AUDIO EDITORS V6.5

USER MANUAL

DIGITAL   AUDIO   VIDEO   INTEGRATION   DEVELOPMENT

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1. Manual Icons

There are some icons in this document to point out important information.

🔑	**License required**	Functions with this icon require a separate license from DAVID Systems.
NEW	**New**	This icon appears in headlines and the content index. It marks new features or a changed behavior/workflow that has been recently implemented.
🌍	**Admin info**	When this logo appears, then there is a chapter in the corresponding admin manual about this topic (the chapter or section usually has the same title in both manuals); e.g. how to activate a described feature. This also means the described function will not be available if not activated and configured.
💡	**Hint**	This icon marks hints, tips and help.

2. Introduction

This is a user documentation for the whole family of DigaSystem Audio Editors, as there are SingleTrack-, EasyTrack- and MultiTrack Editor. Every Editor has the following Workspaces available:

- **SingleTrack Editor (ST, STE)** screens: Recording Mode, SingleTrack
- **EasyTrack Editor (ET, ETE)** screens: Recording Mode, SingleTrack, ReporterBox, EasyTrack
- **MultiTrack Editor (MT, MTE)** screens: Recording Mode, SingleTrack, ReporterBox, MultiTrack

2.1. Editor's division in workspaces

The Audio Editor is structured in multiple Workspaces: the MultiTrack or EasyTrack screen, the SingleTrack screen, the Record Mode screen and the ReporterBox. Every screen is designed for a specific task in production, as there are displayed only elements and functions, which are necessary for the next working steps; this creates a simple and clear User-interface. The switching between the screens or workspaces without loss of context is made possible by a function strip, which is available in all screens.

All workspaces share a Multi-Format-Clipboard that is able to save Audio-clips as well as RTF-Text-clips. The Clipboard contains different possibilities to display and assort Elements, as well as an integrated format conversion, which allows an easy import or export clips between the Audio Editor and Database Manager or other applications. Finally, in all workspaces there are the common transport buttons, level adjusters and level meters.

2.2. SingleTrack Editor

Although its extensive editing possibilities, the STE distinguishes itself by a clearly arranged user interface.

Therefor one example is a bigger exposure of the waveform, which passes in playback mode time synched a fixed sound head. To align with the younger user generation, it is also possible to set the sound head to "moving". The opportunity to save projects including all used sound files and edit decision lists ensures a temporary saving of the current state of work with the possibility of all undo-functions in a later session.

The functions for edit- and clipboard-handling are arranged according to the register system given by Windows. Due to the new file structure based on the MusiFile-standards, the STE supports not only the linear editing but also the direct Server-Edit-Mode without loading times between workstation and server.

For the use in music databases the STE possesses a range of special marks, allowing the execution of Fade-in/-out, Mark-in/-out times as well as different Intro-points etc. in Playout-systems. In addition, the individual naming of markers facilitates the finding of certain passages.

Owing to a large format-conversion-tool different audio formats can be edited. The time-stretch-function supports an alignment of the entry's current length to a given time range.

By using DDE STEs openly designed software interfaces are allowing the integration of third-party-software.

STE is separated in two workspaces: the SingleTrack screen and the Recording Mode screen. Every screen is designed for a specific task in production, as there are displayed only elements and functions, which are necessary for the next working steps; this creates a simple and clear User-interface. The switching between the screens or workspaces without loss of context is made possible by a function strip, which is available in all screens.

All workspaces share a Multi-Format-Clipboard that is able to save Audio-clips as well as RTF-Text-clips. The Clipboard contains different possibilities to display and assort Elements, as well as an integrated format conversion, which allows an easy import or export clips between the Audio Editor and Database Manager or other applications. Finally, in all workspaces there are the common transport buttons, level adjusters and level meters.

2.3.   EasyTrack Editor

The ETE is a production tool for the creation of entries within DigaSystem with large editing possibilities. It allows the recording and editing of audio material on three tracks and therefor closes the gap between the modules STE and MTE. Frequent production jobs, like the creation of an entry with background music, are amongst the most typical applications for ETE. With the integration of an RTF text editor, existing clips can be extended with comments and notes (for example Lead-In). Because of its design for PCX- and MM-boards, ETE is fully compatible with all other DigaSystem applications. The integrated format conversion capability supports the editing of different audio formats. In addition, the ReporterBox supports a production flow process of clips coming from moderation and sound bites, also from outside of a conventional studio.

ETE consists of 4 work screens, switching between these screens is done by mouse clicks: EasyTrack, SingleTrack and Recording screen. The fourth screens the ReporterBox. Each screen has been designed for specific production tasks and provides highest user flexibility. As only required functions and elements are shown, its use is clean and intuitive. Switching between the screens is done through a toolbar. Common to all screens is a multiformat clipboard for storing both audio clips and text clips, like color, sort options, labeling, etc. Import and export are done with drag & drop into or out of the DigaSystem Database Manager. Transport buttons, fader and level displays also exist in all views.

2.4.   MultiTrack Editor

MTE is the high-end production tool within the DigaSystem family. Similar as the other audio and video editors, MTE fits seamlessly with any existing DigaSystem, and extends these by complex production facilities.

MTE is based on virtual track management and an object-oriented concept; this provides for using any number of tracks and clips. Even working with different audio formats (MPEG, WAV, AIFF, etc.) is possible, due to the integrated 32 bit floating audio format conversion.

MTE works on the same PC as all other DigaSystem applications, no expensive hardware upgrade is required.

Like ETE, also MTE is structured in 4 work areas or views: MultiTrack, SingleTrack, Recording and ReporterBox screens. Each screen has been designed for special production tasks, displaying only those functions and elements, which are required for the next working steps, resulting in a simple and clear user interface. Context switching without loss of information is provided via a toolbar, available for all functional areas.

Common to all screens is a multiformat clipboard for storing both audio clips and RTF text clips. The clipboard provides several display and sort options, and an integrated format conversion, enabling a simple import and export between MTE and Database Manager, or other applications. Finally, all views contain the usual transport buttons, fader and level displays.

2.5.   Hints for availability of functions

Areas with a blue box are providing hints for configuration, which are not set in the editor itself, but in the configuration file.

These parameters are normally configured by the system administrator. In a DigaSystem environment this is done by using the administrating tool **DigaSystem Administrator**. Nearly all parameters are configured in the sub key **Settings** within the key of the according Editor (Global, local or user settings).

When the Editor is used in standalone mode, not connected to a DigaSystem, the Editor uses a configuration file with the ending INI, which is found in C:\ProgramData\DigaSystem. The file bears the name of the Editor and is found in the homonymous subfolder.

2.6. System Requirements

The Audio Editors can be used on machines operating with the following operating systems:

- **Windows 7**
- **Windows 10**

At least an onboard soundcard is needed for playback and recording.

2.7. MP3 Codec License

Please note:

For all mp3 applications in all DigaSystems, the following mp3 codec license applies:

"Supply of this product does not convey a license nor imply any right to distribute content created with this product in revenue-generating broadcast systems (terrestrial, satellite, cable and/or other distribution channels), streaming applications (via Internet, intranets and/or other networks), other content distribution systems (pay-audio or audio-on-demand applications and the like) or on physical media (compact discs, digital versatile discs, semiconductor chips, hard drives, memory sticks and the like). An independent license for such use is required. For details, please visit http://mp3licensing.com".

3. Customizable User Interface

A customizable user interface has been introduced with Audio Editors Version 5.5. This leads to the following changes and new functions:

The following screen areas can be found in many or all workspaces:
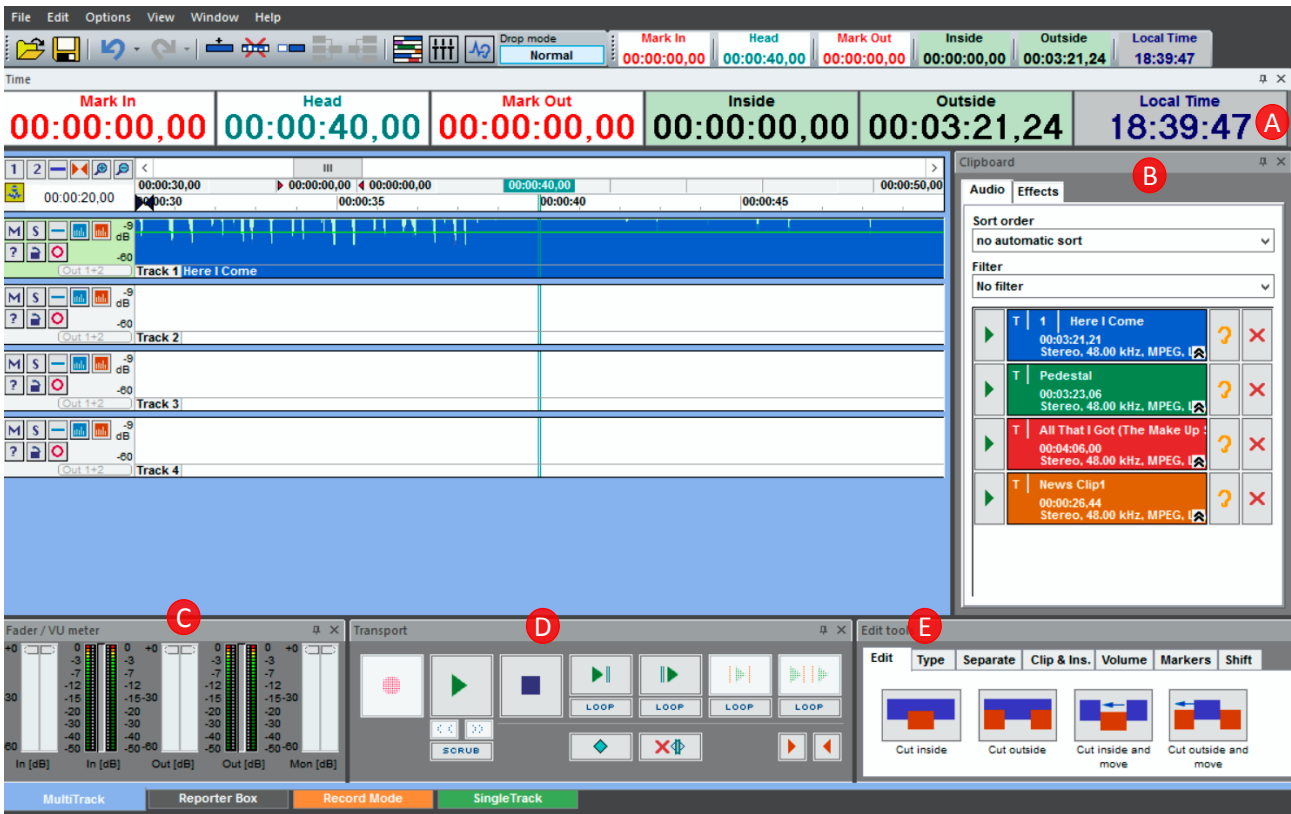
A	Time Window
B	Clipboard
C	Fader / VU Meter
D	Tools
E	Transport

3.1.   **Docking Mechanisms**

Move your cursor to the upper border of a section, e.g. the clipboard. When you keep the left mouse button pressed and then move the section, it becomes a free, floating window. As long as the mouse button is pressed, there are different link points displayed in the background section, on which you can move the section:
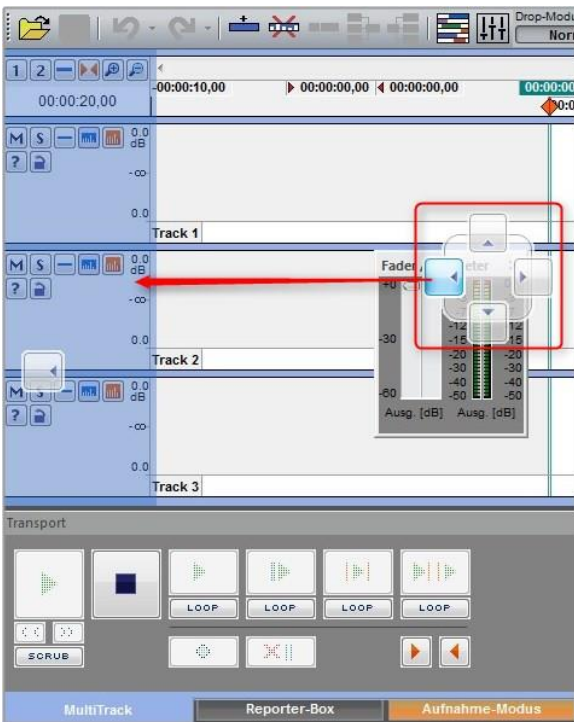
The crosshair is displayed in the center of every section, on which the section you want to move currently is. In this way fix the free window at the border of the according background section.
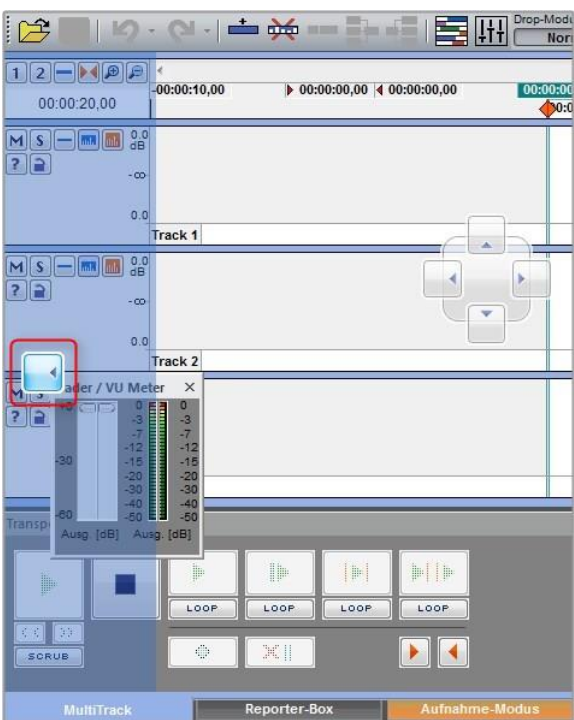
These detached arrow symbols are located at the side borders of the main window and also refer to it. Drag the free window on one of them and it will be linked to the border of the main window and reaches over the whole side.

3.2.   Pin Function

Every movable section has a PIN symbol in the upper, right area of the window frame. This function works as it does in the Windows 7 surface:

By default, the displayed sections are fixed pinned. The sections are tightly braced in the surface. By clicking on the symbol, the section can be minimized in the frame of the main window.

The section is not pinned to the main window and accordingly minimized.

When a section is minimized, it is displayed in a sort of taskbar at the edge of the main window. Move the cursor to this area, to show this section.
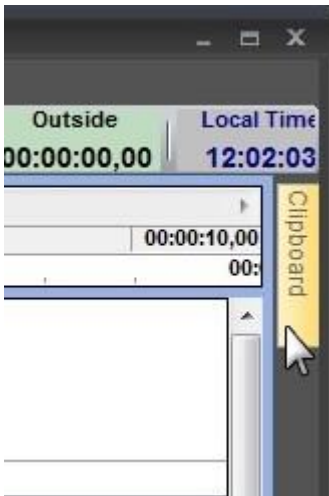
4. The Record Mode

Record Mode provides fast and comfortable recording of audio material within the editor environment. Additional to the usual faders and displays, large buttons are available for recording control as well as an immediate display of the incoming waveform. Besides punch-in-recording (like with a normal tape recorder), it is possible to set markers while recording, for later editing. All recorded clips may be named individually and stored in the clipboard, with individual colors. Inclusion of text is possible.

4.1.   Window Sections and Elements

A typical screenshot of the Record Mode is shown below with the explanations of elements which differ from other screens.
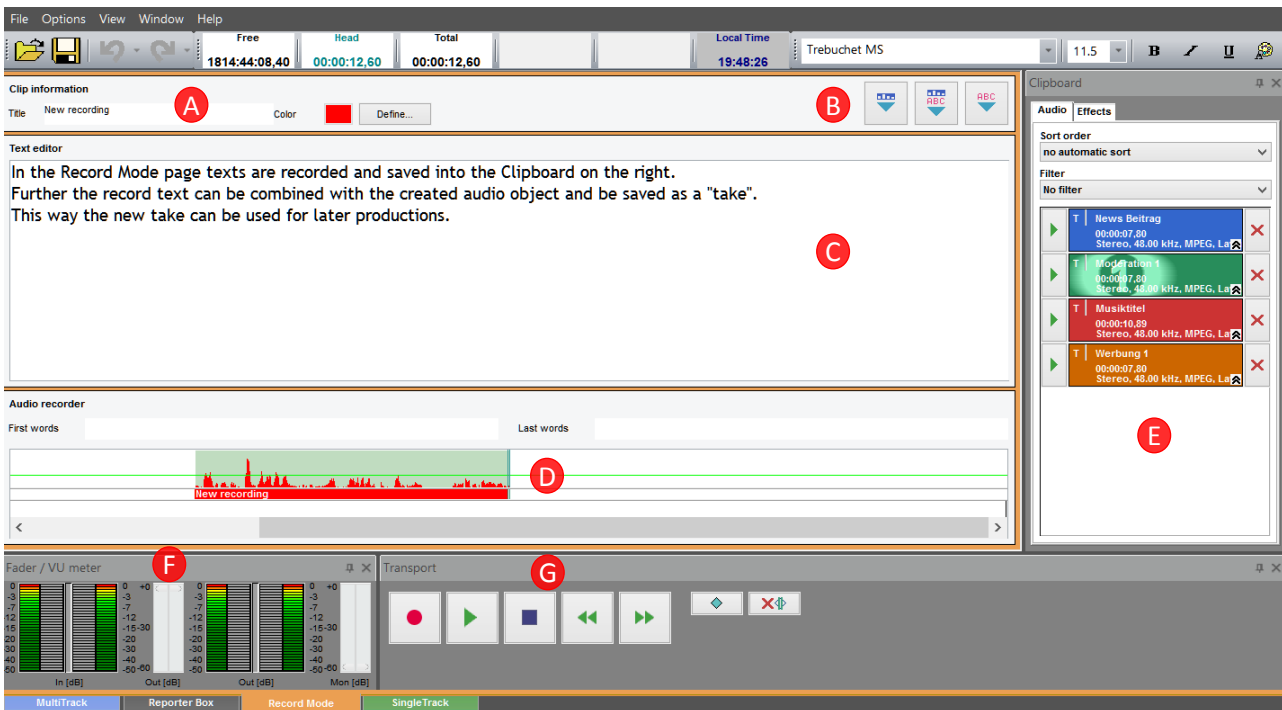
A	Take name and color
B	Audio- / Text-Clip
C	Text Field
D	Waveform Display
E	Clipboard
F	Level Meter
G	Transport Buttons
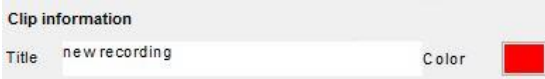
Clip information Title: new recording Color: 🔴	**Take name and color** Name and color of the recording can be defined in this field.
(four buttons)	**Audio-/Text-Clip** 🌐 With these three buttons the recording will be generated as audio clip, combined audio and text clip or text clip.
Text - Editor : In the Record Mode Pag Further the record text	**Text Field** Allows for typing text, to be saved in the clipboard, also together with leading or trailing audio.
(waveform display) new record	**Waveform Display** The waveform display in the Record Mode shows the waveform from start until present
Clipboard Audio Effekte Sortierung : keine Sortierung Filterung : keine Filterung T Neue Aufnahme 1 00:05:50,22 Raw(ID3V2), MPEG-L.3: 44.1 kHz T Neue Aufnahme 2 00:03:39,27 Raw(ID3V2), MPEG-L.3: 44.1 kHz T new record 00:00:11,52 Stereo, 48.00 kHz, MPEG, Layer	**Clipboard** The clipboard stores the completed recording for later editing.
Properties... Refresh Load Timestamps Recalculate Waveform (color bars)	**Clip Colors** The context menu (right mouse button pointing to an object) shows the available colors. Additionally, colors are automatically assigned sequentially with the loading of takes. Clips get the same colors as the takes, from which these originate. **Refresh** By this function it is possible to determine the current length of files being recorded. "Refresh" is available in the menu whenever the selection contains any takes. Refresh operation is performed on all selected takes. Selected non-takes, and unselected takes, are ignored. **Recalculate Waveform** In case of an incorrect or damaged waveform display it is possible to recreate it for the current session.
(transport buttons)	**Transport Buttons** All buttons for playback and recording are located in this field.
Fader / VU Meter (level meters)	**Level Meters** This is where the level of the currently recorded signal is displayed.
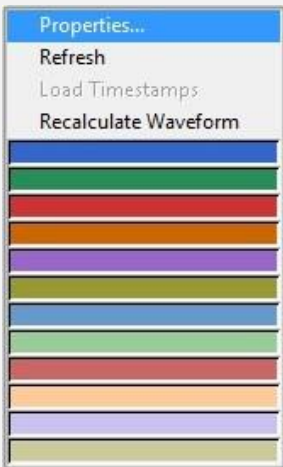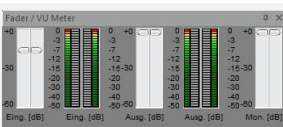
5. The SingleTrack Screen

The SingleTrack screen, previously known as Edit Station screen, was renamed because of the development of new features, and the actual portfolio of DigaSystem editors covering all possible tasks and production environments with the SingleTrack (previously Edigas Edit Station), EasyTrack and MultiTrack Editors.

