2 type streams, and is seldom used for PAL DVDs.

MPEG:

Under **De-Emphasis** you find three options: **None, 50/15 uS** and **citt. j 17**.

This is a flag to the player specifying what kind of de-emphasis to perform on the audio. DVD and SVCD specify **None**, VCD can be either **None** or **50/15 uS**.

Mode:

Stereo: Standard stereo

Joint Stereo: This option can convert the sound to mono in the lower frequency range (which can hardly be perceived by the human ear). This results in an enhancement of the stereo quality in the median and higher frequency ranges. The setting is useful if the audio bitrate is below 200 Kbps.

Dual Channel: In this case both audio channels are output separately as mono channels; it is normally used for two-channel sound. The compression of the channels takes place separately.

Single Channel: Another expression for mono audio.

Audio Bitrate (Kbps):

32-384: This specifies the bitrate of the audio stream. Depending on the MPEG type selected, some values may not be available. Increasing the bitrate will yield better sound quality and result in larger files, or if the total bitrate is limited it will mean less of the total bitrate is available for the video.

Set private bit: Just a spare bit in the audio headers, which is user defined. DVD specifies it shall be 0.

Set copyright bit: Specifies whether the audio is copyrighted or not, this setting is completely arbitrary; it has no effect whatsoever.

Set original bit: Specifies whether the audio is a copy or an original, this setting is completely arbitrary; it has no effect whatsoever.

Enable CRC: Specifies whether a CRC is embedded in each audio frame, both SVCD and DVD specify enabled.

Psycho-acoustic model:

Two different models (**1** and **2**) specified by MPEG to compute the "just noticeable noise-level".

PCM:

Mute flag: Flag to the player whether to mute or not when all samples in an audio frame are zero.

Emphasis (48 KHz only): Flag to the player whether emphasis is to be applied to all audio samples from the start of the audio stream.

Dynamic range control: The option is a recommended gain value which can be applied to all audio samples decoded from the first access unit. Ticking the checkbox enables the the **Dynamic range control**. The setting does not affect the encoding of the audio at all. It is simply a value decoders may use when playing the audio.

Gain (dB): The Gain value (**X** and **Y**) is a recommended gain value to be applied to all audio samples by the player, where: Gain = 24.082 - 6.0206 * X - 0.2007 * Y.

The Multiplexer Settings Pane

In this pane you can control whether your exported MPEG files will be multiplexed (also referred to as "muxed"). Multiplexed output means that the video and audio are exported in a single file. This pane also offers several professional settings for muxing.
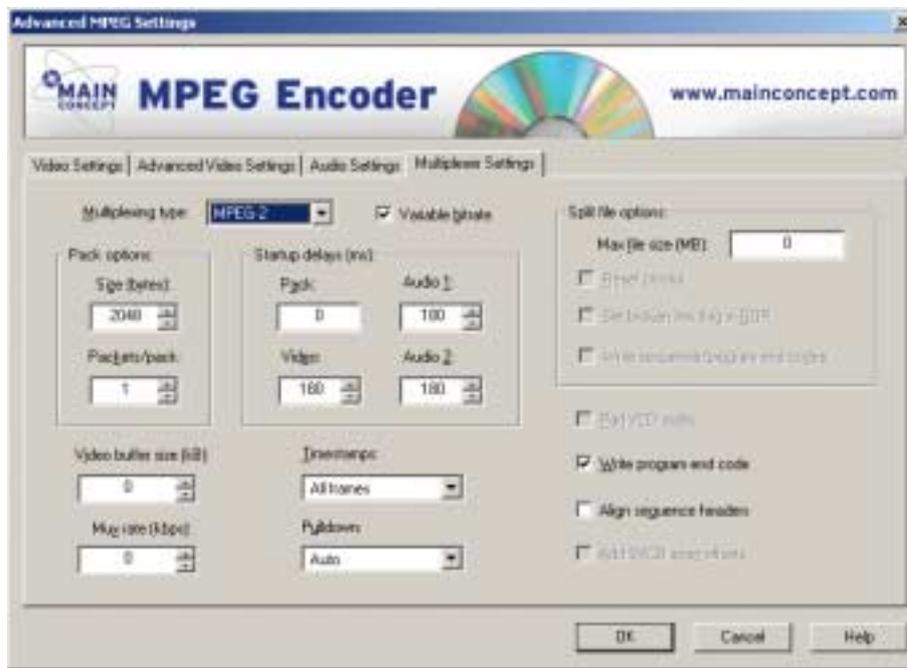
In general, the basic settings for this pane and the other advanced panes are set by the options in the **Output format** section of the main window.