5.1. Window Areas and Elements

A typical window of the SingleTrack screen with its sections, elements and buttons is shown below:
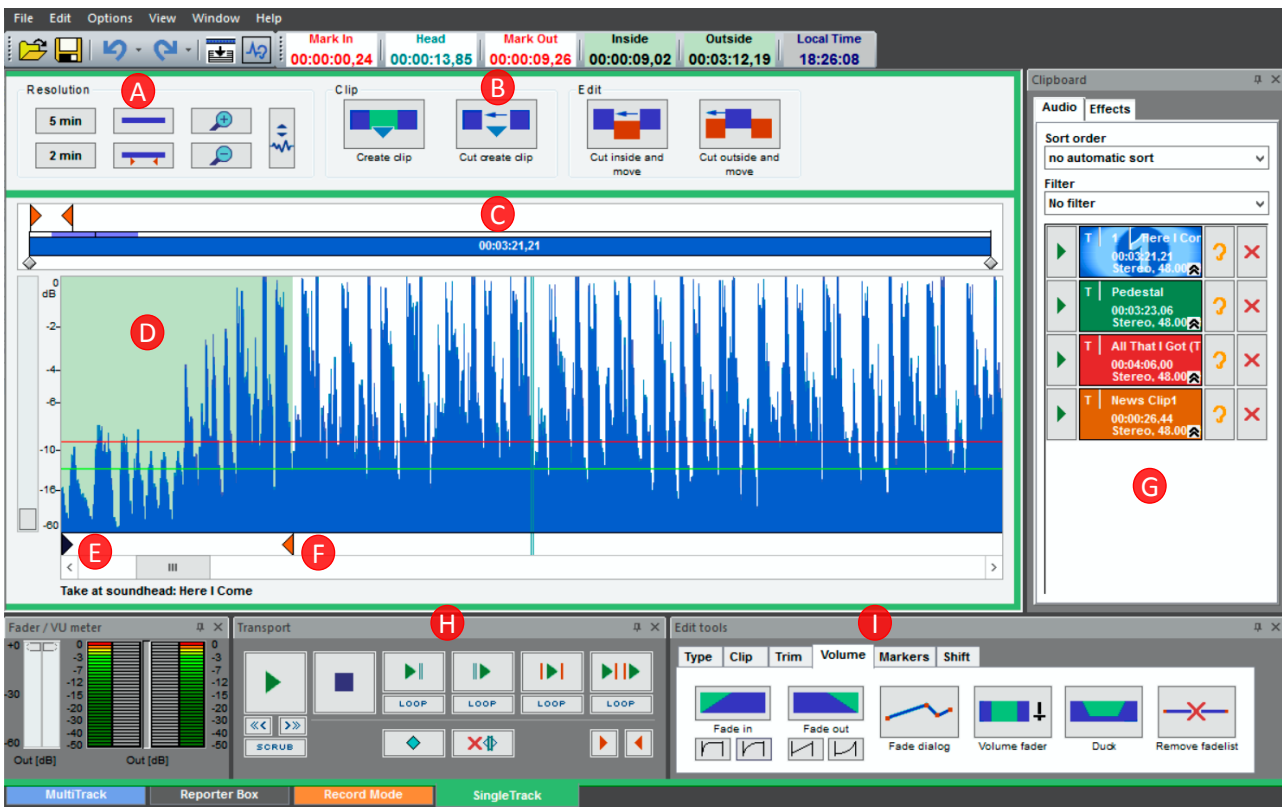
A	Resolution
B	Edit Buttons
C	Take Overview
D	Waveform Display
E	In Marker
F	Out Marker
G	Clipboard
H	Transport Buttons
I	Edit Tools

Resolution

For the selection of the waveform displayed in the timeline, two values may be preselected by buttons. These values may be individually set in the menu OPTIONS – SETTINGS – TRACK – RESOLUTION. The buttons in the middle column display the complete content or the edit area. With the buttons, "Zoom In" and "Zoom Out", the area may be halved or doubled (also with SHIFT + mouse scrolling). With the button at the right the waveform offset may be activated or deactivated.

Edit functions

The most important cut functions CUT INSIDE AND MOVE / CUT OUTSIDE AND MOVE and CREATE CLIP / CUT CREATE CLIP are selectable by big buttons just above the track display sections.
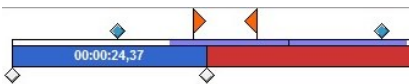
Take overview

The take overview displays the complete take with its fields and audio objects, as well as cut markers and marks.
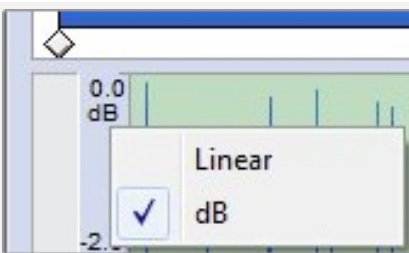
Volume scale 🌐

By right click on the volume scale, you can choose between a linear and a dB display.
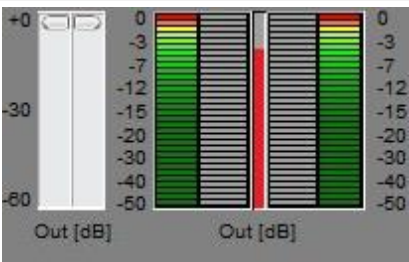
Phase indicator 🌐

The VU meter for recording and playback has an integrated phase meter that checks audio files for phase inversions.

A phase shift in recordings or playbacks will be indicated by a red bar in the space between the two Out channels.

Edit tools

Most of the commands are organized by 6 tabs. Depending on the actual work step, the required tab will be selected automatically. However, any tab may be manually selected at any time. For more details, see below.

In marker

The button IN MARKER sets the In point of a take's selected area at the actual sound head position.

This position will be indicated by a red triangle to the right in the sound head line of the timeline.

Out marker

	The button OUT MARKER sets the end point of a take's selected area at the actual sound head position. This position will be indicated by a red triangle pointing to the left, in the sound head line of the timeline.
	Transport buttons Clicking the audio buttons, the take may be replayed. The buttons have the following functions, from left to right:
	Playback Replay starting from the actual sound head position <u>DoubleClick:</u> Replay starts at the defined pre-roll time, the sound head shifts to the left by a defined time period, and starts the replay. The pre-roll area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME – PRE ROLL.
	Play left of Sound head Play starting x sec left of the sound head. The replay area is defined by OPTIONS – SETTINGS – TRACK –REPLAY TIME WITHOUT LOOP Loop (automatic repeat): After the end of the replay, the sound head shifts back to the In position and repeats the area. The replay area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME LOOP.
	Play right of Sound head Play starting x sec right of the sound head. The replay area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME WITHOUT LOOP Loop (automatic repeat): After the end of the replay, the sound head shifts back to the In position and repeats the area. The replay area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME LOOP.
	Play inside markers Play of the first and last x sec. within markers. The replay area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME WITHOUT LOOP. Loop (automatic repeat): After the end of the replay, the sound head shifts back to the In position and repeats the area. The replay area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME LOOP. CTRL+click: The selected area will be completely replayed; the default area will be ignored.
	Replay outside of markers Play of x sec. before the in marker and x sec. after the out marker. The replay area is defined by OPTIONS – SETTINGS – TRACK – REPLAY TIME WITHOUT LOOP. Loop (automatic repeat): After the end of the replay, the sound head shifts back to the In position and repeats the area. The replay area is defined by OPTIONS – SETTINGS –TRACK- REPLAY TIME LOOP.

Stop

1x click: Stop playback. If the playback was started via the buttons PLAY LEFT/RIGHT/INSIDE/OUTSIDE (with or without Loop function; see above), the playhead will jump to the position where the playback started. During a normal playback, the playhead remains at the current position.

DoubleClick: Stops playback and move the playhead to the start of the track.

5.2.   Taskbar

The Taskbar holds the commands for the currently selected screen.

Open Sound File:

Open (load) a sound file from a database or (in case of missing connection to a database) from a directory. This is followed by the windows selection box. After the file is loaded, it will appear in the clipboard.

Saving Sound File:

Saving the current project as new sound file into a database or (in case of missing connection to a database) into a directory.

Undo:

Undo the last work step. By clicking the arrow, a list of the last working steps will be displayed, after which several steps may be selected and undone.

Redo:

Redo the last undone work step. By clicking the arrow, a list of the last undone steps will be displayed, after which several steps may be selected and redone.

Copy Track:

The whole displayed track is copied to the MultiTrack or EasyTrack screen. When the track has previously been imported from MultiTrack or EasyTrack screen to the SingleTrack screen, this track will be replaced by the currently edited version. When the track has been taken out of the clipboard and therefore it shall be added as additional object to the MultiTrack screen, there will be a new track added to MultiTrack screen.

Hint: Objects from SingleTrack screen can be transferred to the target screen as one grouped object.

5.3.   Edit Tools

5.3.1.   EDIT TAB

In the SingleTrack screen this tab is not displayed here, as the buttons are embedded directly into the screen surface.

	Cut Inside and Move
	The area marked with in and out markers will be cut, resulting in a pause. Both parts before and after the cut will not be separated, however, but after synchronization will be treated as <u>one</u> object.
	Cut Outside and Move The parts outside the area marked by in and out markers will be cut. In this track, only the selected area remains and will be positioned at the start of the track.
	Cut Create Clip With this button, the area marked with in and out markers will be cut, and saved in the clipboard as a new clip. Next, a dialog field for the name and color appears.
	Create Clip With this button, the area marked with in and out markers will be copied to the clipboard. Next, a dialog field for the name and color appears.

5.3.2.   CUT POSITION TAB

All editors are able to cut not only linear, but also compressed audio formats in a sample correct way. For that, the new audio engine transforms the data to 32 bit floating audio format.
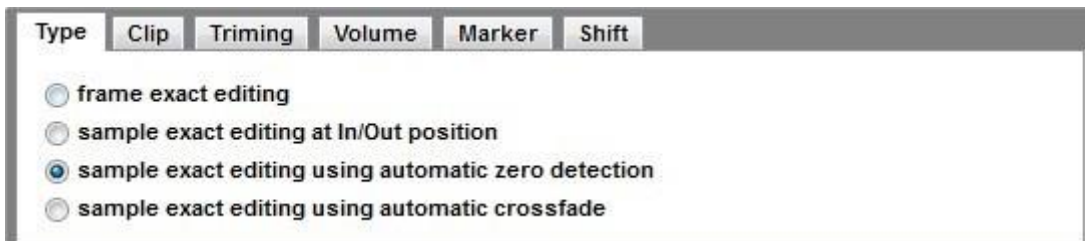
Frame Exact Editing

This preset allows cutting at the edges of the MPEG frames.

Hint: When switching to sample exact editing, there will be an info-window displayed, informing the user that it is only possible to switch back to frame exact editing when all tracks are empty. Background to this behavior is the technical track transformation into a

You are working with audioformats that can only be edited in frame units. If you want to work on single samples, creating new takes can afford some more time in certain cases. You can switch back to frame editing only when all tracks are empty. Do you want to switch to sample exact editing?

Yes   No   Cancel
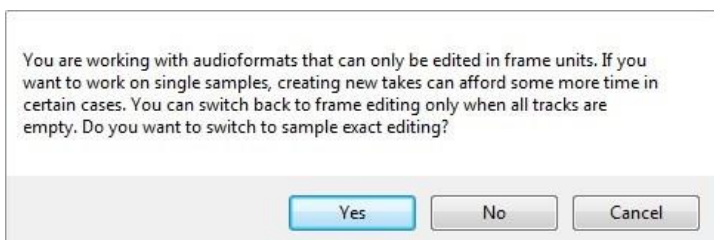
sample exact format, which cannot be undone
in the current session with the same files.

Sample exact Editing at In/Out Positions

The cut will be performed exactly at the positions of the in and out markers. This may create an audio click at the cut position, if the cut has been done at the plus and minus wave.
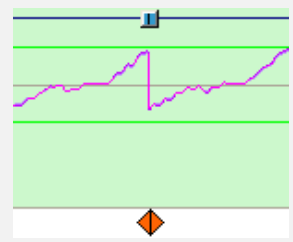
Sample exact Editing at the next zero crossing Point

The cut will be done precisely at the wave's next zero crossing point. This avoids an audio click, resulting from a cut of a plus wave with a minus wave.

Sample exact Editing with automatic Crossfade

The cut will be done precisely at sample boundaries; an automatic crossfade inhibits a potential audio click.
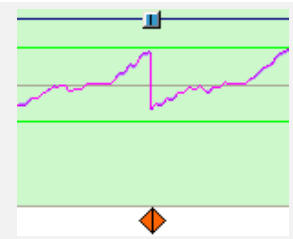
5.3.3.   CLIP TAB

Clips between Markers

Areas between markers (see overview section) will be split in individual clips.

For this, the name of the in marker will be assigned automatically to the clips. The marker names may be chosen before by double-clicking the overview section. Additionally, a definition of default marker names may be done through SETTINGS / GLOBAL 2.

Clips between Clip Markers
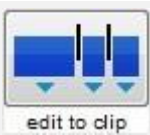
Areas between cuts, i.e. cut markers (see overview section), will be split in individual clips.

The Edit Station Layout additionally shows the commands for generating clips, as these buttons are missing above the take overview.

5.3.4. TRIM TAB

	Left/Right/both-sided Trimming The cut will be edited step-by-step, with frames cut left from the timeline being restored frame by frame, or by continuing cutting.
	-1 / -10 / +1 / +10 At the cut position, 1 or 10 frames will be removed; respectively the cut frames will be restored.
	Delete Cut The selected cut will be undone. Then, the in and out markers represent the original cut positions. In this way, a cut may be quickly modified and redone.

5.3.5. VOLUME TAB

	Fade In Within the selected area, a fade in will be added. The parameter for the start volume of the fade in is in the menu OPTIONS/SETTINGS/TRACK/ FADE IN/OUT.
	Fade Out Within the selected area, a fade out will be added. The parameter for the start volume of the fade out is in the menu OPTIONS/SETTINGS/TRACK/ FADE IN/OUT.
	Fade Dialog Activates the fading mode. In a dialog box, the fade points may be set and shifted.
	Volume Fader Adjusts the amplification of the selected area.
	Duck Within the marked area the volume is decreased. In contrary to the **Volume Fader** there is a volume transition created, so there is no sudden volume change.
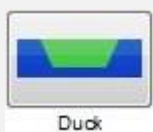
Remove Fade list

Within the marked area, all volume modifications will be reset. The fade points outside the removed points will be connected with each other.

Set Fade Characteristics

Within the marked area, for the functions Fade In and Fade Out, the linear or logarithmic characteristics will be set.

5.3.6.   MARKER TAB
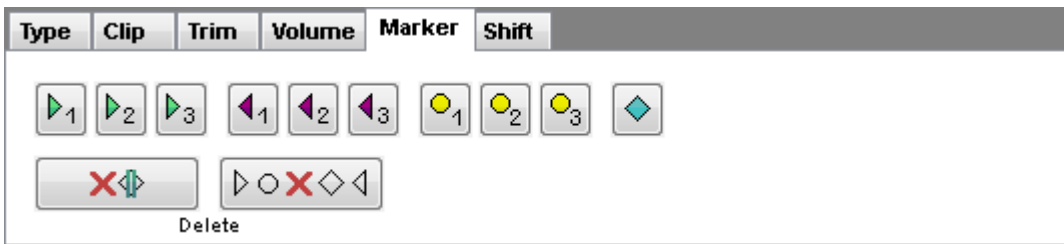
Marker Type 0

At the sound head position, a locator will be set, which helps to retrieve this position later.

Marker Type 1

At the sound head position, an intro locator will be set. .

Marker Type 2

At the sound head position, an outro locator will be set.

Marker Type 3

At the sound head position, a chorus locator will be set.

Delete Marker

The marker, at which the sound head is located, will be deleted.

Delete all Markers

All markers on this track will be deleted.

5.3.7.   SHIFT TAB
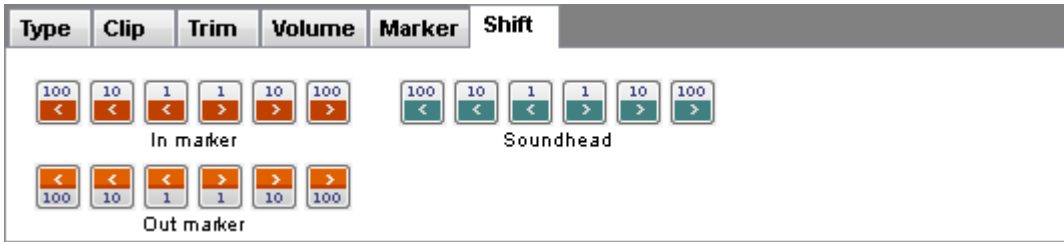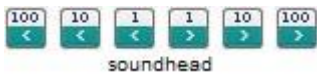
In Marker buttons	Description
	Shift In Marker
in marker	With this button, the in marker may be shifted by 100, 10 or 1 frame(s) to the left or right.
	Shift Sound Head
soundhead	Shifts the sound head by 100, 10 or 1 frame(s) to the left or right.
	Shift Out Marker
out marker	Shifts the out marker by 100, 10 or 1 frame(s) to the left or right.

6. The EasyTrack Screen

ETE consists of 4 work screens, switching between these screens is done by mouse click on the according area button:

EasyTrack, SingleTrack and Recording screen. The fourth screen is the ReporterBox. Each screen has been designed for specific production tasks and provides highest user flexibility. As only required functions and elements are shown, its use is clean and intuitive. Switching between the screens is done through a toolbar. Common to all screens is a multiformat clipboard for storing both audio clips and text clips, with individual display possibilities like color, sort options, labeling, etc. Import and export are done with drag & drop into or out of the DigaSystem Database Manager. Transport buttons, fader and level displays also exist in all views.

The EasyTrack screen provides for administration and editing of objects with up to 3 tracks, all shown on the screen. Contrary to the MultiTrack Editor, there are no different track views. In fact, the functional area is switched over with an unchanged screen. Besides basic edit functions for objects on a track, there are easy-to-use EasyTrack functions like synchronization, volume control, and zoom. Other functions like auto-ducking and undo/redo are also available. DAVID's own effects EasyEqualizer and Subsonic Filter are applied on a track base, the compressor on all tracks. There are no other plug-in effects in EasyTrack. A specific functions bar allows access on the most common functions. Time displays, which are individually configurable, provide a fast overview over marked areas, sound head position and other important time information. For the control of transport- and extended playback functions, there are large buttons available.

To integrate clips from the multi-format-clipboard or to move clips between tracks simply use drag & drop.

6.1.   Window areas and elements

In the following image you can see a typical EasyTrack screen with its window areas, elements and buttons. The EasyTrack screen is used for three tracks producing and synchronizing of entries.
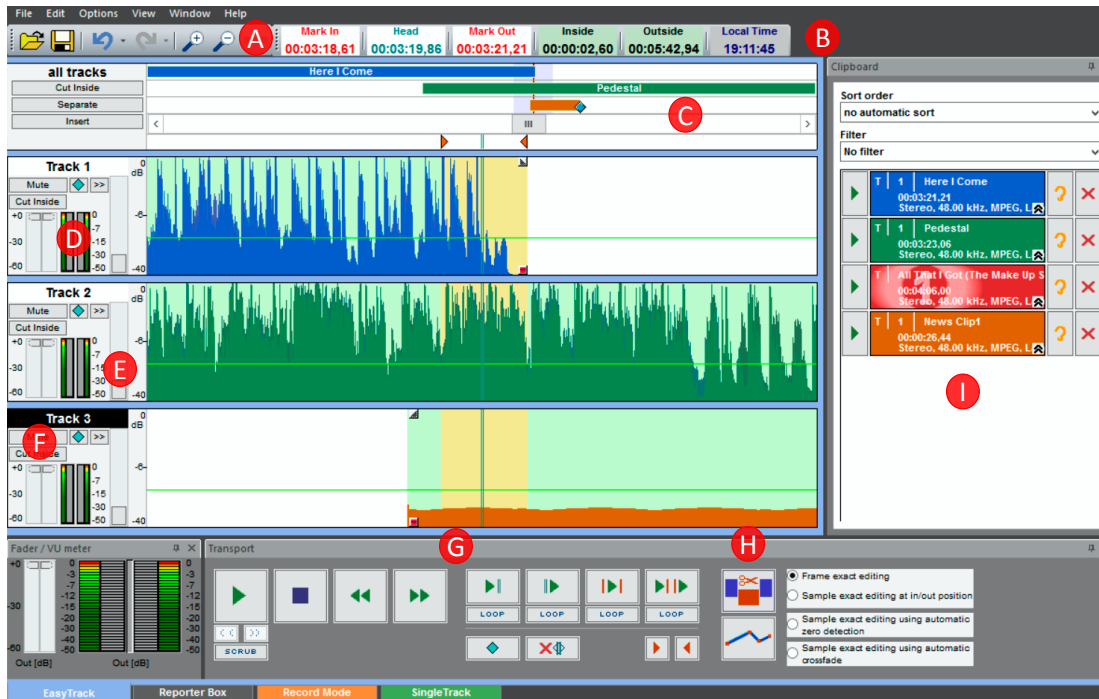
Window elements in the EasyTrack screen.

A	Symbol Bar	The symbol bar shows all applicable commands (see below).
B	Time Bar	The time bar may be individually labeled with time information for the project, or with real-time statements.
C	Track Overview	The track overview shows the complete project (all tracks, end-to-end). Clips may be imported with drag & drop from the clipboard, and moved within the track overview.
D	Volume Display	Shows the level of the current audio signal in the track.
E	Vertical Zoom	Each track has a vertical zoom bar, allowing to vertically stretch the waveform, with the volume remaining unchanged.
F	Track Buttons	Each track has its special buttons, depending on the selected mode, with its track-applicable functions (see below).
G	Transport Buttons	This field contains buttons for monitoring different areas.
H	Edit Mode	The most important cut function.
I	Clipboard	The clipboard contains all clips, used in the project, as well as the text elements for help in production in the ReporterBox.

6.2.   The Symbol Bar

The symbol bar shows the applicable commands:

Open Sound File:

Open (load) a sound file from a database or (if no database link exists) from a directory. After loading, it will be saved in the clipboard.

Save Sound File:

Saving the actual project as new sound file in a database, or (if no database link exists) in a directory.

Undo:

Undoing the last work step, by clicking the arrow, the list of the last working steps will be displayed for selection and undoing of multiple steps.

Redo:

Redoing of the last undone working step. By clicking the arrow, the list of the last undone working steps will be shown, allowing selecting and redoing multiple working steps.

Remove Pause at Start

If there is an empty area between the track start (all tracks) and the first audio object, then this area may be removed with this button. Otherwise, this button has no function and is shown in grey.

6.3.   The Track Overview

The track overview is a representation of the whole project over all 3 tracks, and the scrollbar.
Left, there are 3 buttons with cut commands, referring to all 3 tracks.
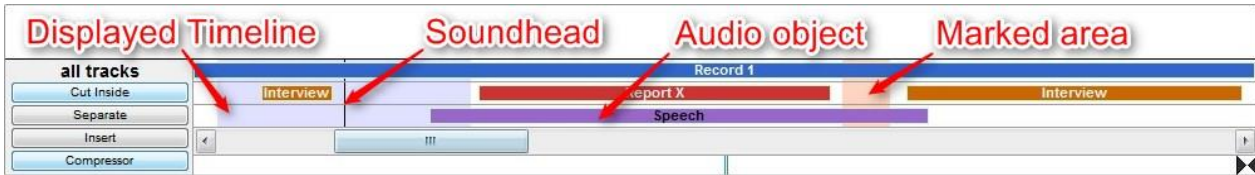
The track overview shows all objects of the actual project. Audio objects may be imported into the overview, and be marked and moved there.