Here are the **Multiplexer Settings** in detail:

Variable Bitrate:

This option sets the muxing mode to variable or constant bitrate. If it is turned off (constant bitrate), the output data stream will contain padding packets (if needed) to maintain the constant bitrate. In variable bitrate muxing no padding packets are added.

Multiplexing Type:

The drop-down menu offers the options **MPEG-1, VCD, MPEG-2, SVCD, DVD, TS** (transport stream) and **None**. The settings are usually defined by the parameters of the MPEG Encoder.

Pack Options:

Under this heading you find the options **Size (bytes)** and **Packets/Pack**. **Pack size** is the number of bytes in each pack (or sector); VCD and SVCD use 2324 bytes, DVD uses 2048 and general MPEG-1/2 can use up to 4096 bytes (4096 is our limit, not MPEG's limit). The muxed bitstream is broken up into these 'packs' with a pack header starting each one and they contain 1 or more PES (Program Elementary Stream) packets (chunks of the video or audio stream). The **Packets/Pack** setting specifies the number of PES packets that are placed in each pack. VCD, SVCD and DVD always want 1 PES packet per pack.

Startup delays (ms):

The **Pack** value specifies the starting timecode of the muxed stream (this can be different than the starting timecode of the video stream). It is arbitrary as well.

The **Video, Audio1** and **Audio2** delays actually specify the starting time of the respective stream (relative to the pack delay). If these settings do not match the streams will start at different times. Normally they are the same, but say you had a video stream and an audio stream where you know the audio actually starts 500ms after the video, you would set the video delay to some value and set the Audio1 delay to video delay + 500, this would then synchronize the two streams when played.

Split File Options:

Max. file size: You enter the value (in MB) here, from which a further file shall be written.

Reset clocks: If Reset clocks is enabled, the SCR, PTS and DTS clocks are reset to the 'startup delay' values (the starting values) when starting a new file. This would make the timecodes in each of the files start with the same values. If disabled, the clocks are not reset and the timecodes would be continuous from one file to the next.

Set broken link flag in GOP: This has to do with the way MPEG compresses frames. Usually a GOP consists of 1 I frame and several B and P frames. I frames are not dependent on any other frames, P frames are normally dependent on the preceding P or I frame, and B frames are normally dependent on the preceding and successive I or P frames.

A standard GOP (the default settings) are 15 (maybe 18) frames long and they look like this (in the order the frames are displayed):

B B I B B P B B P B B P B B P, B B I B B P B B P B B P B B P, ...

Here the first two B frames are dependent on both the I frame after them and the last P frame of the previous GOP. The *Broken link* flag in the GOP header is there to inform decoders that some kind of action was taken such that the preceding P frame is not present and the first 2 B frames cannot be decoded correctly (the decoder may then ignore them). When splitting files, the files are split on a GOP boundary so that the previous P frame of the first few B frames is not present in the new file (it is in the previous file). If the files are played one after another, and the last P frame of the first file is kept by the decoder, the decoder can correctly decode the first few B frames of the second file.

The *Set broken link* setting just allows one to specify whether the *Broken link* flag is set or not, and it depends on whether you intend to play the files one after another or separately.

Write sequence/program end codes: When enabled, sequence and program end codes are written to the old file when switching to a new file. If the files are meant to be played one after another, the streams should not be terminated. This option only applies to the files that are split; it does not apply to the last (or only) file generated.

Pulldown:

This option contains three parameters: **2:3, 3:2** and **Auto**. When pulldown is present in the video stream, the multiplexer must adjust the PTS/DTS timestamps to account for the extra fields displayed. This option should be set to the same value as the video pulldown setting (or to Auto).

Timestamps:

You find **All frames, I & P frames** and **I frames** in this menu. Here you can choose which frames in the stream have a timestamp attached. The timestamps are needed for synchronization of video and audio. In general, it is enough to set this option to I-Frame. For particular formats the values are clearly defined.

Pad VCD Audio: Some VCD burning programs require this flag to be set and some do not. VCD video packs are 2324 bytes long, but the audio packs are only 2304 bytes long. When the data is written to a VCD disk, the audio packs are put in normal 2324 byte sectors. Some VCD burning programs deal with the extra 20 bytes themselves, while others require the extra 20 bytes to be present. When this setting is enabled, the audio packs are padded with 20 zero bytes so they are 2324 bytes long, if not enabled the audio packs are only 2304 bytes long. This setting is only meaningful VCD.

Write program end code: When enabled, a program end code is written at the end of the file. This setting only applies to the last file if the splitting option is enabled, or if there is only one file generated.

Align sequence headers: When enabled, the sequence headers present in the video stream are placed at the beginning of a PES packet, this makes it easier to find the sequence headers and the start of a GOP. When a sequence header is aligned, it is possible that the previous video PES packet will need to be padded to make it the correct size, so this option can consume a little of the total bitrate. This option is required for SVCD and DVD.

Add SVCD scan offset: SVCD defines some navigation information that is put into the video stream to help players jump back and forth or skip ahead easily. The info is called scan offsets, this option is normally required for SVCD. This option also consumes a little of the video bitrate.

This option will be ignored if the user mux rate is set higher than allowed for SVCD.

Video Buffer Size and **Audio Buffer Size:**

These settings specify the size of the buffers needed to decode the video and audio. If it is too low, you will get buffer overflows, which could show up as stuttering video and/or audio. Usually it is set to the same size as the video VBV buffer (although the VBV units are half these units), DVD specifies 232 for the video buffer. Software decoders usually ignore the buffer sizes, but most hardware players will have problems if the buffer size is not correct.

VBV is the abbreviation of *Video Buffering Verifier*. It is a hypothetical decoder with a buffer whose size is specified by the Video Buffer Size. Encoded pictures from the MPEG stream are placed into the buffer (hypothetically) and removed from the buffer at regular intervals. The MPEG video stream is supposed to be constructed by varying the size of the encoded frames such that the buffer does not underflow (i.e. becomes empty where there are no frames in the buffer when it is time to decode one) or overflow (i.e. becomes full where no space is available for more encoded pictures).

Tutorial - Exporting a project

In this brief tutorial we want to show you, how to export a project as an MPEG-2 file for DVD. In the **Export** window you can easily merge the current project into a single video clip.

To merge a project into a single clip, open the project (if it is not already open) and perform these steps:

1. At first, make sure that the yellow line above the Timeline corresponds with the whole project. It might be necessary to extend or move the yellow line, so that it spans the complete project. The result is that only these parts will be exported.

2. After you have set the yellow line to the desired position as well as length, click the **Export** button in the **Timeline** to open the corresponding window:

3. First of all, you have to make some general settings for your output file. Tick the **Export yellow I/O segment only** checkbox, so that only this part will be rendered. Under **Export to** you can specify the desired location and name for the output file. Click the **Browse** button to search for a destination directory on your system, and enter a filename.
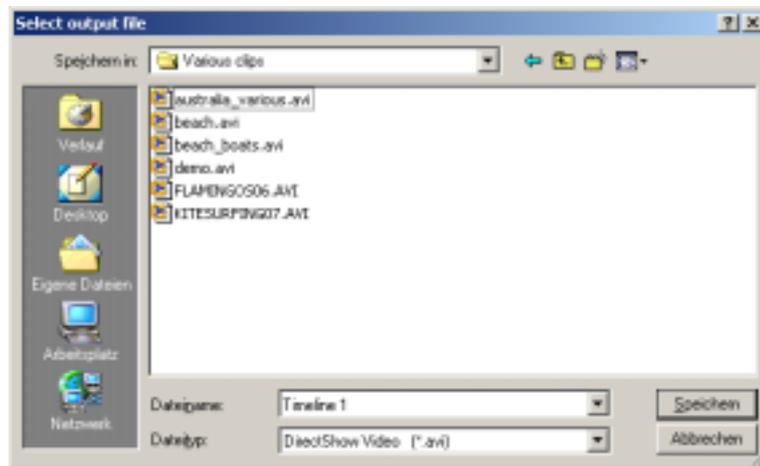
4. As we want to export an MPEG-2 file for DVD, we have to render the video as well as the audio stream. Therefore, we have to select **Video + Audio** in the first drop-down menu under **Format**.
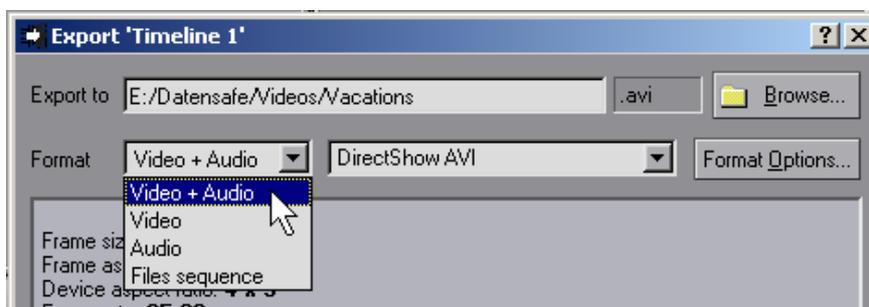
5. We want to render our project as an MPEG-2 file for creating a DVD later on. For that reason, we have to choose **MPEG** in the drop-down menu under **Export format**.
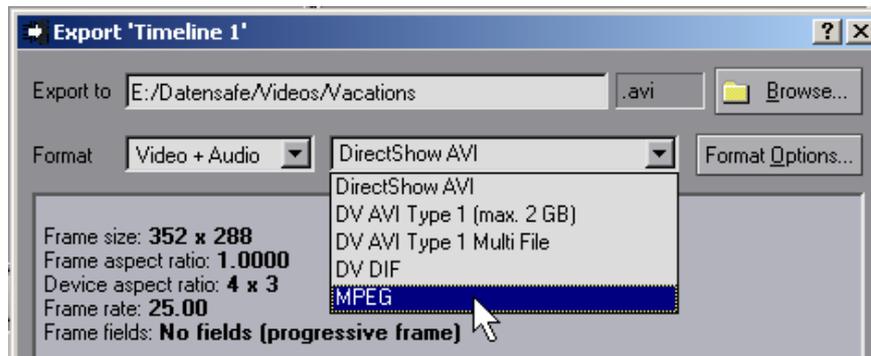
6. After you have chosen **MPEG** in the drop-down menu, the **Format Options** button is enabled. When you click the button, a window which includes the basic settings for the MPEG output file. We restrict ourselves only to the important settings because most of them are done automatically after you have select one of the default output templates. In the drop-down menu **MPEG Type** chose **DVD** because we want to export an output file for creating a DVD. Of course, you can choose any other format here. Under **Frame Size** select **720x576** because this is the standard resolution for a PAL DVD. Confirm your settings with **OK**.
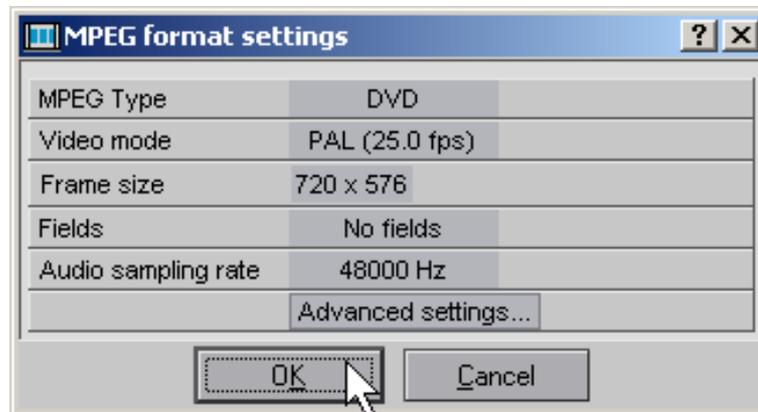
The default settings in the **Format option's** MPEG window generally offer the correct settings for high-quality results. We recommend that you only change the advanced settings if you are familiar with them and have a specific need to do so. Incorrect adjustments of these parameters can result in non-compliant MPEG files.