• The light blue highlighted area represents the timeline displayed.

• The vertical line in the midst of the light blue area shows the sound head position.

Marked audio objects are identified by black borders.

Cut Inside	The areas of the 3 tracks marked by in and out markers will be cut at all 3 tracks.
Separate	The audio blocks will be separated at the actual sound head position in all tracks.
Insert	A pause will be inserted over all tracks, starting at the position of the in marker, and ending at the out marker.
Compressor	The compressor effect may be applied to all 3 tracks.
Visible Area	The actually visible area in the tracks.
Audio Objects	Display of all audio objects and its relative positions. The audio objects in the overview may be moved and copied with drag & drop, and also imported from the clipboard.
Sound Head	Actual sound head position.
Edit Area	The (edit) area marked by in and out markers.
Sound Head Bar	Contains the sound head icon, which always is in the middle of the track area, and the in and out markers, which, differently from the MultiTrack Editor, are set in this bar, not in the waveform.

6.4. The Track section
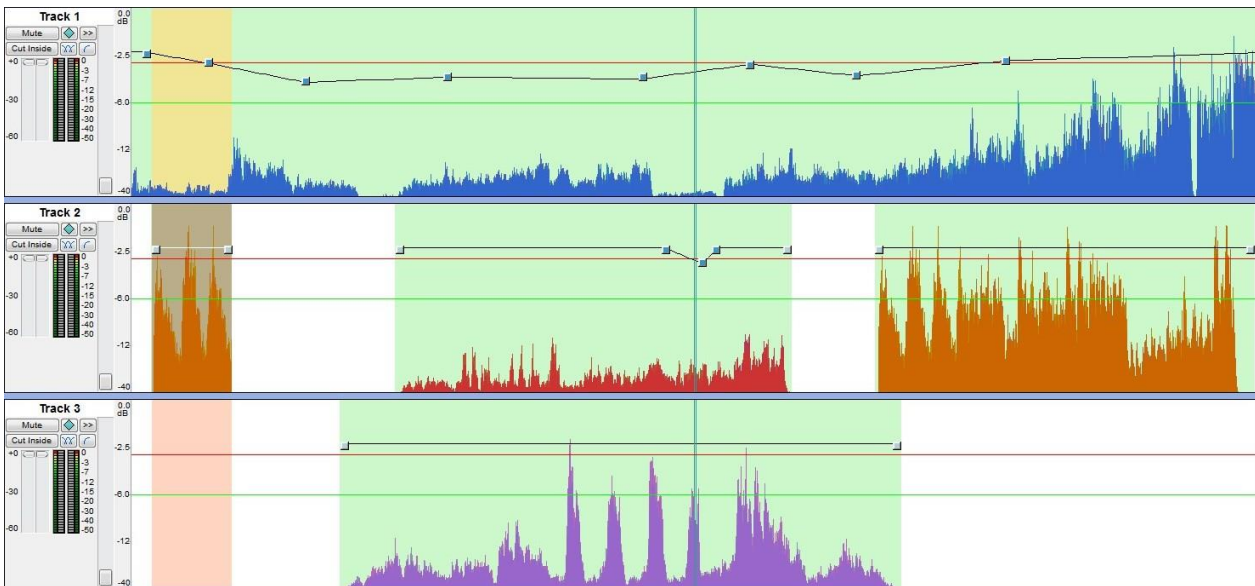
The track section is the core working area of the EasyTrack screen. It is comprised of the waveforms and function buttons for each particular track, and the sound head bar with in and out markers.

In contrast to the MultiTrack Editor, in the EasyTrack screen one does not choose between different track displays, but chooses the functional area, which then shows the required elements.

The functional areas are activated with 2 buttons next to the transport buttons. These are:

- **The Functional Area "Cut"**

In the functional area cut, it is possible to cut audio objects. In addition to the editing work by defining an edit area, now this is provided setting and moving of Trim buttons.

- **The Functional Area "Volume"**

In the functional area volume blinds are added by setting fade points. The track section displays audio objects as an envelope. The area marked by Marker in and out is displayed on a light background, while the unmarked parts of an audio object are displayed light green. Outside of Audio elements the track background is white. Marked audio objects are displayed on black background and can be moved here.
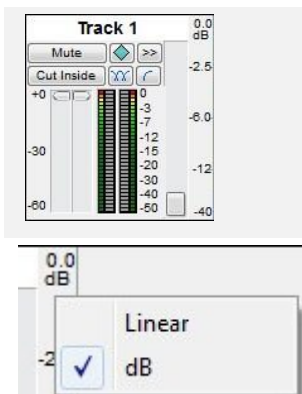
On the left side of every track there are different buttons, sliders and a menu button with commands referring to the according track.

The track name is a text field, in which you can enter an appropriate name for the track. This field is also used to change the tracks position (up, middle, and bottom) by drag & drop.

Switching the Y-Axis Scaling of the Volume scale 🌐

Right click into the scaling area to switch between dB and linear (%) display.

6.5.   The Multifunction Clipboard

The multifunction Clipboard contains all clips and original takes loaded to the editor.

	Head Bar
	To rearrange the clipboard in the Editor or to separate it as independent Window, move the cursor on the head bar and hold the mouse button pressed, while moving the window.
	In this moment there will appear the so called "Movement Cross" in the middle of the window and single arrow symbols on the side borders.
	Now move the clipboard on one of the arrow symbols to rearrange the window accordingly, otherwise it remains as an independent window.
	Sort Order
	The clip elements may be sorted for the following criteria:
	No sorting, name ascending, name descending, length ascending, length descending.
	Filter
	In this drop down menu the kinds of elements displayed may be defined:
	No filter, all audio clips, original audio clips, edited audio clips, text clips, data clips.
	Prelisten
	Plays the clip for prelistening purposes.

Delete

Deletes the clip. A control dialog appears:

To skip the control dialog, hold down CTRL while clicking on the delete button.

If you delete this take all references to it will be removed. Do you want to continue ? : Record 1 (not undoable)

Yes   No

PLEASE NOTE: Deleting an original track also deletes all clips originating from this track!

Retract / Expand:

Clips / takes may be displayed as single line (compact) or as multiple lines (info)

Single line: clip or take name, or, with an audio file imported from outside of the DigaSystem, the file name

Multiple lines: additionally the length and the clip's audio format.

Clicking the arrow on a clip performs a display switch. SHIFT+click on the arrow button: switches all clips.

T 1 Record 1

T 1 Record 1
00:05:50.22
Stereo, 44.10 kHz, MPEG, Layer 2, 256 kBit/s

Clip colors

Properties...
Refresh
Load Timestamps
Recalculate Waveform

In the context menu (right click) of the clipboard, elements can be given a specific color. All colors will also be assigned sequentially and automatically. Clips are assigned the same colors as the originating tasks.

Recalculate Waveform

Now and then it is possible, that audio takes display a wrong waveform. In this case the waveform can be recalculated. This recalculation is not saved in the source file and therefor used only in the current session; when a new file is created due to a saving process, the recalculation is done automatically.

6.6.   Function Areas

Editing of audio in the EasyTrack screen is really simple. After selecting one of the areas cut or volume by two function area buttons, you can work only with mouse buttons directly in the Tracks.

6.6.1.   CUT MODE
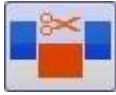
By clicking on the cut mode button, the cut mode is activated. In the cut mode audio objects can be cut with two possible methods:

By Cut Buttons:

Defining cut area by setting start and end marker, executing the cut by using the buttons cut inside for all tracks or for a selected track, or choose a cut command by using the arrow button (>>) in a selected Track.

By Trim Buttons

Right click on the wished cut position. There will be two new trim buttons created.

Move the trim buttons to the desired position; as the case may be move the objects to the desired position.

○ frame exact editing
◉ sample exact editing at In/Out position
○ sample exact editing using automatic zero detection
○ sample exact editing using automatic crossfade

Cut Positions

The default setting frame exact editing allows cutting at the borders of the MPEG Frames.

When switching from frame-exact editing to sample-exact editing there might appear an info window, which explains the modifications, resulting of the sample-exact editing. When confirmed with "yes" it's not possible to switch back to frame-exact editing.

You are working with audioformats that can only be edited in frame units. If you want to work on single samples, creating new takes can afford some more time in certain cases. You can switch back to frame editing only when all tracks are empty. Do you want to switch to sample exact editing?

[Yes]   [No]   [Cancel]

Sample exact Editing at In/Out Positions

The cut will be performed exactly at the positions of the in and out markers. This may create an audio click at the cut position, if the cut has been done at the plus and minus wave.
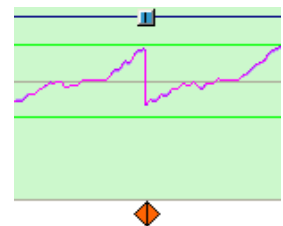
Sample exact Editing at the next zero crossing Point

The cut will be done precisely at the wave's next zero crossing point. This avoids an audio click, resulting from a cut of a plus wave with a minus wave.

Sample exact Editing with automatic Crossfade

The cut will be done precisely at sample boundaries; an automatic crossfade inhibits a potential audio click.

6.6.2.   VOLUME MODE

By clicking on the volume mode button, the volume mode is being activated. In the volume mode audio objects may be faded:

- A right click on the chosen position of the desired object creates a new volume button.

- Pull this button in the shown direction (default: vertical) until the correct setting is reached.

- Right click on the button to switch its direction into horizontal. Now move the button with the left mouse button in horizontal direction.

7. The MultiTrack Screen

The MultiTrack screen enables the administration and editing of objects with an unlimited number of tracks. Each track may be visualized in 3 different views and with different resolutions. Besides the usual edit functions for track objects, additional MultiTrack functions like synchronization, group building, fading and level changes etc. are available. Other, rather non-typical, however, very useful functions are the administration of hidden tracks, crossfading between two objects on one track, complex auto-ducking options and powerful undo/redo functions.

The toolbar accesses the most common functions. Individually configurable time meters give a quick overview for marked areas, sound head positions or other important timing information. Large buttons control transport- or advanced playback functions (play, loop, trim, scrub, etc.).

Inserting clips from the Multi-Format Clipboard or moving clips between tracks is possible by simple drag & drop.

7.1.   Window Areas and Elements

In the following image you see a typical window of the MultiTrack screen with its window areas, elements and buttons. The MultiTrack screen is for arranging, synchronization and the actual producing of entries.
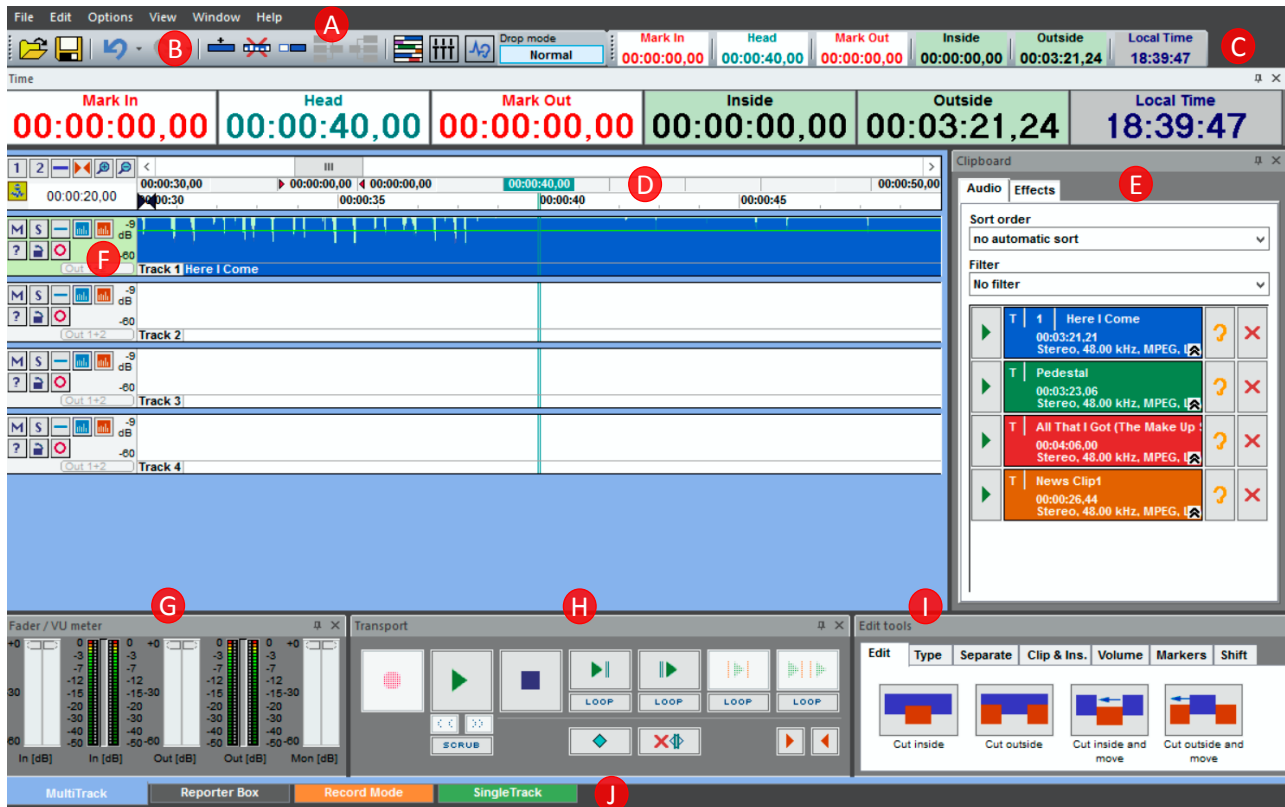
Window elements in the MultiTrack screen (explanation below)

A	Menu Bar
B	Symbol Bar
C	Time Bar
D	Track Overview
E	Clipboard
F	Track Buttons & Vertical Zoom
G	VU Meter
H	Transport Buttons
I	Edit Tools
J	Working Pages

|	
Menu Bar	The menu bar contains the applicable menus of the actual window. Each pull-down menu may be activated by clicking its name.
Symbol Bar	The symbol bar contains the screen-relevant commands.
Time Bar	The time bar may be individually labeled with project or real-time information.
Drop Mode	The drop mode includes several options to import clips from the clipboard to the timeline, for example a clip may be inserted to another one.
Track Overview	The track overview shows the whole project (all tracks from start to end). It is de- / activated by the button ▦ in the symbol bar. Clips can be imported by drag & drop from the clipboard to the track overview and also be moved here.
Display Bar	The display bar displays several resolution buttons, the scrollbar for waveforms and various waveform data, like resolution, sound head position and markers.
Vertical Zoom	Tracks in edit mode have a vertical zoom bar, enabling waveforms to be vertically stretched, with untouched volume levels.
Track Buttons	Each track has applicable buttons for general track functions depending on the currently adjusted track mode. (see below)
Clipboard	The clipboard contains all clips and takes required for the project and text elements for production support in the ReporterBox.
	Clip Colors In the context menu (right mouse click) there are now new colors in direct access for faster application. Colors will be automatically and sequentially applied at loading takes. Clips get the same colors as the originating takes. **Recalculate Waveform** Now and then it is possible, that audio takes display a wrong waveform. In this case the waveform can be recalculated. This recalculation is not saved in the source file and therefor used only in the current session; when a new file is created due to a saving process, the recalculation is done automatically.
	Sound Effects The MultiTrack and EasyTrack Editors have an Effects tab in the clipboard. Here, the 4 available effects EasyEqualizer, Parametric Equalizer, Subsonic Filter and Compressor, as well as all installed DirectX or VST effects will be shown, and may be assigned to particular objects, to a complete track or to the complete project.
Transport Buttons	This field contains monitoring buttons for several areas.
Level Meters	Displays monitoring and recording signal levels.

7.2. The Symbol Bar

The Symbol Bar shows the applicable commands for each screen:
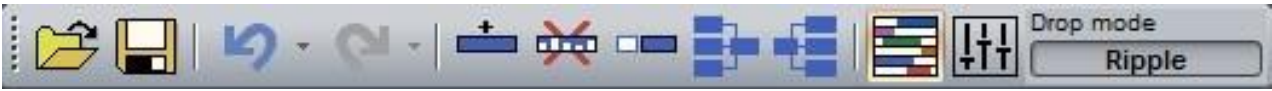
Open Sound File

Open (load) a sound file from a database or (if no DB link exists) from a directory. After loading, it will be saved in the clipboard.

Save Sound File

Saves the actual project as new sound file in a DB, or (if no DB link exists) in a directory.

Undo

Undoing the last work step, by clicking the arrow, the list of the last working steps will be displayed for selection and undoing of multiple steps.

Redo

Redoing of the last undone work step. By clicking the arrow, the list of the last undone working steps will be shown, allowing selecting and undoing multiple working steps.

Add Track

Adds an additional track.

Remove Track

Removes a single or multiple tracks, selectable in the following dialog:
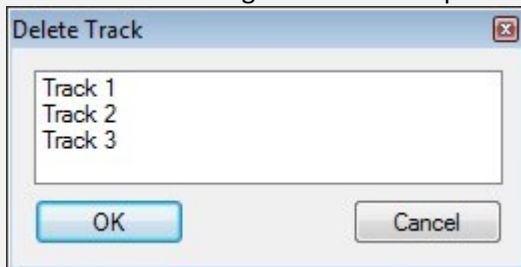
Remove Pause at Start

If there is an empty area between the track start (all tracks) and the first audio object, then this area may be removed with this button. Otherwise, this button has no function and is shown in grey.

Grouping

Gruppieren von mehreren Objekte zu einem gruppierten Objekt.

Resolve Group

Resolves a group into its single objects.

Track Overview

Shows/hides the track overview.
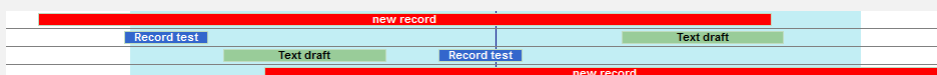
Track Mixer

Shows/hides the Track Mixer
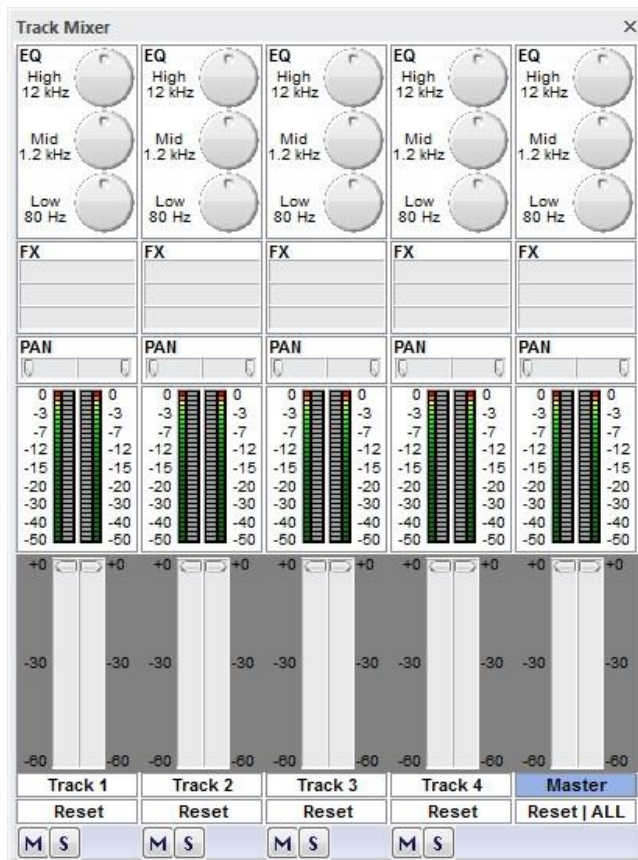
Drop mode **Normal**	Drop mode **Normal:** A clip may be added before or after an object in the track. The object in the timeline remains unchanged.
Drop mode **Ripple**	Drop mode **Ripple:** A take/clip may be inserted within another object in the track. The object part after the insert position will be shifted by the length of the inserted clip.
Drop mode **Ripple all**	Drop mode **Ripple all:** A take/clip may be inserted within another object over all tracks. The object part after the insert position will be shifted by the length of the inserted clip.
Drop mode **Overwrite**	Drop mode **Overwrite:** A take/clip may be inserted within another object in the track. The track contents, starting from the insert position, will be overwritten by the length of the inserted clip.

7.3.   The Overview Window

The overview window is a representation of the whole project over all tracks.

Visible Area	The currently displayed track area.
Audio Objects	Shows all audio objects in its relative positions. The audio objects may be moved and copied within the overview with drag & drop, and also be copied from the clipboard.
Sound Head	The actual sound head position
Timeline	The cut area marked by in and out markers.

7.4.   Display Bar
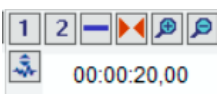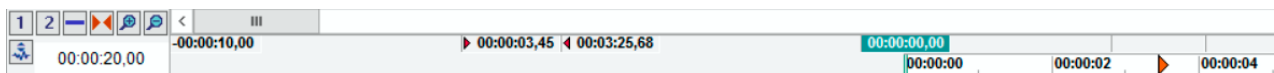
	Resolution Buttons
	Setting the waveform resolution
	The buttons 1 2 may be freely defined in the field below
	The button — shows the length of the total project
	The button ▶◀ shows the selected area
	The buttons ⊕ ⊖ zoom in/out by doubling/halving the displayed area
	The 00:00:20,00 time field is for entering the desired zoom
	The button activates/deactivates the waveform offset
	Scrollbar
	The scrollbar shifts the soundhead quickly and easily to any project position. With elements in the scrollbar, also rather remote positions in a take may be reached.
00:00:01,45	**Start Position**
	Shows the position at the start of the waveform window.
▶ 00:00:02,45 ◀ 00:00:13,15	**In and Out Marker Position**
	Shows the position of in and out markers.
00:00:12,54	**Soundhead Position**
	Shows the soundhead position.
00:00:05	**Time Display**
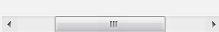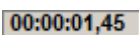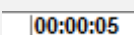
	Time overview for the actual session.
	Sync Points Position Shows various sync points the positions
	Nearby Marker Positions Shows markers close to the soundhead, with track number, take name and marker type.
	End Position Shows the position at the end of the waveform window.