7. In the middle MainActor v5 **Export** window you see a summary of the MPEG settings you have just made, so that you can check them before you start to render the actual project.
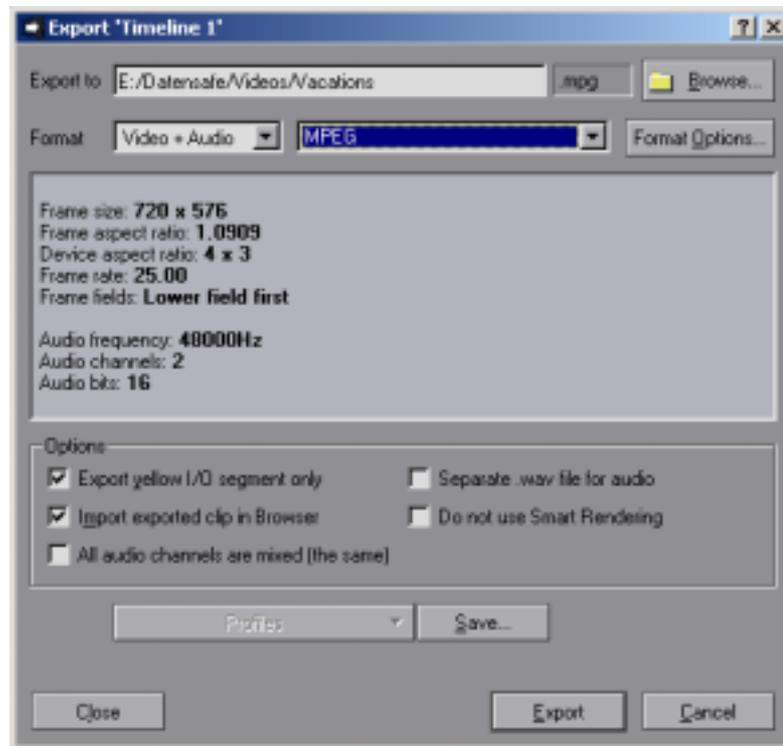
8. If you like, you can save the your personal MPEG settings for future use. Click the **Save** Button at the bottom of the **Export** window. You can accept the default settings or enter an own name for them. Confirm your choice with **OK**. In the future, simply select the user defined MPEG settings from the **Profiles...** drop-down menu.
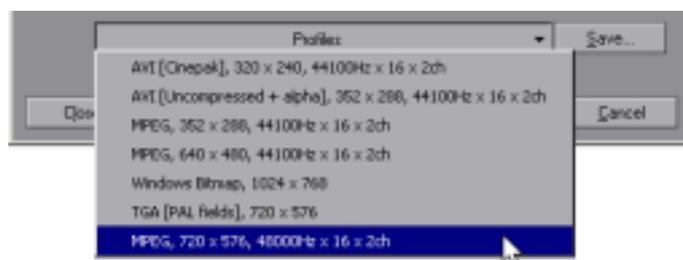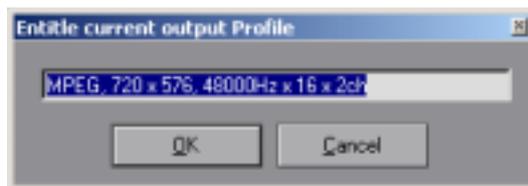
9. When you want to start the rendering process, press the **Export** button. MainActor v5 will produce your project, and the finished clip will appear automatically in the specified folder.
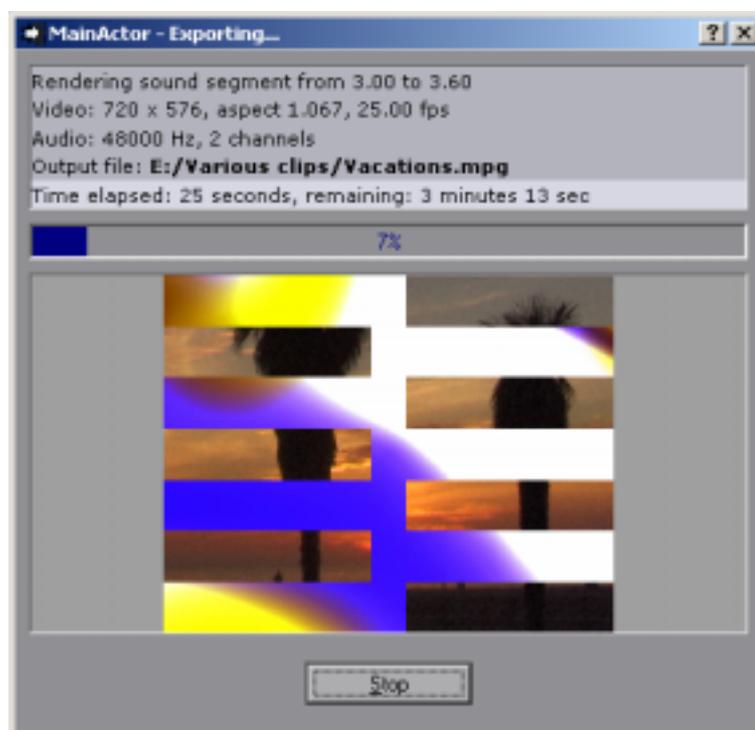
Congratulations! You have just exported your first MainActor v5 project. Now you can edit the MPEG-2 PAL output file with a DVD authoring program, in order to burn it on a DVD later on. Then you can watch it on a normal standalone DVD player, too.

Glossary

In this glossary we want to explain the most important terms in the area of video editing as well as in this manual in detail. The list does not make a claim to completeness because there are so many different terms and expressions that it would be a never-ending task to include all of them in here. But the glossary is good enough to give you a fundamental overview of the topic.

Alpha Channel

This is a special channel type of an **RGB** image, which is responsible for its transparency. The alpha channel is important while working with **overlay**.

Analog

An analog signal consists of continuous values.

Anti-Aliasing

A kind of edge-smoothing for objects, texts or other elements, in order to avoid artefacts and aliasing.

AVI

AVI is the abbreviation of *Audio Video Interleaved*. A simple but widespread container format, in which video and audio data are combined. AVI files require different **codecs**.

Background Rendering

If Background Rendering is used, the changes in the video footage are computed in the background while editing clips in the **timeline**. The result is that the **export** and the **rendering** process for the project is faster in the end.

Bit

Abbreviation for *Binary Digit*. Smallest unit for displaying data. It will be displayed as a binary numerical value 0 and 1.

Bitmap

A Bitmap (BMP) is a special image format for computers. In a Bitmap the image consists of individual **pixels**.

Bitrate

A measure for the data transfer rate. Here the number of bits per seconds is measured. The higher the bitrate the higher is the quality of the video.

Camcorder

A combination of video camera and -recorder.

Capture

When you are capturing you transfer video and audio data to your computer. You can capture digital as well as analog video footage.

Codec

Codec is the abbreviation of COmpressor/DECompressor. These are software drivers which **compress** video data while capturing, and **decompress** it again during playback. This process is based on complex algorithms.

Composite Video

Composite Video is an older but still common interface for analog recordings. Using this interface, a single video signal combines luminance and chrominance. Composite Video is very popular on the professional market, but it also receives more and more attention among private areas.

Compositing

This is a particular technique for combining images and videos. You create a new video by combining different clips and objects. A well-known compositing effect is, for example, the bluescreen effect or **keying**.

Deinterlace

Using this method removes artefacts, which has been caused by the two field phenome-non (see also **Interlace**).

Decompression

Restoring of compressed video data by using codecs. A **codec** decompresses the compressed **AVI** files, and offers the video hardware of the computer a readable format.

DirectX

A technology developed by Microsoft which offers accelerated playback of animated pictures under Windows, such as in videos or games. Using DirectX, the programs directly access the graphics card's memory and therefore relieve the computer processor.

DivX

This is a video compression format for **AVI** files, which compresses digital video footage to a high degree. The DivX **codec** enables you to save films in MPEG-4 format. Using the DivX MPEFG-4 format can reduce the contents of a DVD up to twelve times, and achieve a better quality than a VHS tape. For example, it is possible to reduce a two hours film of 6 GB to 700 MB easily, in order to save it on a normal CD.