7.5.　　Multifunction Clipboard

The Multifunction Clipboard contains all loaded original takes, and the clips which originate from these takes. Exclusively for the MultiTrack Editor, in a second area, there are all standard and installed DirectX and VST effects.

	Head Bar: To rearrange the clipboard in the Editor or to separate it as independent Window, move the cursor on the head bar and hold the mouse button pressed, while moving the window. In this moment there will appear the so called "Movement Cross" in the middle of the window and single arrow symbols on the side borders. Now move the clipboard on one of the arrow symbols to rearrange the window accordingly, otherwise it remains as an independent window.
	Sort Order: The clip elements may be sorted for the following criteria:

	No sorting, name ascending, name descending, length ascending, length descending.
	Filter:
	In this drop down menu the kinds of elements displayed may be defined:
	No filter, all audio clips, original audio clips, edited audio clips, text clips, data clips.
	Prelisten:
	Plays the clip for prelistening purposes.
	Delete:
	Deletes the clip. A control dialog appears:
	To skip the control dialog, hold down CTRL while clicking on the delete button.
	If you delete this take all references to it will be removed. Do you want to continue ? : Record 1 (not undoable)
	Yes No
	PLEASE NOTE: Deleting an original track also deletes all clips originating from this track !
	Retract / Expand:
	Clips / takes may be displayed as single line (compact) or as multiple lines (info)
	Single line: clip or take name, or, with an audio file imported from outside of the DigaSystem, the file name
	Multiple lines: additionally the length and the clip's audio format.
	Clicking the arrow on a clip performs a display switch. SHIFT+click on the arrow button: switches all clips.
	T 1 Record 1 ✕
	T 1 Record 1 00:05:50.22 Stereo, 44.10 kHz, MPEG, Layer 2, 256 kBit/s ✕
	Clip colors:
	In the context menu (right click) of the clipboard, elements can be given a specific color. All colors will also be assigned sequentially and automatically. Clips are assigned the same colors as the originating tasks.
	Recalculate Waveform
	Now and then it is possible, that audio takes display a wrong waveform. In this case the waveform can be recalculated. This recalculation is not saved in the source file and therefor used only in the current session; when a new file is created due to a saving process, the recalculation is done automatically.

7.6.   Track

Depending on the selected view, the track head area has different functional buttons, which are only available in this view.

7.6.1.   TRACK HEAD AREA
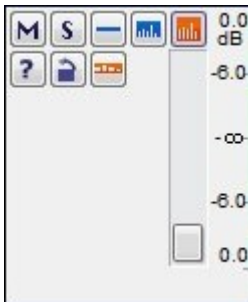
The track head area has function buttons and a vertical zoom control.

Clicking the track head results in changing its color to light green. Several tracks may be selected, per Windows standard:

SHIFT+click selects multiple tracks, while CTRL+click un-/selects one track.

In this way, commands may be executed for several tracks (for example, cut selected areas); non selected tracks remain unchanged.

7.6.2.   MINIMIZED VIEW

The minimized view is the smallest track view for waveform displays. This view is supposed to scale down the track size, if not required for the actual work.

Consequently, only a few basic functions are available for playback of that track. The track will be displayed as bar with the file name. There are no functions assigned to the bar.

The Mute Button

Mutes the track, it will not be replayed.

The Solo Button

Switches the track to solo, so that only this track will be replayed.

This also works with a double click on the select area (the lower area of the audio object, which holds its name).

Minimized View

The highlighted button indicates the active minimized view.

Block View

Switches to block view mode of the selected track.

Edit View

Switches to edit view of the selected track.

7.6.3. BLOCK DISPLAY
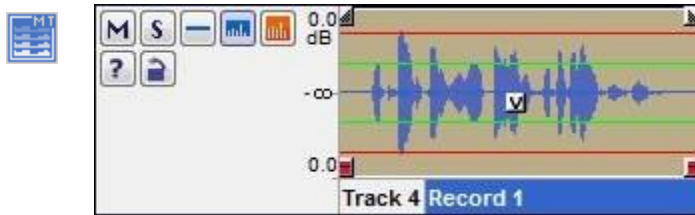
The block view primarily is for track synchronization and track volume control.

The object will be displayed as waveform with integrated **VOLUME** and **FADE** buttons. Below the waveform is the track block with the object name. For more details, see below.

MUTE Button	
mutes the track, it will not be replayed.	

MUTE Button

mutes the track, it will not be replayed.

SOLO Button

switches the track to solo, so that only this track will be replayed.

MINIMIZED VIEW

switches to minimized view

BLOCK VIEW

The highlighted button indicates the active block view

EDIT VIEW

switches to edit view

TRACK INFO

shows the information for that track. For more details, please see Working steps - MultiTrack screen - Block Display

LOCK TRACK

This button locks/unlocks a track. After locking, the track may not be edited. The background of a blocked track appears grey.

7.6.4.   EDIT VIEW
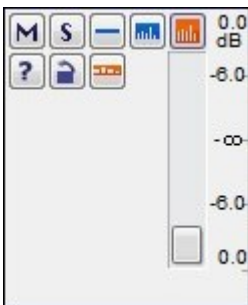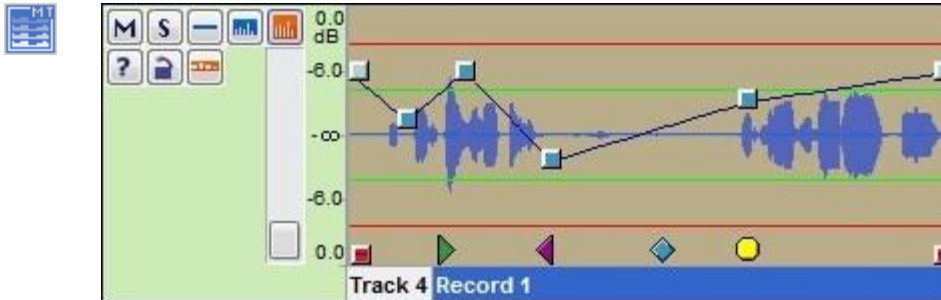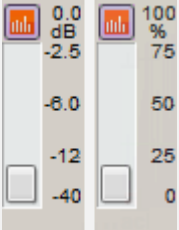
The edit view primarily is for versatile track editing, like marking, cutting, fading, inserting, grading, trimming, clip creation etc.

The object is displayed as big waveform, as known from the SingleTrack screen. In edit view, at the waveform foreground, there are **FADING** and **TRIM** buttons, which may be individually set, shifted and deleted. Directly below the waveform is the track block with track name, the selected area, the window section, and the names of the audio objects. For more details for the functions within the waveform please see below ("Working steps in Edit View").

Below the waveform are the cut tabs. A track may be copied from the edit display to the SingleTrack screen, cut, and then copied back to the MultiTrack screen.

	MUTE Button
	mutes the track, it will not be replayed

	SOLO Button
	switches the track to solo, so that only this track will be replayed

	MINIMIZED VIEW
	switches to minimized view

	BLOCK VIEW
	Switches to block view

	EDIT VIEW
	The highlighted button indicates the active edit view

	TRACK INFO
	shows the information for that track. For more details, please see Working steps - MultiTrack screen - Block Display

	Lock Track
	This button locks/unlocks a track. After locking, the track may not be edited. The background of a blocked track appears grey.

	Copy to SingleTrack
	A copy of this track will be transferred to the SingleTrack screen. As described below, there it may be edited and copied back to the MultiTrack screen.

Switch Volume scale type 🌐

Right click the scaling display to switch between dB and linear (%) view.

7.6.5. TRACK SIZING 🌐

In block and edit view all tracks from now on are variable in their vertical width; "grabbing" the lower border of a track with the left mouse button enables de-/magnifying of that track. If the CTRL key is held, then the track width will be assumed for all other tracks.

7.7. Edit Tools

Once a track is switched to edit mode, the edit tools are displayed. All cut commands are located in the edit toolbar, which contains several tabs.

7.7.1. EDIT TAB
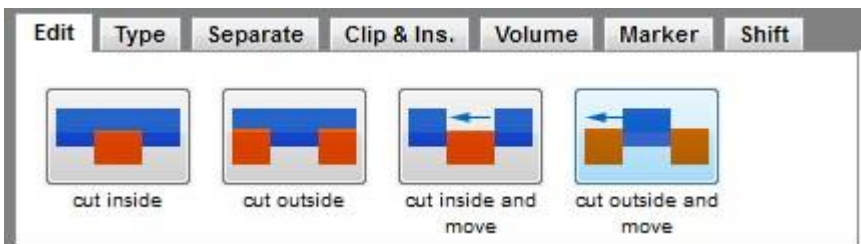
Cut Inside

The selected area will be cut, resulting in a pause. The areas before and after the cut will not be separated, but will be treated as 1 object at synchronization.
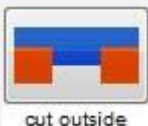
cut outside

The parts outside of the selected area will be cut. In that track, only the selected area remains.

cut inside and move

The selected area will be cut by this button, the part after the cut will be appended, and there will be no pause. This is equivalent to the cut inside function of Edigas. Both parts will be treated as 1 object.

cut outside and move

The parts outside of the selected area will be cut, the remaining area will be moved to the very beginning.

7.7.2. TYPE TAB

| Edit | Type | Separate | Clip & Ins. | Volume | Marker | Shift |

○ frame exact editing
◉ sample exact editing at In/Out position
○ sample exact editing using automatic zero detection
○ sample exact editing using automatic crossfade

Frame exact Editing

This default setting allows for a cut exactly at MPEG frame boundaries (which is less accurate than sample exact editing). If sample exact cut has been selected, then a warning appears, that switching back to frame cut is only possible if all tracks are empty.

Sample exact Editing at In/Out Positions

The cut will be performed precisely at the positions of the in and out markers. This may create an audio click at the cut position, if the cut has been done at the plus and minus wave.
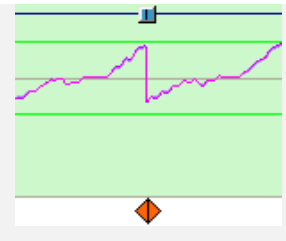
Sample exact Editing at the next zero crossing Point

The cut will be done precisely at the wave's next zero crossing point. This avoids an audio click, resulting from a cut of a plus wave with a minus wave.
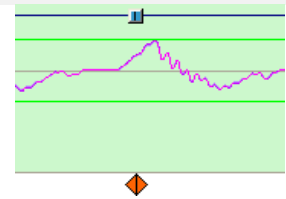
Sample exact Editing with automatic Crossfade

The cut will be done precisely at sample boundaries, an automatic crossfade inhibits a potential audio click. The crossfade is app. 5 msec long and will not be shown in the waveform. The calculation of the crossfade is done with the output.
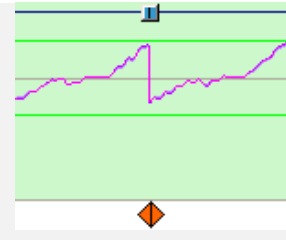
7.7.3. SEPARATE TAB
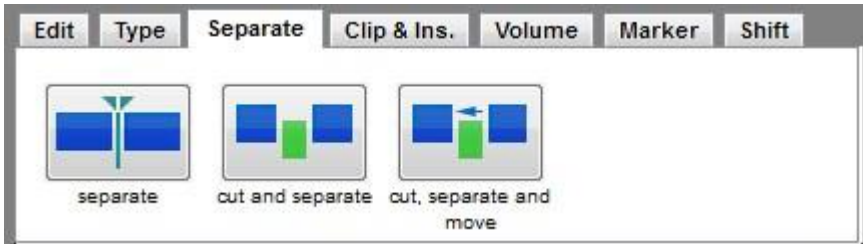
Separate

The object will be separated at the soundhead position, enabling the separate synchronization of both parts.
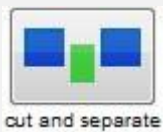
cut inside and separate

The selected area will be cut, both remaining parts will be separated, enabling the separate synchronization of both parts.

cut, separate and move

The selected area will be cut, the remaining parts will be separated, for later separate synchronization. The right part will be moved to the cut position. (similar with cut).

7.7.4. CLIP TAB
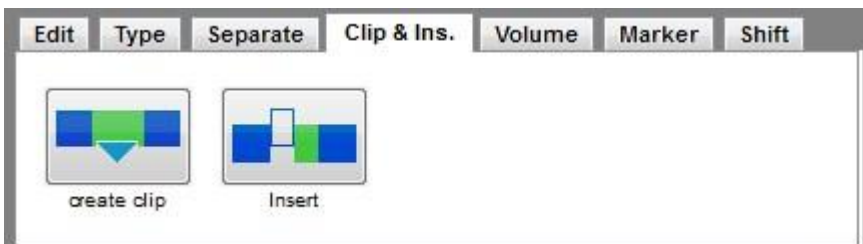
Create Clip

With this button, the selected area will be copied to the clipboard. A dialog box follows for entering name and color selection.
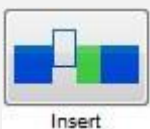
Insert

A pause with the length of the selected area will be inserted before the in marker. Both parts will then be treated as 2 objects.

7.7.5. VOLUME TAB
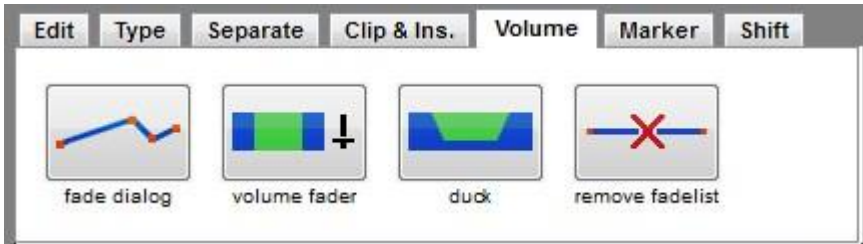
	Fade Dialog
	This button switches on the fading mode. In a dialog box, fade points may be set and shifted.
	Volume Fader
	With this button, the volume of a selected area may be corrected.
	Duck
	Within the selected area, a duck fade will be set. The parameters may be defined in Options - Autoduck - Properties.
	Remove Fadelist
	Within the selected area, all volume changes will be reset. The fade points outside of the deleted points will be connected.

7.7.6. MARKER TAB
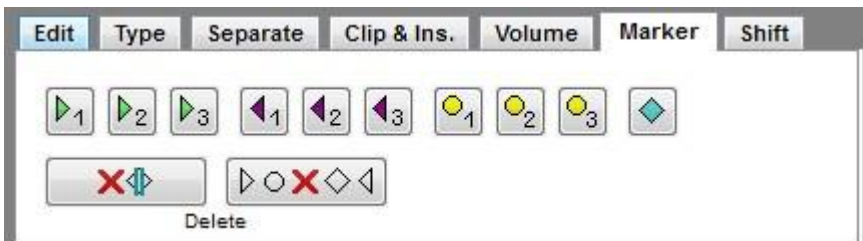
	Marker Type 0
	At the soundhead position, a locator will be set, which helps to retrieve the position.
	Marker Type 1
	At the soundhead position, an intro locator will be set.
	Marker Type 2
	At the soundhead position, an outro locator will be set.
	Marker Type 3
	At the soundhead position, a refrain locator will be set.
	Delete Marker
	The marker at which the soundhead is located will be removed.
	Delete all Markers
	Delete all markers of this track.

7.7.7.   SHIFT TAB
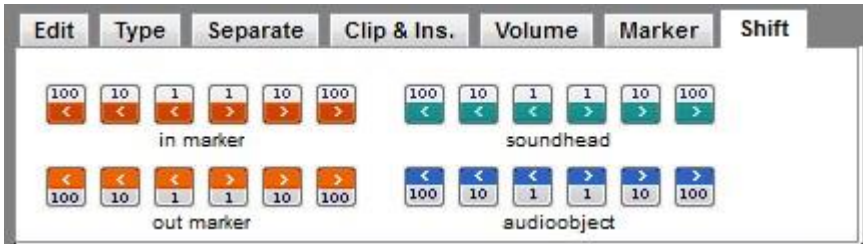
	Shift In Marker
	With this button, the in marker may be shifted by 100, 10 or 1 frame(s) to the right or left.
	Shift Soundhead
	With this button, the soundhead may be shifted by 100, 10 or 1 frame(s) to the right or left.
	Shift Out Marker
	With this button, the out marker may be shifted by 100, 10 or 1 frame(s) to the right or left.
	Shift Audio object
	With this button, a marked audio object may be shifted by 100, 10 or 1 frame(s) to the right or left.

8. The Reporter Box

The ReporterBox is targeted for clip production in near-live environments. Finished soundtracks may be added just by mouse clicks, text may be red from screen and recorded. A good example may be the production of an interview, using already existing answers from the DigaSystem. Questions, initially available in the form of text scripts, now should be loaded. Instead of recording questions separately and only later consolidate questions and answers in MultiTrack or EasyTrack, ReporterBox now supports interactive recording of questions and answers in one run.

Preparation: A script- and prompting area within ReporterBox enables story preparation with text and audio clips. Text may be generated locally, copied from Windows documents with drag&drop, imported from other applications, and then edited arbitrarily, with full RTF formatting support. Text paragraphs may be marked, and saved as text clips in the Multi-Format Clipboard. Inserting audio and text clips from the clipboard, moving it inside of a story, is also done by simple drag&drop.

At any time, the estimated total story time may be calculated; text sections will be considered with an adjustable speaker index.

Production: At recording, actual text blocks from scripts and prompting will be updated, allowing simple reading from screen. Audio clips may be inserted at any time to the current recording by just button clicks.

Optionally, the speaker micro may be muted during playback, or stay open for verbal interaction.

Recording may be stopped and repeated at/from any position. The monitor volume may be adjusted independently.

Once the recording has been completed to satisfaction, then the production may be transferred to MultiTrack or EasyTrack for fine-tuning, where the record and audio clips appear on one or two tracks.

8.1.   Window Sections and Elements

A typical screenshot of the ReporterBox is shown in the screenshot below, with explanation of elements differing from other screens. The ReporterBox is targeted for the production of elements saved in the clipboard. Reading from screen can be recorded and sound bites added simultaneously.
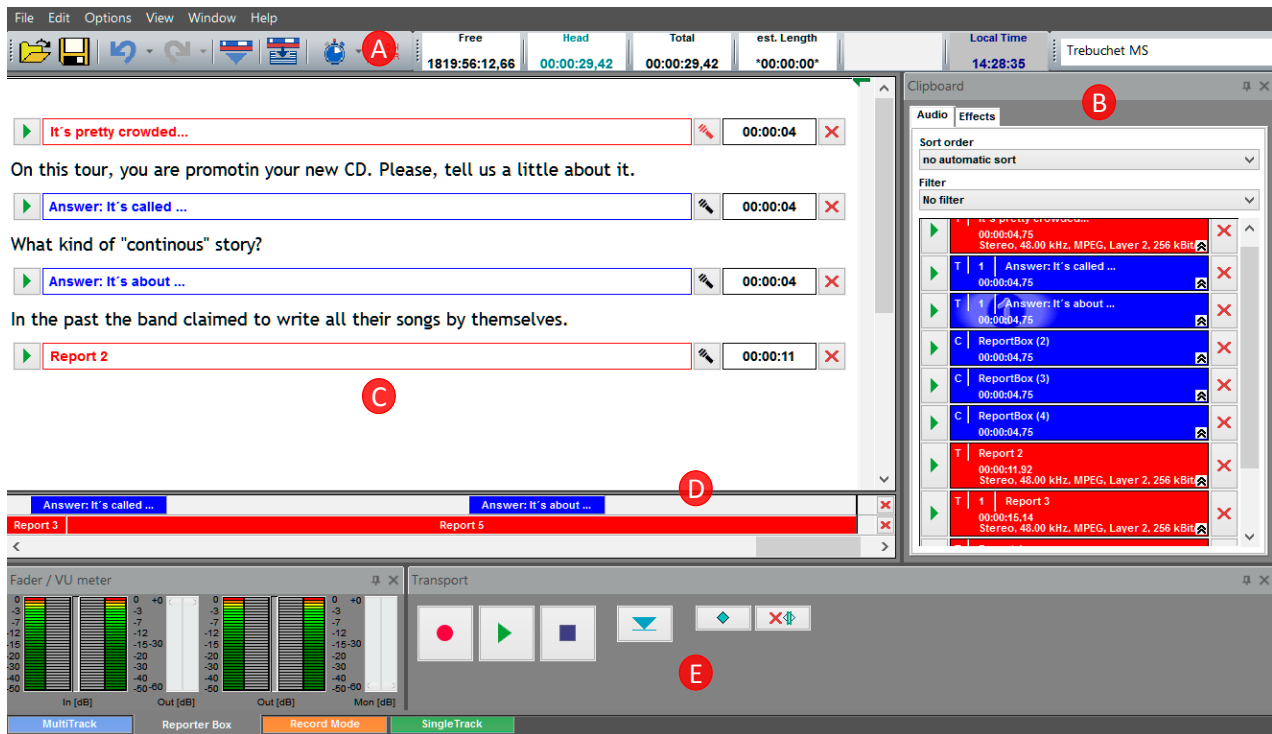
Audio Editor ReporterBox Window Sections

A	Symbol Bar
B	Clipboard
C	Sequence Board
D	Record Tracks
E	Transport Buttons

Symbol Bar	The symbol bar shows the valid commands for this screen (see details below).
Sequence Board	Audio and text components will be moved with drag&drop from the clipboard to the sequence board, which automatically scrolls with the start of the production.
Clipboard	The required clips will be moved from the clipboard to the according text field block
Playback and Recording Track	Shows the playback and recording track during the current production.

8.2.   The Symbol Bar

The symbol bar displays the available commands:

Open (load) of a sound file, followed by the Windows Select Box. After loading of the selected file, it will be saved in the clipboard.

Saving of the actual project as a new sound file.

Undo the last work step. By clicking the arrow, a list of the last working steps will be displayed, from there, several steps may be selected and undone.

Redo the last undone work step. By clicking the arrow, a list of the last undone steps will be displayed, from there, several steps may be selected and redone.

Saving of the finished production as a new clip, from the playback or recording track to the clipboard.