DV

Abbreviation of *digital video,* i.e. video footage which has been recorded by a digital camcorder.

DVD

DVD (known as Digital Versatile Disc or Digital Video Disc) is a kind of disc that can hold high-quality MPEG-2 video as well as any kind of data. For example, DVD-RAM is a high-volume storage format, but cannot be played like a DVD video disc.

DVD Video discs can also include MPEG-1 content, however MPEG-2 is generally used because it offers higher quality. DVDs are the size of Compact Discs, and they can be played in standalone DVD players and on suitably equipped computers.

Export

When you export a project, it will be rendered, and the software creates, for example, an **AVI** or **MPEG** file. Depending on the format the files can be played back on a digital camcorder, burned on a **VCD**, **SVCD** or **DVD** etc. While **exporting** or **rendering** a project the video data is computed anew.

Fields

A **frame** consists of two fields. They are denoted Field A and Field B, or Upper field and Lower field. Using the **Interlace** method the frames (i.e. the complete picture) is divided into two fields.

FireWire

A term which has been introduced by Apple, and refers to the IEEE-1394 interface. Using this interface, video data is transferred from a digital source to a computer. The FireWire interface is also know by the term i.LINK.

fps

This is the abbreviation of *frames per second*. It defines the playback speed of a video. In the USA it is 29.97 fps and 30 fps resp., and in Europe 25 fps.

Frame

A single picture of a video. **PAL** plays back the film with 25 fps, and **NTSC** with 30 fps. A frame consists of two **fields**.

Gradient

A slow and gradual transition from one color to another.

Interlace

Analog and digital video footage can be interlaced or non-interlaced. In a video with interlace a **frame** consists of two **fields**, an upper and a lower one. The even lines generate the first field, and the uneven ones the second field. Every field alternately contains a horizontal line of a frame. The lines of the picture are projected onto the screen with such a high speed that the human eye sees the two fields only as one picture.

During playback and export it is important that the specified field order corresponds with the one of the output system, in order to avoid interruptions in the objects' motion sequence, artefacts as well as the comb-like appearance of the picture.

JPEG

Acronym for *Joint Photographic Experts Group*, which is also known as *JPG*. It is a file format for compressing images to a high degree but with low quality loss. The advantage of the JPEG format is that you can define the level of compression yourself.

Keying

One of the most impressive special effects in movie business is keying. In this case you can hide or key out a pixel color. It will be replaced by the background color so that you can finally see a different, inserted picture or video instead of the pixel color here.

Key Frame Animation

It is a technique for creating and choreographing animations over time. You define keys at particular points. It is possible to connect the keys in order to generate a path the objects will follow later on. These key frames are fixed positions over time, and they will animate the corresponding object. An example: you have an object which is at position x. After two seconds the object is at position y, where you have generated a new key before. After five seconds it moves to point z, where you have defined a new key before, too. In the end, the object moves in five seconds from point x via point y to point z.

Compression

Compression of video data by using **codecs** during capturing. In this case the data is stored and transferred with fewer bits.

MJPEG

MJPEG or Motion-JPEG is a file format which is normally based on hardware. Motion JPEG is a further development of the **JPEG** standard for image and graphics files.

MP3

The term MP3 stands for MPEG-1 Audio Layer III. It is not a new format but a part of the MPEG-1 video format. In MP3 the audio files are compressed to a high degree by using special algorithms. It ignores audio data which cannot be heard by the human ear.

MPEG

MPEG is a method for compression audio-visual data. The aim is to achieve high quality and low file size by using complex algorithms. MPEG is an acronym for *Motion Picture Expert Group*. It is the name of the group who developed this format.

Multiplexing

Multiplexing is also known as *Muxing*. This method enables you to merge video and audio streams into a single file. Here is an example: you have an **AVI** file and you add a **MP3** file as well as a **voice over** to it, in order to create a single MPEG-1 file.

NTSC

Abbreviation of *National Television Systems Committee*. It is an American TV format which has been introduced by this committee as a standard. Using NTSC the video is played back with 29.97 or sometimes with 30 frames per second. The resolution is 720x480 here.