Export of the finished production to another screen. The submenu offers the following options:

Copy to one Track

in the MultiTrack or EasyTrack screen. If a project already exists there, then it will be deleted.

Copy to two Tracks

in the MultiTrack or EasyTrack screen. If a project already exists there, then it will be deleted.

Copy to one additional Track

Adding the finished production to one additional track in the MultiTrack screen (not available for EasyTrack). If a project already exists there, then it will be kept.

Copy to two additional Tracks

Adding the finished production to two additional tracks in the MultiTrack screen (not available for EasyTrack). If a project already exists there, then it will be kept.

Copy to SingleTrack Screen

Export of a finished production to the SingleTrack screen.
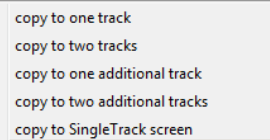
Length Estimation

Calculation of the estimated production length. By clicking the arrow, several repositories listed in DigaSystem may be selected, or define a speed of speech.

The personal pace of speech may be determined with the application DigaSpeed (not part of the standard delivery, but may be requested from DAVID free of cost).
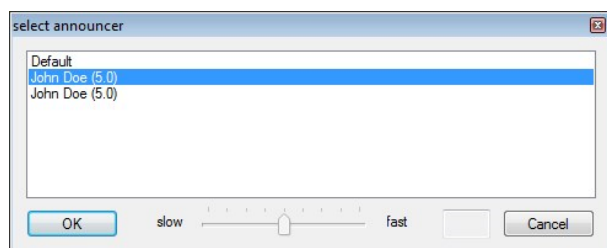
Live Mode:

With the live mode activated, volume changes within the inserted audio material will be recorded by the DigaStudio Editor's mixer during the current production. In this case however, the two tracks may not be edited individually, as the 2 sources (record track and added audio components) will be mixed into one track.

9. General Workflows

The following working steps are available in all audio editors.

9.1.   Open Audio Editor

9.1.1.   FROM THE DIGASYSTEM DATABASE MANAGER

- Open the DigaSystem Database Manager.

- Click **MULTITRACK EDITOR (**or **EASYTRACK** or **SINGLETRACK EDITOR)**.

9.1.2.   FROM THE DESKTOP / START MENU

1. Double-click **MULTITRACK V5.EXE (**or **EASYTRACK** or **SINGLETRACK**), or select **MULTITRACK** (or **EASYTRACK** or **SINGLETRACK**) in the DigaSystem start menu.
   A dialog box appears:

2. Enter your name and password. The DigaSystem Administrator will then generate user rights for you. For more details please see the Technical Documentation.

9.2.   Load a Take

- Drag the desired clip or project from the DigaSystem database to the button **MULTITRACK (EASYTRACK, SINGLETRACK)** in the Database Manager. The clip or project will be copied to the clipboard of the selected editor. To load several tasks at the same time, please mark these with the SHIFT+CTRL keys held, and drag these to the editor icon.

  or:

- to minimize the Audio Editor window to the lower window half, select WINDOW – LOWER HALF in the DigaSystem Database Manager. Drag the desired clip or project from the DigaSystem Database to the audio editor's clipboard.

  Or, if you work with the Audio Editor:

- Click **OPEN SOUND FILE** in the symbol bar. If connected to a database, it will be opened and a take can be selected (for more details please see the Database Manager Manual). If the Audio Editor is operating standalone (without DigaSystem connection), then the Windows dialog appears. Select a file from an available directory.

9.3.   Working with the Clipboard
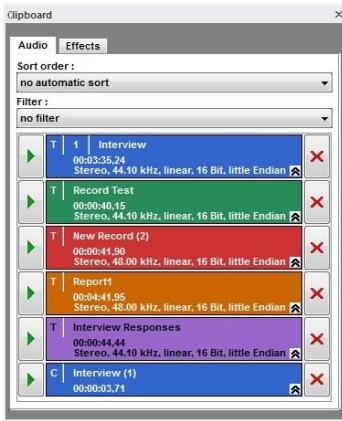
The clipboard at the right edge of the Audio Editor contains all required clips. It may contain takes (original clips from the database or Audio Editor records), clips (cuts from takes) and text clips, and this way serves as buffer for individual elements.

9.3.1.   DISPLAY OF CLIPS

Clips / takes may be displayed single line (compact) or multi line (info).

Single line:

Clip or take name, or with an audio file,

imported from outside of the DigaSystem, the file name

Expanded:

Additionally the length and the clip's audio format.

Clicking the arrow on a clip performs a display switch. **SHIFT+Click** on the arrow button: switches all clips.

9.3.2.   CREATE CLIP

Clips may be created in all screens:
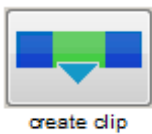
In the MultiTrack screen:

1.   Change the desired track to edit view

2.   Mark the area to be saved as clip with in and out markers.

3.   Click **CREATE CLIP** in the **CLIP** tab.

In the ReporterBox:

1.   Exit ReporterBox production.

2.   Click **CREATE CLIP** in the symbol bar.

In the Record screen:

1.   Finish the recording or text entry and enter the name for the clip to be created.

2.   Click **AUDIO TAKE**, to create a clip, or

3.   Click **AUDIO TEXT TAKE**, to create a combined audio/text take, or

4.   Click **AUDIO TEXT CLIP** to create a text clip.

In the SingleTrack screen:

1. Mark the area to be saved as clip with in and out markers.
2. Click **CREATE CLIP** above the track overview.

9.3.3. CLIP DIALOG

For clip editing after creation:

Open the clip with by double-clicking. A dialog box appears:

1. Use the transport buttons for monitoring the clip.

2. Correct the clip name, enter first and last word of the clip, this may later be helpful for production in the ReporterBox.

3. Select an appropriate color.

4. Enter the moderation text for preparation of the ReporterBox production.

5. For the text, select one of the options INSERT TEXT BEFORE or INSERT TEXT AFTER (before or after the clip's audio). This refers to the text insert position, when the clip is on the ReporterBox production list

9.3.4. SORT CLIPS

It is user selectable which clips should be displayed, and in which order these should be sorted:

To define the sorting order, select one of the options from **SORT ORDER**: If **NO AUTOMATIC SORT** is selected, then the clips appear in the order of their creation.
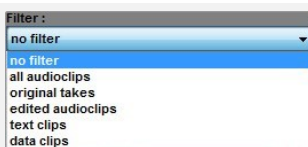
To define the type of clip, select one of the options from **FILTER**:

9.3.5.   INSERT CLIPS

Clips may be inserted in SingleTrack-, MultiTrack-, and ReporterBox screens:

MultiTrack screen:

1. Drag the clip to the desired position within the track or within the track overview.
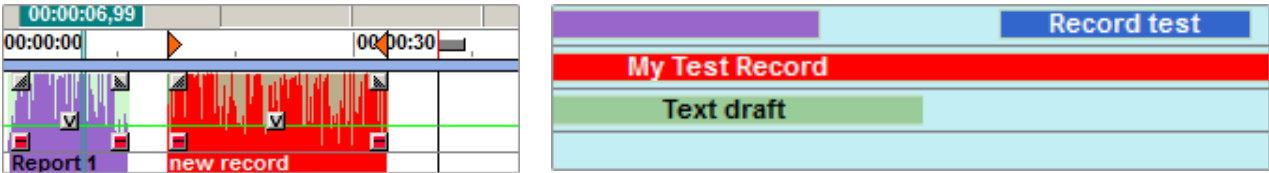
Optimized Insert:

1. Insert the first clip/take into a track and start playback.

2. Hold down CTRL + SHIFT and click the desired clip/take. It will be copied instantly into the next available track, at the actual soundhead position.

3. The next clip may be inserted instantly, again with CTRL + SHIFT + Left mouse button.

Reporter Box:

Drag the clip to the desired position within the production list.

SingleTrack screen:

Drag the clip to the desired position within the track overview (also for later insertion). More clips then will be inserted before or after the soundhead position, depending on the object's placement left or right from the sound-head position, before releasing the mouse button (in the track overview, see below). You may also middle click a clipboard element to load it into the track overview. With this, all elements in the overview will be removed.

9.3.6.   DELETE CLIP

Click **DELETE CLIP** at the left side. The following control dialog appears:

If you delete this take all references to it will be removed. Do you want to continue ? : Record 1 (not undoable)

Yes   No

Skip Control Dialog: If you want to delete a clip without this confirmation, hold the CTRL key when you click the **DELETE CLIP** button.

ATTENTION: Deleting an original track also deletes all clips originating from this take.

As clips only contain references to the original takes, and no audio data, these are lost if the original take is deleted. Please be very careful when deleting takes during a production.

9.4. The Time Bar

The time bar of each screen shows the applicable information for the selected screen. It can be moved or released by drag & drop. This Time Bar can only be embedded in the surface within the tool bar area.

Mark In	Head	Mark Out	Inside	Outside	Local Time
00:00:50,21	00:00:56,00	00:00:50,21	00:00:00,00	00:05:50,84	15:57:28

9.4.1. ADDITIONAL TIMES WINDOW

A second, larger and resizable variant of the time bar can be called in the **VIEW** menu (select "times window"). This window behaves like an own GUI section and can be embedded anywhere in the editor.

Time					✕
Mark In	**Head**	**Mark Out**	**Inside**	**Outside**	**Local Time**
00:00:00,00	00:00:00,00	00:00:00,00	00:00:00,00	00:00:00,00	09:33:54

9.4.2. SETTING TIME INFORMATION FIELDS

Right clicking the desired time information field opens this dialog box. Select now one of the available points:

Title	Defaulted, but freely selectable
Offset	The actual value may be de- or increased, for example for the actual New York time minus 6 hours (see diagram below).
Sound Head	Sound head position
Total Length	Total project length, i.e. all tracks
Clock	Actual wall-clock time
Free for Record	Total hard disk storage capacity
Estimated Length	Calculated total production length (audio and text (based on selected speed of speech)) in the ReporterBox
Mark In	Position of the in marker
Mark Out	Position of the out marker
Within Markers	Length of the selected area
Outside Markers	Length outside of the selected area
Take Absolut	Sound head position of the selected take in real-time value
Take Relative	Sound head position of the selected take, relative to the length
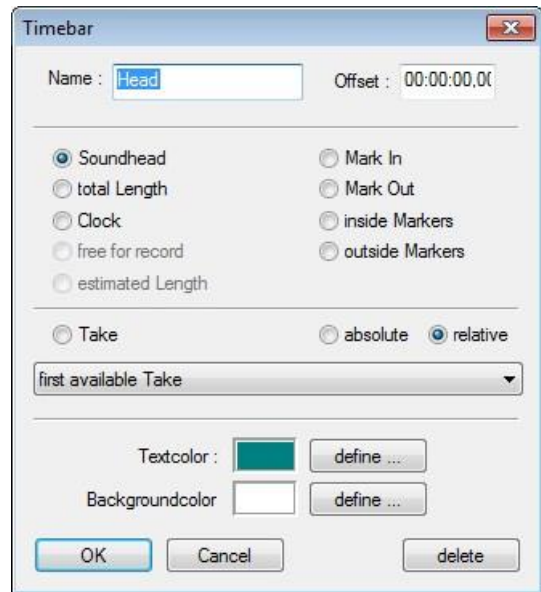
Below, the text and background colors for this field may be selected.

9.5.   Sound Head Positioning

The sound head can be set at a desired position with the middle mouse button (🌐 or with the left mouse button, if using the alternate mouse button configuration).

9.5.1.   MOVING SOUND HEAD
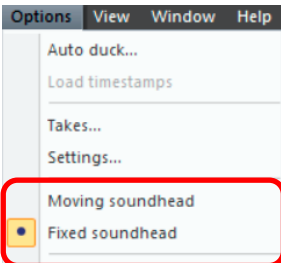
	In the menu "Options", the Audio Editor may be switched from fixed (standard) to moving sound head.
	🌐 Moving Soundhead:	The timeline stays fixed and turns screens according to the position of the moving soundhead.
	Fixed Soundhead:	The soundhead stays unmovable in the center of the scrolling screen.

9.5.2.   SCROLL BAR

- Click the timeline's scrollbar arrow left (backward) or right (forward) until the desired position is reached, or
- Drag the scrollbar to the left or right, or
- Click on the empty area left or right of the scrollbar to shift the screen position backward/forward.

9.6.   Play Functions

9.6.1.   NORMAL SPEED

The MultiTrack Editor plays tracks in the following ways:

1. Click the **PLAY** button to replay the take, starting at the actual soundhead position.

2. Double-click the **PLAY** button to replay the take, starting at the selected pre-roll position before the soundhead.

3. Click the **STOP** button to stop the replay.

4. Double-click the **STOP** button to shift the soundhead to the start of the take.

9.6.2.   VARIABLE SPEED

A take may be monitored forward or backward faster by using the arrow buttons below **PLAY**. Please make sure that the scrub function is not enabled.

1. Click **PLAY**.

2. Repeat clicking the right arrow below the **PLAY** button, to accelerate the playback speed forward (2x, 3x, 4x speed), or

3. Repeat clicking the arrow in the other direction, or

4. Click **PLAY** to go to normal speed.

Direction	Backward			Frame-Loop function	Forward			
Speed	3x	2x	1x		1x	2x	3x	4x
Buttons	«‹	«‹	«‹	«‹	▶	›»	›»	›»

9.6.3.   SCRUB FUNCTION

Clicking on **SCRUB** opens the scrub speed scrollbar below the edit track. The position of the scrollbar field corresponds with the speed, at which the take may play forward or backward. The scrollbar field is located in the center, there is the zero point of the playback speed.

1. Click **SCRUB** below the **PLAY** button. The scrub speed scrollbar will be opened.

   Scrub Speed

2. Drag the scrollbar to the right (forward) or left (backward).

3. Repeat clicking **SCRUB** or close the scrub speed scrollbar, to switch off the scrub function.

> Note: With **Options – Settings – Global 2**, scrub replay options may be selected (scrub by skip): if the checkmark is set, then the speed will be increased by omitting particular frames, without changing the tone pitch. If the checkmark is not set, then the audio will be pitched normal, i.e. with growing speed also the tone pitch changes.

9.7.   Undo / Redo

If you want to undo a work step or recover one or multiple already undone working steps, proceed as follows:

To undo / redo a step, click **Undo / Redo**

To undo / redo several steps, click the arrow next to **Undo / Redo**, and select the steps which should be undone/redone.

Subsequent an example for a list of performed working steps:

```
Separate : Track 2, Position 00:03:03,03
Change Mark Out : 00:00:27,30 -> 00:01:16,40
Change Mark In : 00:00:27,30 -> 00:00:14,63
Change Mark Out : 00:02:01,56 -> 00:00:27,30
Move Track Object : Track 2, Track 3 -> Record Test, 00:03:17,69
Copy Clip : Soundbite -> Track 2, 00:01:56,11
Select Track : Track 3 -> Select
Move Track Object : Track 2, Track 2 -> Record Test, 00:03:19,11
Select Track Object : Track 2, Record Test
```

OK   Cancel

9.8.   Take Information

This is how you get information about loaded takes:

Click on the menu Options - Takes in the symbol bar. A dialog box appears:

Takename : Interview

Filename : D:\Media\Local\WORKSTATION-PS_714C8AF004DB44A7B73CC2DF699B9FB2.WAV

Soundformat : Stereo, 44.10 kHz, linear, 16 Bit, little Endian

Fileformat : Wave, aux

Recording Time : 17.06.2013 14:18:41

Length : 00:03:35,24

Amplification : 0.00   db (-180 … +12)

OK   Cancel   I<   <   >   >I   delete
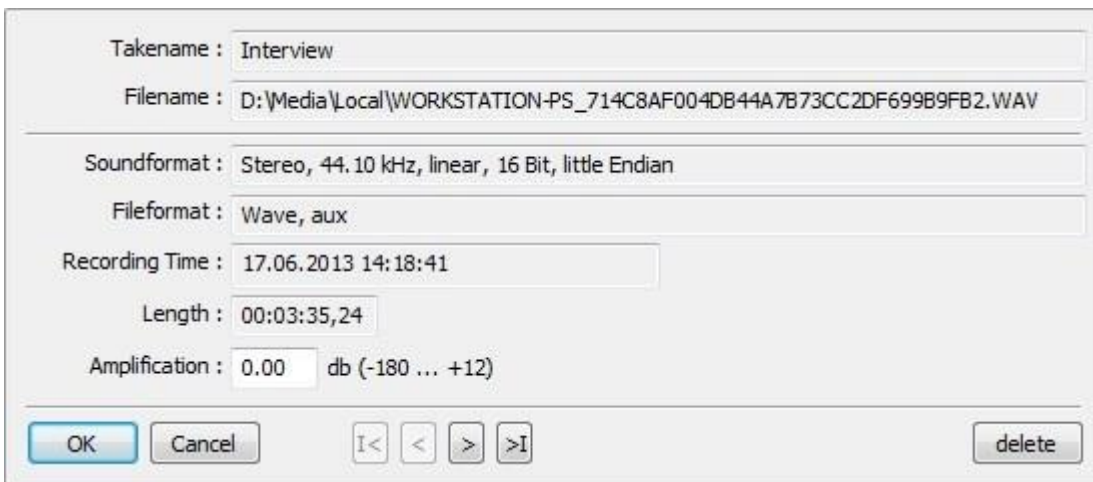
Now you see the take parameters, of which only the Amplification may be altered. With the ARROW BUTTONS you may select more tasks, and delete these from the editor with DELETE.

9.9.   Save options

9.9.1.   SAVE PROJECTS 🌐
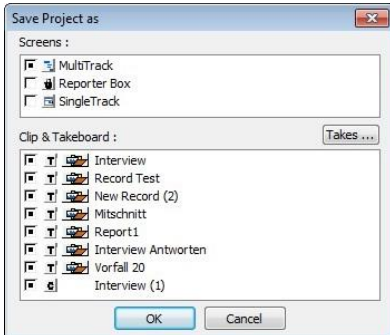
If a production has not been finished yet, and later editing is required, then it should be saved as a project. A project may contain all takes, clips, steps, and macros, which are available for later editing. Saving projects can be done in several ways:

- Click **FILE - SAVE PROJECT**. Initially, a dialog box appears:

Work Area

Per default, all modified undo lists of all areas and screens will be saved. However, unnecessary undo lists may be deactivated.

Clip & Takeboard:

Embedded: (=default). Here, the takes may be saved as independent sound files. Only then these are safely reusable later. In that case, the original takes may be deleted in the database, without impact on the project.

Referenced: Otherwise, only references to the original files in the database may be saved in the project data (for example, to save hard disk space). When the original takes are missing in the database, then these cannot be loaded anymore in a project.

One advantage of this method is that in this manner files, currently being recorded, can get into the project. When the project is loaded the actual length of these files is determined (in the clipboard it is possible to actualize the file length manually).

Takes ... The submenu of this button allows you to mark all elements listed in **Clip&Takeboard** as either referenced, embedded or according to the settings (see 19.5 Files).

1. Confirmation with **OK**. In DigaSystem the following dialog box for selecting the target application and the database appears:

2. After selecting the database and confirmation with **OK**, the database screen appears to name the new entry:

Program :

Database Manager 32 Bit

Table / Destination :

Local Table
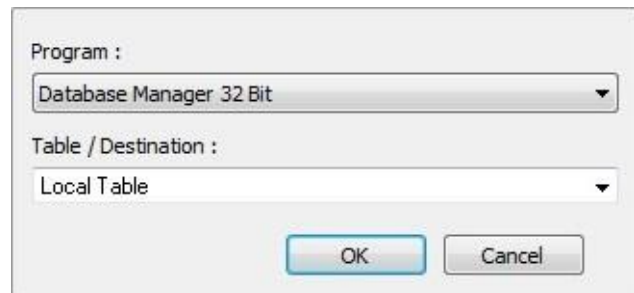
3. Name the new entry accordingly and confirm with **OK**.

Annotations:

Using the editors outside of the DigaSystem environment, the command "Save Project" will we shown. In this case, sound files are saved in the project file with default settings.

With saving file based (not in the DigaSystem database) projects, existing projects may be overwritten (destroyed).

MP3 and AIFF files can only be saved referenced in a project. It is possible to do an automatic conversion, transforming the audio material into a format, which is compatible with the project and can be saved into it.
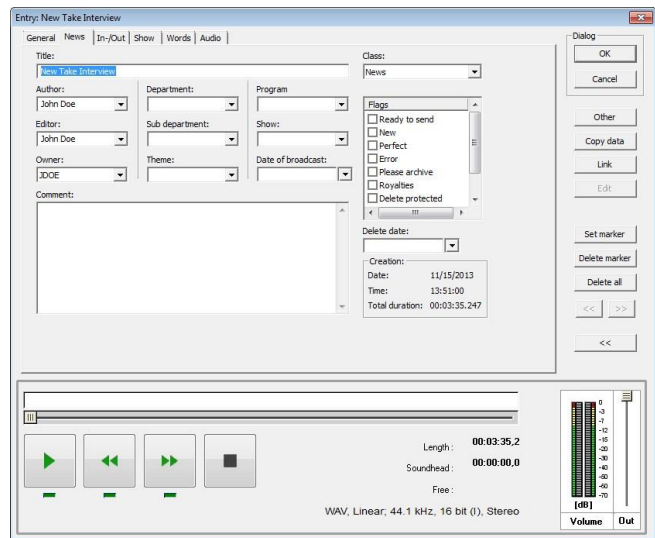
9.9.2.   SAVE PROJECT & TAKE WITH ONE WORK STEP

The command "Save Take and Project" saves 2 new files in one work step: a new take and a new project. The new files will be named with default titles.

9.9.3.   SAVE TAKES

Once a project is completed, it may be saved as new take. Then, all tracks will be compiled into one.

1. Click on the menu **FILE – SAVE**. The database screen appears, or without a database, the Windows dialog.

2. Enter a name and confirm with **OK**.

The calculation of a new audio file will be computed with DAVID Systems software codecs in the CPU. This substantially increases the save speed, depending on the CPU and memory (RAM) speed.

9.9.4.   SAVE SELECTED TAKES/CLIPS

Saving selected objects as takes in the clipboard is done by selecting these in the clipboard by the SHIFT or CTRL key. The selected objects now show a number, representing the selection order.

Left click one of the selected objects and move it, whilst holding the mouse button, to the save button in the symbol bar. The selection then will be saved in the DBM.

9.9.5.   SAVE MARKED TIMELINE AREA (SAVE SELECTED RANGE)

By the command **FILE – SAVE SELECTED RANGE** the area defined by start and end markers is compiled as new take. This selection is true for all tracks.

9.9.6.   SAVE SELECTED RANGE TO CLIPBOARD

Saving and optionally normalizing a selected range as a new take in the clipboard is available by shortcut (MTS, ETS, STS) and context menu (MTS only).

Define a shortcut (MTS, ETS, STS):

1. Open **"Options/Settings/Accelerators"**. In the Command box select "Accelerator: Save selected range to clipboard".

2. Under „ Press new shortcut key ", enter a shortcut and click **"Assign"**. The new shortcut appears under "Current keys".

3. Click **"OK"** to confirm your settings. The new shortcut is now available.
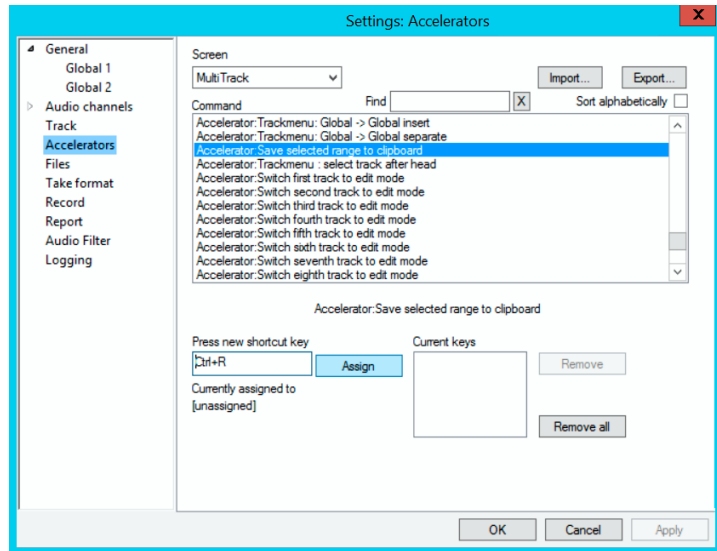
Save selected range to clipboard:

1. Enter the defined shortcut or alternatively (MTS only), click the right mouse button and select "All tracks" and "Save selected range to clipboard". The dialog "Save selected range to clipboard" opens
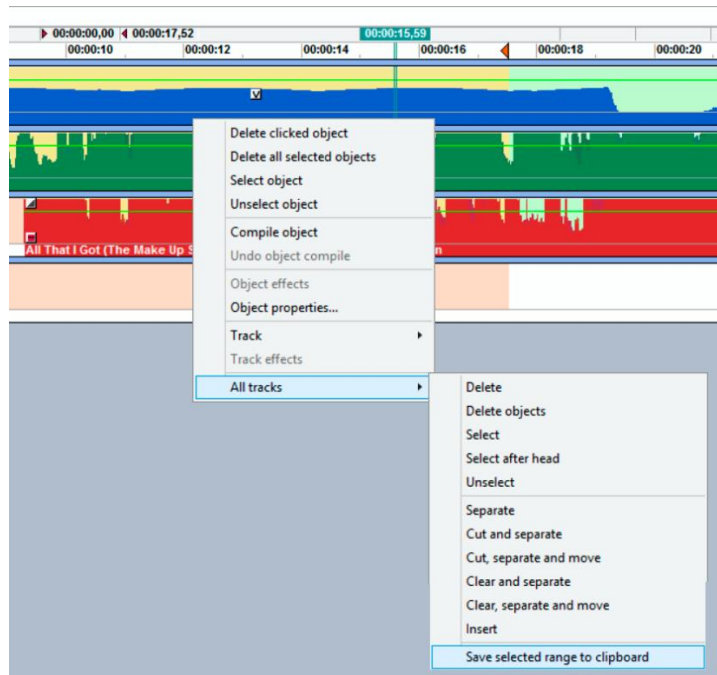
2. Under "Name", enter the title of the new take.

3. Under "Define", select a color.

4. Optionally select the "Save loudness compliant" checkbox.

5. Click **[Ok]** to confirm your settings. The newly created take now appears in the clipboard.
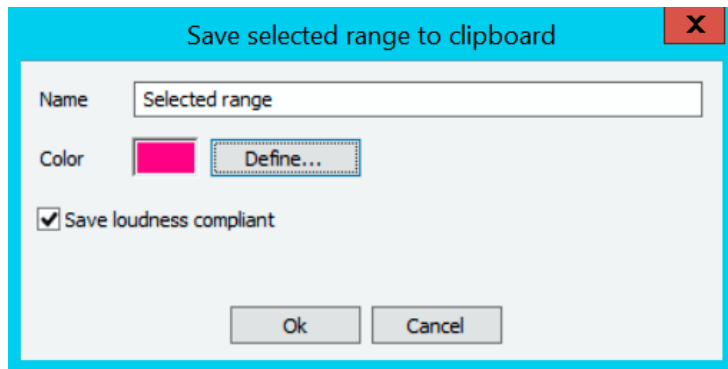
9.9.7.   SAVE EXTENDED

The command **FILE – SAVE EXTENDED** saves the production in different file and audio formats, these may also be stretched, compressed, or normalized. Calling the command, a dialog box appears:
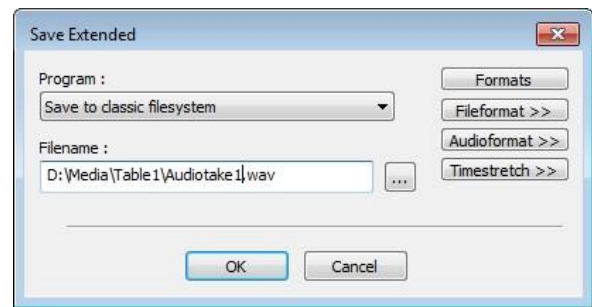
9.9.7.1.   File Formats

Different file formats may be saved. Click the File format button, and the dialog box will be extended:

Click the desired option to save the file in this format. Depending on the selected format there are text fields to be filled and which will be saved as header in the new file.
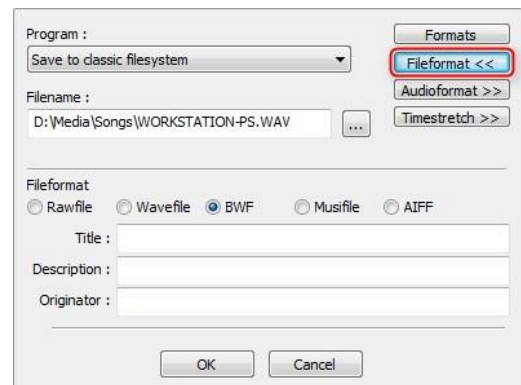
9.9.7.2.   Audio Formats

Different audio formats may be saved. Click the File format button, and the dialog box will be extended:

Click the desired option to save the file in this audio format. Some of the formats are selectable only if the specific codec has been installed (MPEG Layer 3, RealAudio, and MSAudio).
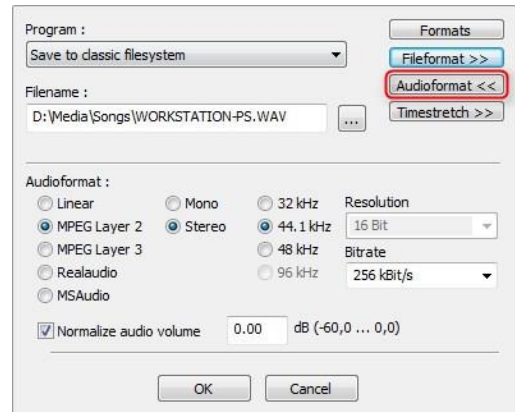
9.9.7.3.   Normalizing

The same section also provides the normalizing function:

Activate the option NORMALIZE AUDIO VOLUME. After confirmation with OK the production will be initially mixed and the peak level then set automatically to 0 dB, or to the manually entered dB value.

9.9.7.4.   Time Stretch

The production may be stretched or compressed, without change in voice pitch (no Mickey Mouse effect). Click the TIMESTRETCH button, the dialog box will be extended:

1. Activate the TIMESTRETCH option.

2. Drag the button to the left or right, to compress or stretch the production, or use the input field for entry of the desired length.
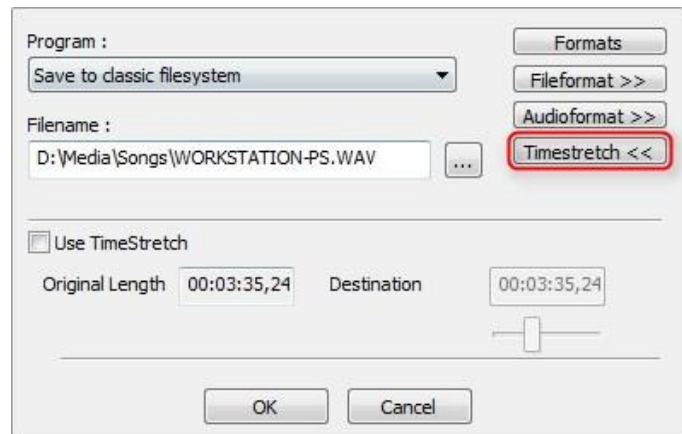
9.9.7.5.   Format Selection

The "Save Extended" settings may be saved, for future quick access:
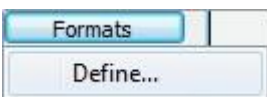
1. Click the "Formats" button in "Save Extended"
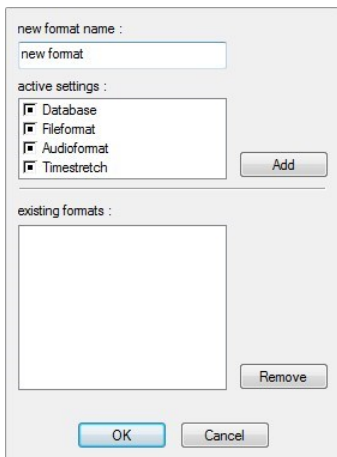
The format dialog appears:

1. Select a new format name and activate the desired options. The "Remove" button deletes all formats not required any longer.

2. For loading an existing format, call the command "Save Extended" and click the "Formats" button. The default formats may be chosen.

9.10. Special Stereo Save (Split Audio Channels) 🌐

Several stereo functions support the splitting of a stereo signal into a right and left channel. Additionally, the stereo signal can also be mixed. These functions may be used when, for example, two telephone interview partners talk on separate channels, and the sound bite requires editing.

Please note, that the Function name can differ from the ones listed!

Function	Description
StereoLeft	Create a new (stereo) take out of the left channel of the original audio; both channels of the resulting take contain the signal of the original's left channel.
StereoRight	Create a new (stereo) take out of the right channel of the original audio; both channels of the resulting take contain the signal of the original's right channel.
StereoSplit	StereoLeft and StereoRight (both see above) commands are executed with one mouse click; two new takes are created.
StereoMix	Create one new stereo take. Each channel of the resulting take contains the signal of BOTH channels of the original audio.

9.11. Exit the Audio Editor

To exit the Audio Editor:

1. Click on the menu **FILE – EXIT**

2. Confirm with **OK**

If the Audio Editor is connected via DDE to the DigaSystem Database Manager (see 4.10.1. General Settings – General 1 – DDE), then the Audio Editor will not be closed, but just be moved to the background. The project still remains as long as DigaSystem is not closed completely.

If it is not connected, then the Audio Editor may be closed independent from the Database Manager. In this case, a control box appears for confirming the exit. The project in this case will not be automatically saved.

9.12. Automatic Cleanup

Records created in Audio Editor normally are deleted manually by "File/Cleanup".

9.13.   (De-) activate Logfiles

Via the "Logging" tab at "Options/Settings", logfiles may be activated from within the Audio Editor. For access rights, the "Logging" tab is contained in the action "Auto_Change_Logging".

10.   Record Screen Working Steps

MultiTrack	Reporter Box	Record Mode	SingleTrack
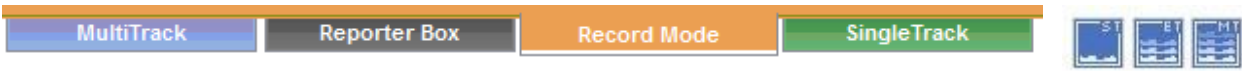
With the Record screen, text and audio may be recorded and then saved as clips in the clipboard. Also the combination of audio and text within one clip is possible, enabling an online production with the ReporterBox, or an on-air broadcast with text and audio.

The Audio Editor automatically recognizes the functionality of a PCX board. If a PCX replay without board (without record functions) is used, all record functions will automatically be switched off. However, the text capturing and the creation of clips is still possible.

To change to the Record screen, use the tabs at the lower screen edge. The background color then changes to orange.

10.1.   Definable Recording Format Templates

With **Options – Settings – Record**, recording templates may be created. As soon as a template has been saved, a list box appears in the ReporterBox and in record mode. Before any recording, the desired record template may be selected. Without selecting a template, the format as defined in the "record" tab will be used.

10.2.   Prepare Recording

The recording function may be prepared without starting the actual recording, in order to preview the audio source, and level the input signal.

1. Click the Record button.

2. Optimally level the input signal, by clicking and holding the left mouse button on the input fader, and drag it up or down. The meter must not reach the read mark in order not to overdrive the record.
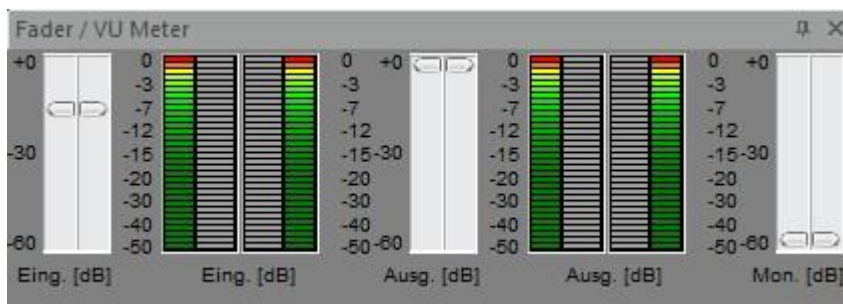
You may separately level the right and left channel by:

1. Click and hold the right mouse button on the right or left input fader, and drag it up or down.

To move both controls again to the same position, double-click the control.

10.3.   Recording

Recording may be interrupted and restarted at any time, without deleting any previous recording.

1. Click Record to prepare recording.

2. Click Play to start recording. The waveform display shows the waveform of the current record, and a red bar.

3. Click Record to interrupt recording (pause).

4. Click Play to continue recording. Recording continues immediately after the end of the previous recording part.

5. Click Stop to finish recording.

10.4.   Monitor Recording

To replay the recording:

1. Double-click Stop to shift the sound head to the start position

2. Click Play to playback the recording.

3. Click Stop to finish playback

10.5.   Monitor a Take from a selected Position

To shift the sound head to a selected position and playback the recording from there, several options exist:

10.5.1.   REELING WITH AUDIO BUTTONS

1. Click Forward to reel the take audibly forward

2. Click Rewind to reel the take audibly forward

3. Click Play to normalize the playback speed, or

4. Click Stop to end reeling or playback

10.5.2.   USING THE SCROLL BAR

- Click the appropriate arrow of the scroll bar to the left (backward) or to the right (forward) and keep the mouse button pressed until the desired position is reached, or

- Click the scrollbar, hold the mouse button and drag to the left or right, or

- Click the free area left or right of the scrollbar, to scroll one screen backward or forward.

10.6.   Set Markers

Within the Record screen, markers may be set to visualize cut positions. When transferring the recording to the clipboard, these markers will be adopted, and with only one mouse click the sound head may be shifted to the in or out marker.

Markers are set during recording, playback, or stop mode by clicking on a Marker button. The marker will be set at the actual sound head position.

Markers are deleted by clicking the Delete button. The marker at the current sound head position will be deleted.

10.7.   Name a Recording and Save as Clip

Clip information	Before taking over a recording, a name must be assigned. Enter the name in Title, by replacing the default name "new recording".
Title new recording Color	In the fields First and Last Words, text may be entered to later fast retrieve the start or end of the audio clip.
	To load the recording into the clipboard, click **AUDIOCLIP**. The recording will be saved as audio take in the clipboard. Now you may change to another screen and continue editing the clip.

10.8.   Enter Text and save as Clip

Text may be entered through the text editor window. The marked text may be formatted arbitrarily:

Select OPTIONS - FORMAT TEXT. The format bar opens. Now, font, pitch, bold, italic, underlined, color, left/right/center justified und numeration may be defined.

Text Format   ×

Trebuchet MS   14.5   **B**   *I*   U   🖉   ≡   ≡   ≡   ≔

To load the text into the clipboard, click the text clip (**ABC)** button. It will be saved as text clip in the clipboard, and may be edited later with the ReporterBox (see Working steps in the ReporterBox).

10.9. Save combined audio-text Clips

A clip may contain audio and/or text at the same time. This makes it easy, for example, to create one single clip from a recorded sound bite, together with question (or lead-in/out) to be edited later.

Alternatives are audio-text and text-audio. The text may be saved before or after the audio. Accordingly, the text in the ReporterBox will be stored before or after the audio when creating the production flow.

Audio-Text Clip

An audio and text unit will be saved as <u>one</u> clip. This may serve later for planning of a lead-out with preceding sound bite.

Text-Audio Clip (🌐 has to be activated via a parameter)

A text and audio unit will be saved as <u>one</u> clip. This may serve later for planning of a lead-in with preceding sound bite.

For further clip editing see "Working steps in ReporterBox".

All text input may be corrected with this dialog box:

11.   SingleTrack Screen Working Steps
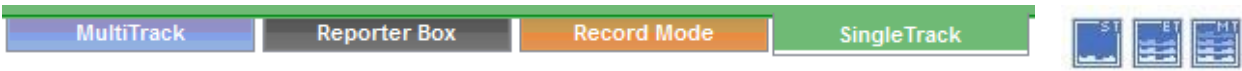
To change to the SingleTrack screen, use the tabs at the lower screen edge. The background color then changes to green.
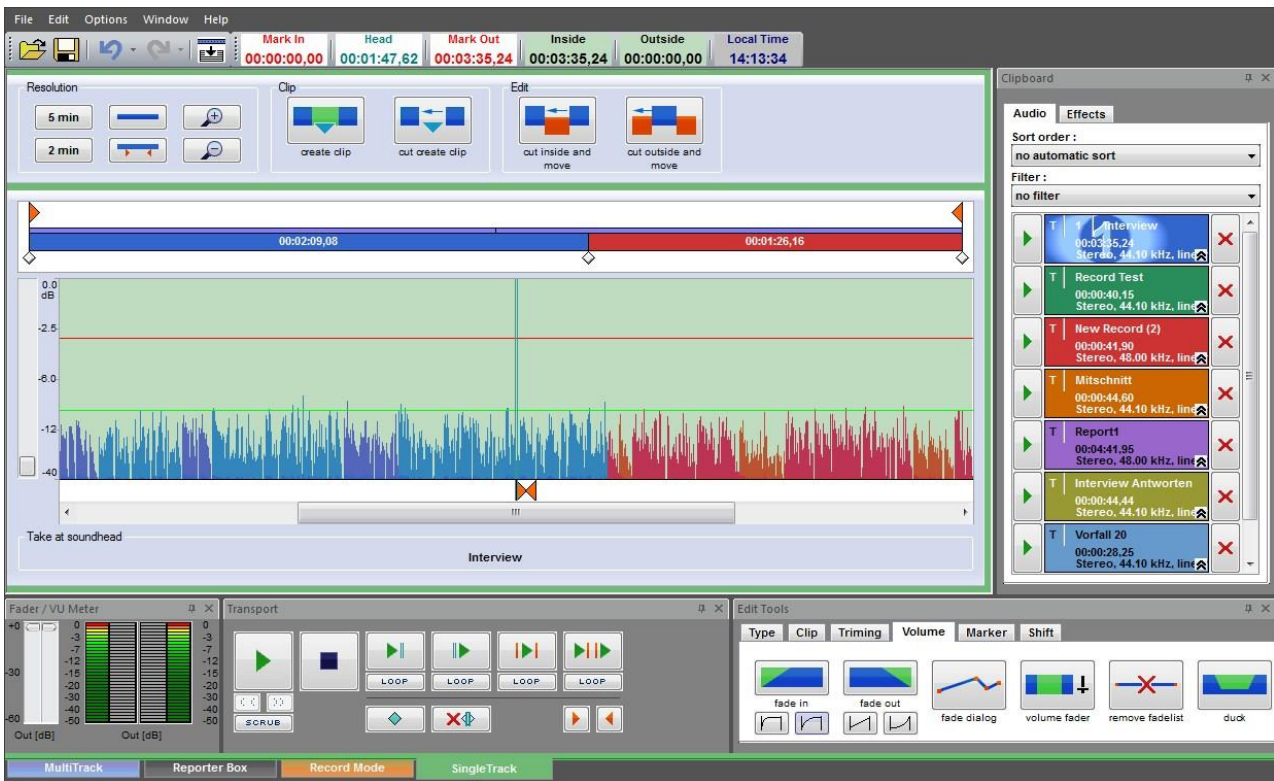
11.1.   Copy of Audio to the SingleTrack Screen

11.1.1.   FROM THE CLIPBOARD

1. Drag the desired clip or take from the clipboard to the overview window above the timeline. If there is already a clip in the timeline, then the clip/take will be inserted at the actual sound head position.

   Or

2. Middle click the desired clip or take in the clipboard. If there is already a clip in the timeline, then it will be removed, and with the new clip/take a new cut list will be started.

11.1.2.   FROM THE RECORD SCREEN

1. In the Record screen, save the recording as clip.

2. Change to the SingleTrack screen.

3. Drag the clip to the overview window, or click the clip with the middle mouse button.

11.1.3.   FROM THE MULTITRACK SCREEN

Only in MultiTrack Editor

- In the MultiTrack screen, change the track, which you want to copy to the SingleTrack screen, to the edit view.

- Click COPY TO SINGLETRACK left next to the track. The SingleTrack screen opens, the track will be loaded.