Overlay

An overlay enables you to combine two or more images or elements of a picture. For example it is possible to maximize the transparency of one picture so that both of them can be seen. You can also use an overlay for text inserts, such as for credits. Afterwards the different elements are combined to create a video.

PAL

Abbreviation of *Phase Alternating Line*. In Europe and other countries this is another TV standard beside **NTSC**. But the two formats are not compatible. Using PAL, the video is played back with 25 frames per second. The resolution is 720x576.

PCM

PCM is the abbreviation of *Pulse Code Modulation*. It is an uncompressed and loss-free encoding method for audio. The audio signals are displayed as digital data here. Furthermore, it is used as a sampling method for the digital transfer of analog data streams.

Pixel

A pixel is a single point in an image. It adapts a specific color value.

Quick Time

An alternative to the Windows **AVI** format, which has been developed by the Apple company. Quick Time videos can be played back both on a PC and a Macintosh if the corresponding software is installed on the system.

RGB

Acronym for the three primary colors red, green and blue. They are the basis for additive color mixture, i.e. every color is mixed using red, green and blue.

Rendering

During the render process, the edited video is computed anew, i.e. during this process effects, transitions, additional audio etc. is merged into one file (see also **Export**).

SECAM

Abbreviation of French *Séquential couleur avec mémoire*. A color TV standard which has been developed and applied in France. It is also used in the Middle East, in Russia and in other Eastern European countries. SECAM plays back the videos with the same frame rate as **PAL**, i.e. 25 frames per second.

Smart Rendering

Smart Rendering is a kind of intelligent **rendering**. In this case only changes in a video are computed anew. This feature saves a lot of time while producing the final version of your film. It also guarantees that video footage, which has not been edited, maintains its original quality.

Streaming

Streaming is the process in which videos are distributed via the internet or other network areas. Using this method the data need not to be downloaded completely in order to start the playback. The rest of the video data is downloaded in the background.

SVCD

A Super Video CD is an ordinary Compact Disc containing MPEG-2 video that can be played on many standalone DVD players and on computers. The primary advantage of SVCD is that CD burners and media are less expensive than DVD burners and media. The primary disadvantage of SVCD is quality, which is significantly lower than that of DVD because in order to have any length in the video and support the drive speeds, the video is generally made at a lower bitrate and smaller frame size than DVD video.

Note that in SVCD (like VCD), the quality is not limited by the quality of the media (the recordable disc) itself, but by the type of video format that enables a significant amount of data to be stored on the disc. In other words, to fit enough video on the disc, quality has to be sacrificed.

S-Video

Abbreviation of *Super-Video*. This technology offers the best possible video playback on a corresponding recorder. Using this method the film is divided into its luminance and chrominance components, which are transferred separately.

Timeline

The timeline is the place where you edit your videos. It contains different video and audio tracks. You add the corresponding video and audio streams to these tracks.

VCD

A Video CD is an ordinary Compact Disc containing MPEG-1 video that can be played on standalone VCD players, many standalone DVD players, and on computers. The primary advantage of VCD is that CD burners and media are less expensive than DVD burners and media. The primary disadvantage of VCD is quality, which is significantly lower than that of DVD because in order to have any length in the video and support the drive speeds, the video is generally made at half the frame size of full screen video and the blown up for playback.

Note that in VCD, the quality is not limited by the quality of the media (the recordable disc) itself, but by the type of video format that enables a significant amount of data to be stored on the disc. In other words, to fit enough video on the disc, quality has to be sacrificed.

Voice Over

This method is used to edit the sound of a video. In addition to the audio track for sound you generate another audio track for a narrator. In practice you encounter this phenomenon in documentaries, the news etc.

Technical Support

MainConcept Technical Support

If you need assistance with MainActor v5 for Linux, visit the MainConcept website at **www.mainconcept.com** for troubleshooting advice, tips and tricks, discussion forums, and information on how to contact our support staff.

We hope that you have a lot of fun with our latest product. If you have any suggestions on how to improve the MainActor v5 Linux please send us your feedback to the following email address: **info@mainconcept.com**

Depending on your location, charges may apply for telephone technical support.