- Groups which have been exported this way may be resolved in the SingleTrack screen, as long as the group elements do not overlap.
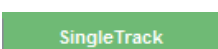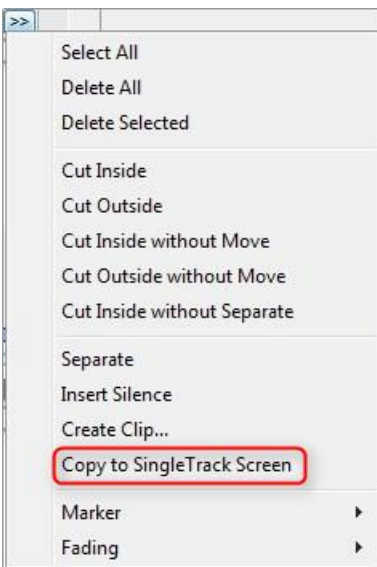
11.1.4.   FROM THE EASYTRACK SCREEN

In the EasyTrack screen, open the extended options for the desired track and select "Copy to SingleTrack Screen".

```
>>
    Select All
    Delete All
    Delete Selected

    Cut Inside
    Cut Outside
    Cut Inside without Move
    Cut Outside without Move
    Cut Inside without Separate

    Separate
    Insert Silence
    Create Clip...
    Copy to SingleTrack Screen

    Marker                       ▶
    Fading                       ▶
```

11.2.   Additional Resolutions

Only for the SingleTrack and EasyTrack screens

Additionally, the following resolutions can be displayed:
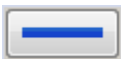
▬	**DISPLAY ALL** displays the whole track in the timeline	🔍⊕	**MAGNIFY** halves the displayed area
▸▬◂	**DISPLAY WITHIN MARKERS** displays the marked area	🔍⊖	**MINIMIZE** doubles the displayed area

11.3.   Playback Functions

The sound head can be set at a desired position with the middle mouse button (🌐 or with the left mouse button, if using the alternate mouse button configuration).

11.3.1. FRAME-LOOP FUNCTION

The frame-loop function allows the repeated play of a frame at the actual soundhead position, to select the position of the soundhead as exact as possible, by evaluating the frequency response of each frame:

1. Click the Play button.

2. Then click once the Left Arrow below the playback button. The frame at the actual soundhead position will be looped.

3. Click the audio trim buttons to move the audio sound head position for/backward. For more details about trim buttons see the next chapter.

11.3.2. AUDIO TRIM BUTTONS

The audio trim buttons allow minimal shifting of the sound head. The smallest possible resolution (frame) is determined by the Musicam layer and the sample rate.

Click one of the SOUND HEAD BUTTONS -100 / -10 / -1 / +1 / +10 / +100 in the SHIFT tab, to shift the soundhead position by the selected number of frames to the left or right.

11.4. Markers

In the SingleTrack screen, like in MultiTrack, you may set markers. Three types with 3 markers each may be set. All markers may be set during an active or stopped playback.

11.4.1. SET MARKERS

1. Position the soundhead at the desired position, or playback the take with the Playback button.

2. Open the Marker tab.

3. Click the desired Marker button.

11.4.2. ASSIGN NAMES TO MARKERS

The default marker names are defined in Options – Settings - Global 2. However, any marker may be named arbitrarily.
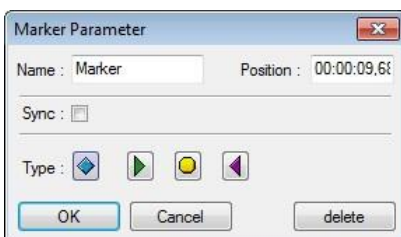
1. In the SingleTrack screen, track overview, double-click one of the markers (in the MultiTrack screen / edit view, the SingleTrack view or in ReporterBox: right mouse button). The marker dialog box, you see on the left, appears:

2. Assign a name to the marker.

Using the SingleTrack command "clips between markers" to assign the areas between markers to individual clips, the resulting clips will automatically get the name of the actual start marker.

11.4.3. DELETE MARKERS

To delete a marker, proceed as follows:

1. Middle click the desired marker and click **DELETE MARKER** in the **MARKER** tab, or
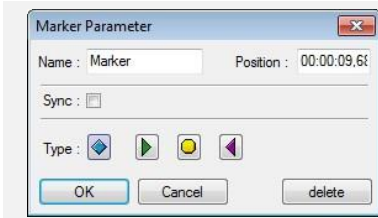
Or

1. Right click the desired marker. The marker parameter dialog box, you see on the left, appears:

2. Click **DELETE**. The marker will be removed.

To delete **ALL MARKERS** of the track in edit view, click **DELETE ALL MARKERS**.

11.5. Resolve Object Groups

If object groups have been exported from MultiTrack or EasyTrack to the SingleTrack screen, then these may be resolved in track view. The individual elements must not overlap, however.
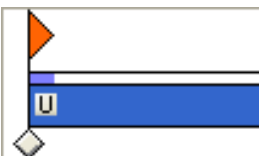
Click the "U" button in track overview, at the left track border. The objects will be resolved.
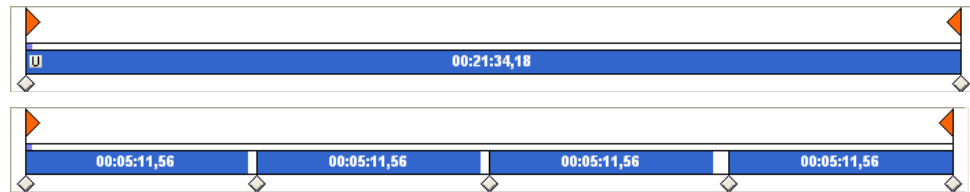
11.6. Mark Areas on-the-fly

Before a cut operation, the area must be marked. The SingleTrack screen offers a very fast marker method, called marking on-the-fly (setting of in and out markers during active playback).

1. Shift the soundhead to the position, from which you would like to start monitoring the take.

2. Click Play and playback the take. Hold the mouse pointer at the **LEFT MARKER**.

3. As soon as you hear the desired position, set the in marker by clicking **LEFT MARKER**, whilst you monitor the take.

4. After setting the in marker, while you continue monitoring, point to the **RIGHT MARKER**.

5. As soon as you hear the desired position, set the out marker by clicking the **RIGHT MARKER**, whilst you monitor the take.

Of course, markers set on-the-fly are not always perfectly precise; however, these still are helpful for later detailed editing.

After setting in and out markers, their positions may be easily changed with any of the following methods. All of these, the optical marking, scrubbing, and the loop method are based on the actual sound head position. Whenever you want to correct the position of an in or out marker, you must first position the sound head at the marker to be corrected:

- Set the in marker with the left mouse button and the out marker with the right mouse button in the timeline.

This even works when the in or out marker is outside of the visible timeline window. In this case, the markers are at the left or right edge of the timeline.

11.7. Optical Area Marking

Besides the acoustic perception, one of the fundamental advantages of digital clip cutting is the optical recognition of cut positions through the timeline waveform. With the interaction of eyes and ears (simultaneous monitoring and recognition of speech brakes between syllables, words and sentences), cut positions may be recognized, marked, and comfortably cut very much faster than with traditional cutting of audio tapes.

11.7.1. SET IN / OUT MARKER

1. Shift the sound head to the position where you want to set the in marker.

2. With the mouse pointer, point to the desired position of the waveform in the timeline.

3. Set the in marker at the sound head position, by left clicking the mouse, or clicking MARK IN.

4. Set the out marker at the sound head position, by right clicking the mouse, or clicking MARK OUT.

11.7.2. CHECK MARKERS AND TIMELINE

1. Set the soundhead at the mark to be checked, by left clicking the in marker at the soundhead line, or

2. by right clicking the out marker at the soundhead line, or

3. Use the audio buttons to check markers and timeline, by (double) clicking **PLAY LEFT / RIGHT OF SOUNDHEAD,** or

4. (Double) click **PLAY INSIDE / OUTSIDE MARKERS** to be sure, that markers are set correctly.

11.7.3. CORRECT MARKERS AND TIMELINE

Markers and timeline may be corrected by dragging the marker to the desired exact position:

1. Move the mouse pointer to the desired position in the timeline waveform.

2. Hold the left or right mouse button and drag the marker to the left or right, until you have reached the exact cut position.

3. Release the mouse button. The selected marker will be set at the actual position.

11.7.4. ALTERNATE MOUSE CONFIGURATION FOR SETTING IN/OUT MARKERS 🌐

The mouse defaults for setting and moving of markers may be changed, supporting notebook users, whose touchpads often only have 2 buttons.

- **Left mouse button**: sets the sound head (in the waveform) or the in marker (in the time line)
- **Right mouse button:** hold the right mouse button and drag the mouse over the area to be marked. In/out markers will be set automatically this way.
- **Shift + Left mouse button:** sets the in/out marker to a different position (the marker closest to the mouse position will be selected)

11.8. Mark an Area with the Scrub Function

The scrub function supports acoustic cutting, similar to traditional tape machines. Clicking the scrub button changes the function of the scrollbar below the timeline.

The position of the scrollbar now is identical to the speed, with which the take is moved forward/backward. The slider automatically jumps under the sound head, there is the zero point.

11.8.1. SET IN MARKER / OUT MARKER

1. If necessary shift the sound head to the position where you want to set the in marker.
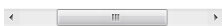
2. Click the Scrub button.

3. Hold the left mouse button on the Scrollbar Slider.

4. Drag the slider to the desired cut position.

5. Move the slider fast back and forth (reel-rocking) over the desired cut position.

6. Move the mouse pointer close to the zero point and release the left mouse button at the exact cut position.

7. Click In MARKER or OUT MARKER.

11.8.2. CORRECT MARKERS

1. With the mouse, point to the Arrow within the soundhead line of the timeline, which symbolizes the desired marker.

2. In case of the in marker, click the left mouse button, for the out marker, click the right mouse button. The actual soundhead position will be set to the position of the selected mark.

3. Move the Slider fast back and forth (reel-rocking) over the desired cut position.

4. Move the mouse pointer close to the zero point and release the left mouse button at the exact cut position.

5. Click IN MARKER or OUT MARKER.

IMPORTANT: Make sure, that the markers are set with one of the buttons **IN MARKER** or **OUT MARKER**, after you found the exact position. Only then will the corrected position be recognized as cut marker position.

11.9.   Mark an Area with Loop Function

For the loop function, the two audio buttons right of the playback button will be used. On these buttons, the vertical dash next to the play triangle symbolizes the sound head.

Play left of sound head

This button starts the playback left of the sound head.

Click: the take will be played x sec left of the sound head, and stopped at the sound head position.

Double-click: the take will be played x sec left of the sound head, and repeated until the **STOP** button will be clicked. This function is called loop. After finishing the playback, the sound head shifts back to the start position. Alternatively, you may click once on the **LOOP** button below.

Play right of sound head

This button starts the playback right of the sound head.

Click: the take will be played starting right from the sound head, and stopped after x sec.

Double-click: the take will be played starting right from the sound head with a length of x sec, and repeated until the Stop button will be clicked (Loop). After finishing the playback, the sound head shifts back to the start position. Alternatively, you may click Loop once.

11.9.1.   SET START/END MARKER BY LOOP / SHIFT LOOP PLAYBACK AREA

1. If necessary shift the sound head to the position at which the marker should be set.

2. Double-click PLAY LEFT, or click LOOP.

3. During playback, click the Trim buttons in the edit tools SHIFT tab, to shift the start or stop position of the sound head.

4. Once you reached the exact position, click Stop.

5. To set the marker, click IN MARKER or OUT MARKER.
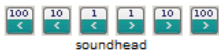
11.9.2.   CORRECT MARKERS

1. With the mouse, point to the Arrow within the timeline soundhead line, which symbolizes the desired marker.

2. For the in marker, click the left mouse button, for the out marker, the right button. The actual sound head position will be shifted to the selected mark.

3. Double-click PLAY LEFT OF SOUND HEAD (when setting the in marker) or PLAY RIGHT OF SOUND HEAD (when setting the out marker), or single-click the LOOP button below.

4. During the loop function, click one of the Trim buttons below the audio buttons, to shift the in or out position.
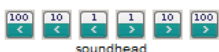
5. Click Stop.

6.

7. Click IN MARKER or OUT MARKER.

## 11.10. Mark an Area in the Take Overview

In the take overview you may set the in or out marker at an existing marker, which may be a reminder marker, a cut marker, or the out marker of a take.

Click to one of the a.m. mentioned markers in the take overview, for the in marker with the left, for the out marker with the right mouse button. The sound head will then automatically be positioned at the marker placed before.
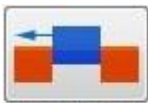
11.11. Cut an Area

You may choose to cut the marked area or areas outside of the defined area.

1. Open the Cut tab by clicking on it.
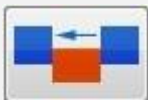
2. Click CUT INSIDE AND MOVE, to cut the marked area and move the remaining part to the cut position, or

3. Click CUT OUTSIDE AND MOVE, to cut the area outside the marked area, and move the remaining part to the start position.

(**Marker behavior:** The behavior of the markers can be defined to keep their positions or jump to the beginning/end of the take).

11.12. Trim Cut Position

After cutting a take, it is not unrecoverable. The area which has been cut out still exists (hidden) under the inserted area. The cut may therefore be retroactively edited in SingleTrack screen:

1. Middle click the cut marker in the take overview, which you would like to trim (this also may be the in or out marker or a cut point between two clips from different takes).

2. Open the **TRIMMING** tab.

3. Select the position to be trimmed: left, right, or both.

4. Click the negative trim buttons, to shorten the selected trim side

5. Click the positive trim buttons, to extend the selected trim side.

Example: The area to be cut has been marked. in and out markers will be displayed in the take overview.

Original Take:	

With **CUT INSIDE** the marked area will be cut (see following image).

Take with cut:	

The inserted marker can be recognized by the right pointing arrow, indicating that the take at the right side of the cut will be continued from a later position of the original take.
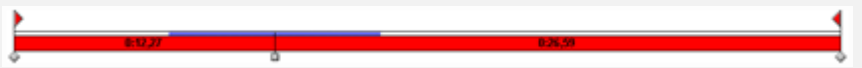
Now the trim side before the marker may be shortened. For this, middle click the marker, to position the sound head there. Then select Left from the trim location menu.

Left side shortened by 20 frames.	

Clicking one of the trim buttons [**-1**] [**-10**] shortens the trim side before the marker. The change can be seen at the time number of the left bar.

The original state is recovered, all cuts are removed.	

If the **TRIM** buttons [**+1**] [**+10**] are clicked, then the trim side before the marker will be extended.

If these buttons are repeatedly clicked, the marker changes from ▷ to ◇ and further to ◁. The symbols have the following meaning:

▷ - the take will be continued from a later position, i.e. part of the take has been cut.

◇ - The take will be continued without a real cut, i.e. no cut has been made or redone, the take at this position is identical to the original.

◁ - the take will be continued from an earlier position, i.e. part of the take will be repeated.

11.13. Undo Cuts

Any cut, not only the last one, may be undone by the Delete Cut function. Proceed as follows:

▷

1. Middle click the desired marker in the take overview.

remove fadelist

2. Open the Trimming tab.

3. Click the DELETE CUT button.
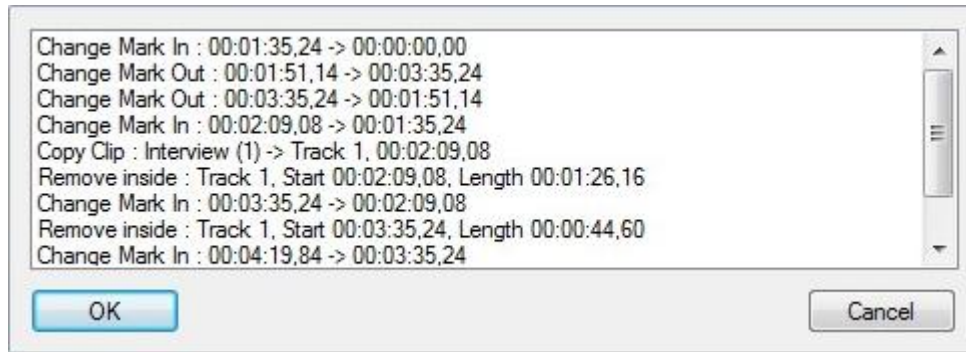
11.14. Undo/Redo Working steps

To undo/redo a work step, click the UNDO / REDO button.

To redo several undo/redo steps, click the arrow next to the UNDO / REDO, button, and select the steps you want to undo.

Consecutively there is an example of done working steps:

```
Change Mark In : 00:01:35,24 -> 00:00:00,00
Change Mark Out : 00:01:51,14 -> 00:03:35,24
Change Mark Out : 00:03:35,24 -> 00:01:51,14
Change Mark In : 00:02:09,08 -> 00:01:35,24
Copy Clip : Interview (1) -> Track 1, 00:02:09,08
Remove inside : Track 1, Start 00:02:09,08, Length 00:01:26,16
Change Mark In : 00:03:35,24 -> 00:02:09,08
Remove inside : Track 1, Start 00:03:35,24, Length 00:00:44,60
Change Mark In : 00:04:19,84 -> 00:03:35,24
```

OK   Cancel

11.15. Fades

Several types of fades may be inserted to a take, for example fade-in/out with 4 different curve characteristics, individual fade and volume assignments, automatic fade-in/out, volume control of a marked area, and deletion of fades within a marked area.

11.15.1. FADE IN / OUT

To fade in/out a take within a marked area, proceed as follows:

1. Mark the desired area, which should be faded-in/out.

2. Open the Volume tab.

3. Click Fade In or Fade Out.
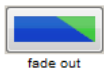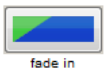
fade in   fade out

11.15.2. SELECTABLE FADES

🌐**Volume points:** The behavior of the volume points can be changed.

To define fades in the SingleTrack screen follow these steps:

1. Mark the desired area with in and out markers.

2. Open the Volume tab.

3. Click Fade Dialog, a dialog box opens (see below).

4. Set the fade points by holding the CTRL key and click on the desired position. You can now freely move the fade point.

5. With CTRL and the right mouse button you can create a new fade point on the volume line. That means the new point doesn't change the volume at first.

6. To delete a fade point, hold the CTRL key and click on the desired point.
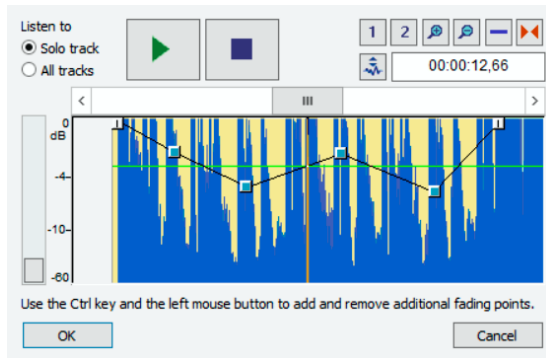
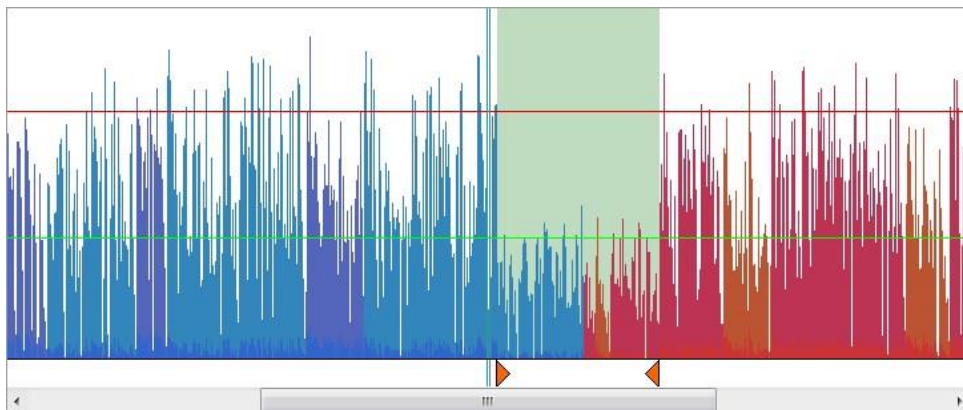

11.15.3. VOLUME CORRECTION

You can correct the volume of a marked area by these steps:

1. Mark the desired area which should be corrected.

2. Open the Volume tab.

3. Click **VOLUME FADER**. The timeline shows a horizontal line which represents the maximum waveform amplitude in the marked area.

4. Drag the line with the cursor to the desired position.

🌐**Position of the volume line**: The start position of the volume line can be set relative to the volume or always in the middle.

🌐 **Volume Fader Accelerators:**

Under **Options -> Settings -> Accelerators** these accelerators

- Volume Fader -> Volume up

- Volume Fader -> Volume down

may be defined. These accelerators are set to a level difference of 1.0dB.

11.15.4. REMOVE FADES

To undo fades, you may use the undo function or:

1. Select the area in which you want to undo the fades by setting in and out markers

2. Open the Volume tab.

3. Click Remove Fade list

11.16. Create Clips
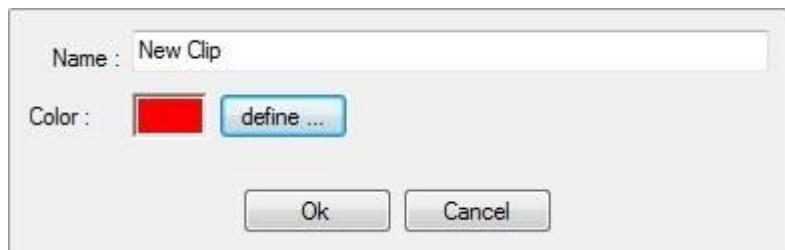
11.16.1. COPY AN AREA TO THE CLIPBOARD

Before copying an area, it must be first created at the clipboard. The selected take area remains intact.

1. Mark the desired area with in and out markers.

2. Click Create Clip. A dialog box appears for the clip name and color:

3. Enter a clip name.

4. Exit with **OK**.

11.16.2. CUT AN AREA AND COPY TO THE CLIPBOARD

Before moving an area, it must be first created at the clipboard. The selected take area will be cut.

1. Click the button **CUT CREATE CLIP**. A dialog box appears for the clip name and color:

2. Enter a clip name.

3. Confirm with **OK**. The marked area will be removed from the track (the gap will be closed) and copied to the clipboard.

11.17. Insert Clip in Take

The last step of the copy and move operation is to insert the clip into the take.

First, choose an insert position. As the clip will be inserted at the sound head position, the sound head has to be shifted to the insert position.

11.17.1.　OPTICAL SOUND HEAD POSITIONING

11.17.1.1.　Position the Sound Head

Shift the sound head to the position, where the in marker should be set. With the mouse, point to the desired position at the timeline waveform and <u>middle click</u> it. This sets the new sound head position.

11.17.1.2.　Check Sound Head Position

Click the audio buttons to check the sound head position. Click **PLAY LEFT / RIGHT OF SOUNDHEAD**, **PLAY INSIDE / OUTSIDE OF MARKERS**, to verify that the sound head is set correctly.

11.17.1.3.　Correct Sound Head Position

1. With the mouse, point to the desired position at the timeline waveform.

2. Hold the <u>middle</u> mouse button and drag the marker left or right, until you have reached the exact cut position.

3. Release the mouse button. The sound head will be set at the actual position.

11.17.2.　POSITION THE SOUND HEAD WITH SCRUB FUNCTION

The scrub function supports acoustic cutting, similar as with conventional tape machines. Clicking SCRUB changes the function of the scrollbar below the timeline:

The position of the slider now corresponds with the speed, with which the take is moved for/backward. The slider automatically jumps under the sound head, there is the zero point.

11.17.2.1.　Position the Sound Head

1. Shift the sound head to the area where you want to set the markers.

2. Click **SCRUB**.

3. Hold the left mouse button at the scrollbar slider.

4. Drag the slider to the right, until you reach the desired cut position.

5. Move the slider fast back and forth (reel-rocking) over the desired cut position.

6. Move the mouse pointer close to the zero point and release the left mouse button at the exact cut position.

Note: The scrub playback is performed in mono (left channel).

11.17.2.2.　Check Sound Head Position

Click the audio buttons to check the sound head position. Click **PLAY LEFT / RIGHT OF SOUNDHEAD**, **PLAY INSIDE / OUTSIDE OF MARKERS**, to be sure that the sound head is set correctly.

11.17.3. CORRECT SOUND HEAD POSITION

1. Move the slider fast back and forth (reel-rocking) over the desired cut position.

2. Move the mouse pointer close to the zero point and release the left mouse button at the exact cut position.

11.17.4. POSITION THE SOUND HEAD WITH LOOP FUNCTION

For the loop function, the two audio buttons at the right, next to the playback button, are used. The vertical dash next to the triangle symbolizes the sound head.

11.17.4.1.   Position Sound Head

1. Shift the sound head to the desired area.

2. Double-click PLAY LEFT / RIGHT OF SOUND HEAD.

3. During the loop function, click the Trim buttons below the audio buttons, to shift the in or out positions.

4. Click Stop.

11.17.4.2.   Check Sound Head Position

Click the audio buttons to check the sound head position. Click **PLAY LEFT / RIGHT OF SOUNDHEAD**, **PLAY INSIDE / OUTSIDE MARKERS**, to be sure that the sound head is set correctly.

11.17.4.3.   Correct Sound Head Position

Double-click PLAY LEFT / RIGHT OF SOUND HEAD.

During the loop function, click the **TRIM** buttons below the audio buttons, to shift the in or out positions.

Click **STOP**.
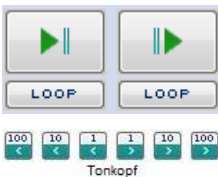
11.17.5.   INSERT CLIP

Now copy the clip into the take. Use one of these workflows.

11.17.5.1.   Drag & Drop

1. Drag the clip to the take overview. A thin vertical line appears, representing the sound head position.

2. Position the clip at the left side of the sound head position, if you want to position the sound head to the end of the inserted clip, after the insertion process, or

3. Position the clip at the right side of the sound head position, if you want to position the sound head to the start of the inserted clip, after the insertion process.

4. Release the mouse button.

11.17.6.   CHANGE CLIP NAME

By these steps it is possible to change a clips name:

1. Double-click the clip. A dialog box appears.

2. Enter the new clip name,

3. Confirm with **OK**.
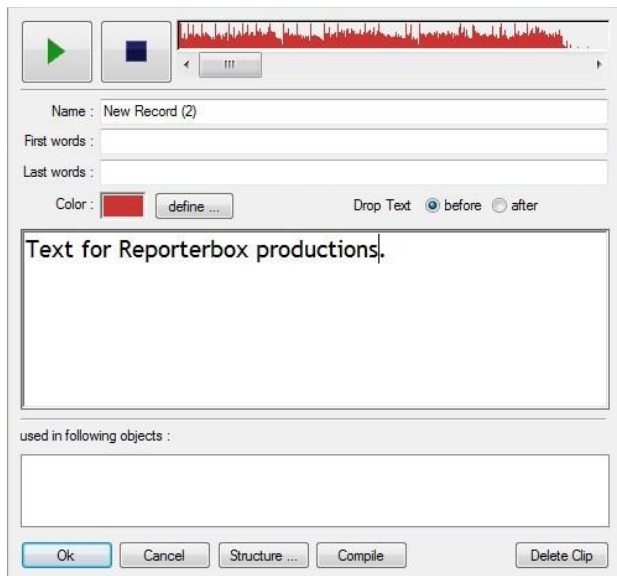
11.17.7.   PRELISTEN CLIP

You may prelisten the clip by:

    1.   Click the Play button left of the desired clip track.

    2.   Click the Stop button in the clip.

11.18. Separate Take into Clips

With a few steps, a take may be separated into several clips. Cut positions or markers may be used to represent the cut points between the clip areas:

1. If markers should be used as cut points between clips, then these should be set to the desired positions between the areas. For more information, please see the chapter Markers.

2. Open the **CLIP** tab.

3. Click **MARK TO CLIP**, to separate the areas between the markers to individual clip tracks.

   The name of the in marker will be assigned automatically to the clip. The markers may be named freely by double-clicking the overview window before. Also default marker names may be set with Settings / Global2.

4. If the parts between the cut markers should be used as separation criteria, then click **EDIT TO CLIP**.

Clips zwischen
Markierungen

Clips zwischen
Schnittmarken

11.19. Adopt Clip as new Cut List

To delete the timeline, for example, if you want to start a new cut list:

Middle click the desired clip. This loads the clip into the SingleTrack screen; the previous contents will be discarded. With the undo function, the previous cut list may be restored.

12.   EasyTrack Screen Working Steps

In the EasyTrack screen there are 3 tracks available for production. These 3 tracks are distributed over the whole work area. To change to the EasyTrack screen, use the tabs at the lower screen edge. The background color then changes to light blue.

12.1.   Track View Changes

12.1.1.   SHIFT TRACKS

Tracks may be shifted in the following order:

1.   Hold the left mouse button on the track name.

2.   Drag the track upwards or downwards to the desired position.

12.1.2.   CHANGE TRACK NAME TO change a track name:

1.   Double-click the track name. It will then be highlighted in blue.

2.   Enter the desired track name. The whole field width is available (up to 24 letters).

12.2.   Use Track Overview

The track overview shows all tracks and objects of the whole project. Several working steps are possible here.
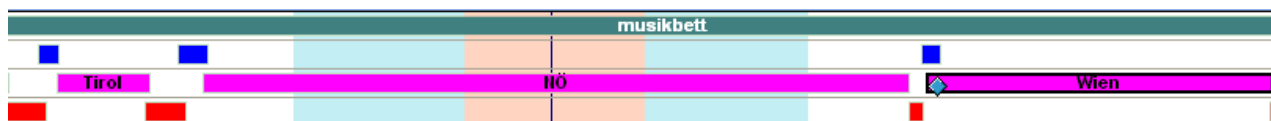
12.2.1.   INSERT CLIPS

 To use a clip for production which already exists in the clipboard, it may be copied per drag & drop directly to the desired position:

1.   Drag the clip from the clipboard to the desired track. The thin, vertical line indicates to which position the object will be moved. Additionally, the object is also shown in the overview,

or

2.   Drag the clip from the clipboard to the desired position in the overview above the tracks.

3.   By releasing the mouse button, the audio object will be inserted into the selected track.

The drop mode may also be used in the track overview. To change the drop mode during the drag & drop action, hold the left and click the right mouse button (to move the clip to the track overview).

12.2.2.   MOVE AUDIO OBJECTS

1. Mark the desired object. The object will be highlighted with black borders. To mark several objects, hold the CTRL key (selective add) or the SHIFT key (inclusive add) and click the objects.

 Selective add (CTRL key)   Inclusive add (SHIFT key)

2. Drag the objects to the desired position.

12.2.3.   ZOOM IN / OUT

The waveform may be scaled up / down with Zoom In / Out buttons in the symbol bar. This only changes the display, not the resolution.

1. Click the button "Zoom In" to scale up the waveform step by step. Each step halves the pane.

2. Click the button "Zoom Out" to scale down the waveform step by step. Each step doubles the pane.

12.2.4.   CREATE / CHANGE / DELETE MARKERS

To set a marker at the sound head position, open the arrow menu and select the submenu Marker. There are 4 different marker types:

 In the track head area, the Marker Type 0 is directly available as button.
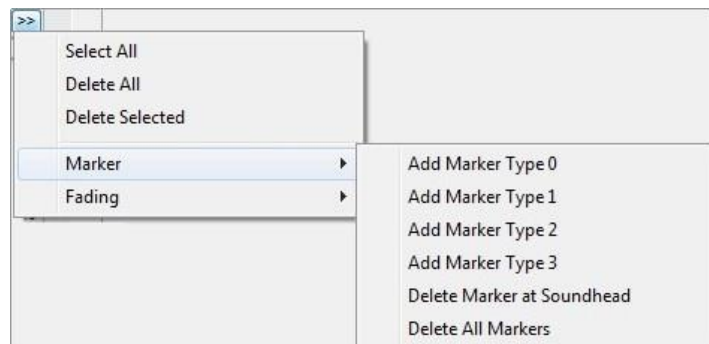
Name and marker type may be changed as follows:

- Right click the desired marker within the track waveform or in the overview. A dialog box opens:

- Now you may change the name, the marker type and if needed numerally the position.
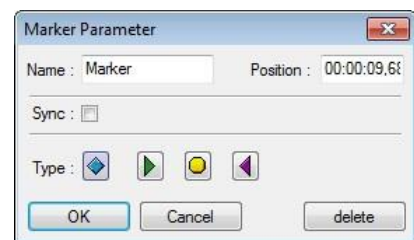

- Markers may also be deleted by dragging the soundhead with the middle mouse button to the desired marker, and selecting Delete Marker at Sound head in the marker submenu. If you want to delete all markers of the whole track, then click the command below.

## 12.3.   EasyTrack Cut Functions

The EasyTrack screen has 2 functional areas: cut and volume editing. The areas may be switched with the two buttons below the tracks. For the cut area, the upper button must be selected. For volume editing please select the lower button.
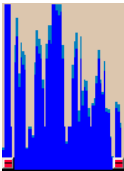
At the start and end of each audio clip, there are red trim buttons in the tracks, which – if these are clips- may be shifted also retroactively.

12.3.1.   SET IN AND OUT MARKERS

Positioning of in and out markers in ETE will be done in the sound head bar, as clicking within the waveform is already used by other functions.
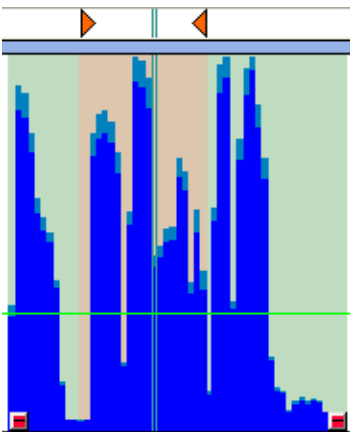
1. Left click the desired position in the sound head bar. Hold the mouse button and drag the line (out marker in the illustration left) left or right, to reach the desired position.

2. After releasing the mouse button, the in marker will be set.

3. To set the out marker, use the same steps with the right mouse button.

To set in and out markers to the start or end of an audio object, left click the object, it will be highlighted with black background.

In and out markers may span several audio objects. For this, clicking the first audio object sets the in marker to the start. Holding the CTRL key and clicking the desired audio object, sets the out marker to the end of the last marked object. This marks both clicked audio objects.

Note: You also may click audio objects in different tracks.
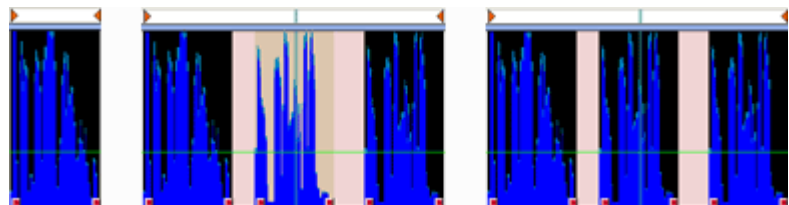
Explanation:

The same effect is created if you hold the SHIFT key during the operation. The difference: then all included audio objects will be marked, which does however not influence the setting of the in and out markers.

To mark all audio objects from the whole track, you may also use the command **SELECT ALL** to be activated with the arrow button at the left margin of each track.
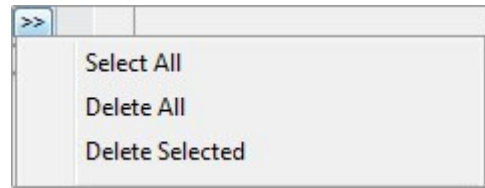
12.3.2.   CUT COMMANDS

12.3.2.1.   Cut Inside

To cut out the selected area: Cut Inside   Click Cut Inside left of the desired track.

Cutting audio objects with different commands may create different results in ETE with respect to the positions of the remaining parts left and right of the timeline. With the operation described above, the remaining part to the right will be shifted to the cut point; the created gap will be closed. This is identical to the process in the SingleTrack screen.

12.3.2.2.   Cut Outside

To cut the area outside of the marked area, therefore leaving only the selected area in the track:
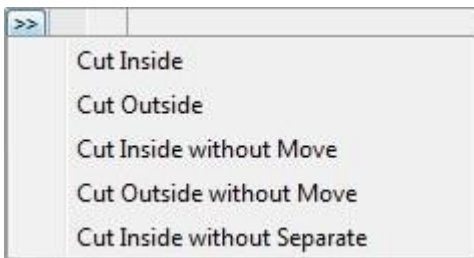
Click the Arrow left of the desired track to open the cut menu, and select "Cut Outside".

As this command includes moving the remaining area, the remaining audio object will be moved to the start.

12.3.2.3.   Cut without Move

If however you do not want to move the right area (for example because then the synchronization with other tracks will be lost), the following steps are to be done:
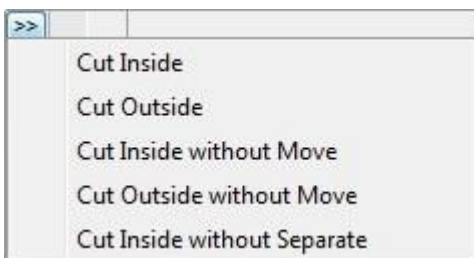
Click the Arrow left of the desired track to open the cut menu, and select „Cut Inside without Move" or "Cut Outside without Move".

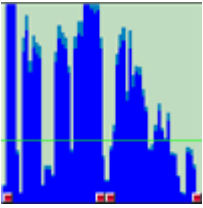#### 12.3.2.4.   Cut Inside without Separate

With the command Cut Inside Without Separate, the remaining parts will be further treated as ONE audio object.
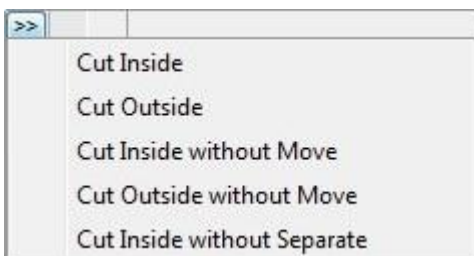
Click the Arrow to open the cut menu left of the desired track, and select „Cut Inside Without Separate".

12.3.2.5.   Separate and Trim

In addition to the "Cut inside" commands, you may also use the "Separate and Trim" functionality:

Right click the desired position in the waveform, or, hold the right mouse button and move the mouse pointer to the desired position and release the mouse button. Left and right from this position, 2 red trim buttons will be set (same as with the start and end of an audio object).

Or:
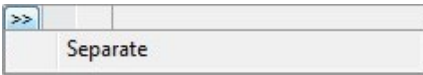
Shift the soundhead to the position, where the audio object should be separated. Click the Arrow to open the cut menu left of the desired track, and select "Separate".
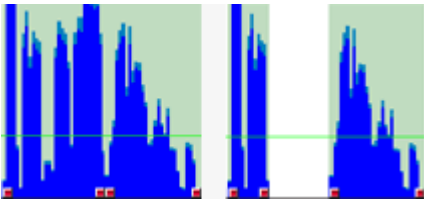
Drag the trim buttons to the left and right, to recess the area to be cut.

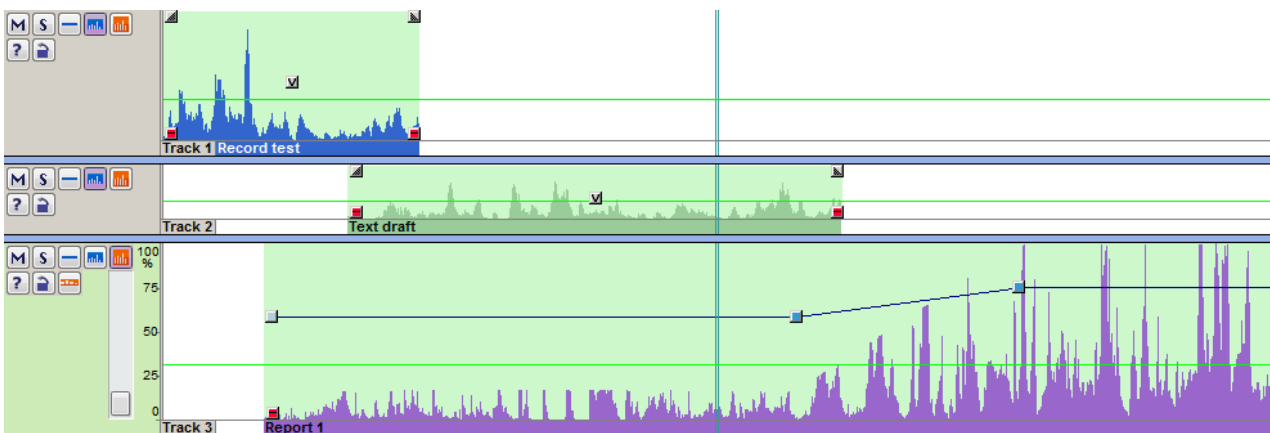# 13.   Multitrack Screen Working Steps

13.1.   Work Tracks

13.1.1.   INDIVIDUAL TRACK SIZE

> To define a default track height in block and edit display mode, refer to the chapter **Default Track Height.**

Different from the MultiTrack Editor V4 generation, the track size in block or edit view is individually adjustable.

1. Click the area between two tracks.

2. Hold the mouse button and increase the track size by moving the mouse down.

3. To increase all tracks, additionally hold the CTRL key.

13.1.2.   TRACK ROUTING 🔑

> 🔑 Requires a license.
>
> The **Track Routing** chapter in the Admin manual explains how to activate this feature.

Open the "Options" menu and select "Track Routing". If this option has the checkmark set, then the track routing functionality is active and the dropdown menu in each track head is available.

Select Channel in Timeline:

Use the dropdown menu in the track head to select a pair of output channels (these channels must be defined in the MultiTrack Settings). The channel assignment will be saved into projects.

By default, the first track is assigned to the first output channel pair; the second to the second; etc. If there are more tracks in use than output channel pairs available in the current configuration, the highest tracks are routed to the last available output channel pair (in this case every track from the forth one will get the "Out 7+8" assignment.
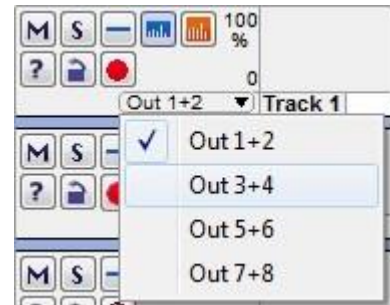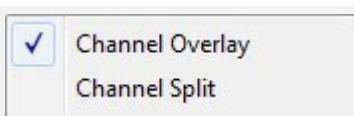
13.1.3. DISPLAY OF THE WAVEFORM

The audio information's display is definable by the right click menu (only valid during a session).
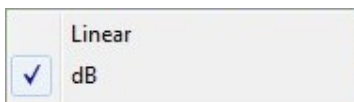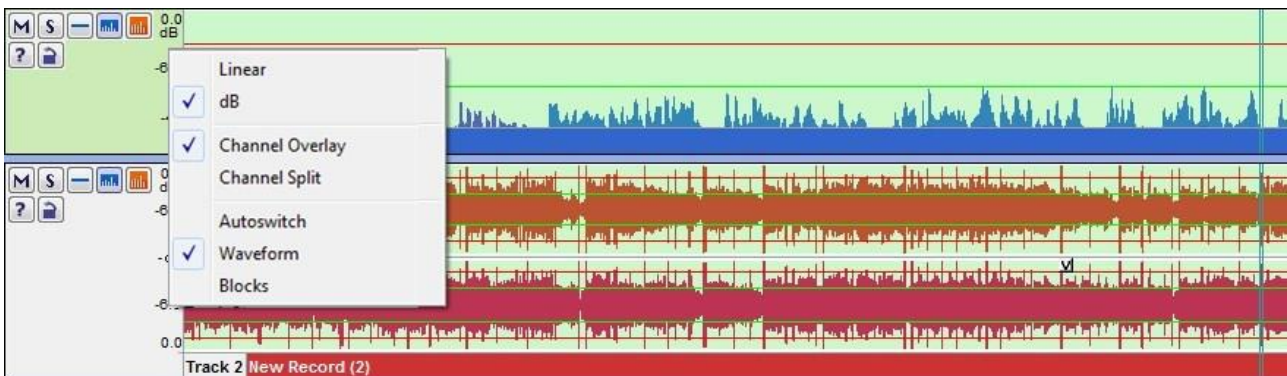
	Scale Display:
Linear ✓ dB	The waveform can optionally be displayed linear (%) or logarithmic (dB)

Channel Display:

✓ Channel Overlay Channel Split	**Channel Overlay**	Left and right channel are put together and are displayed by three colored nuances (left, right and overlapped).
	Channel Split	The channels are displayed separately, but can't be edited individual.

Waveform Display:
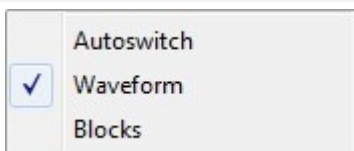
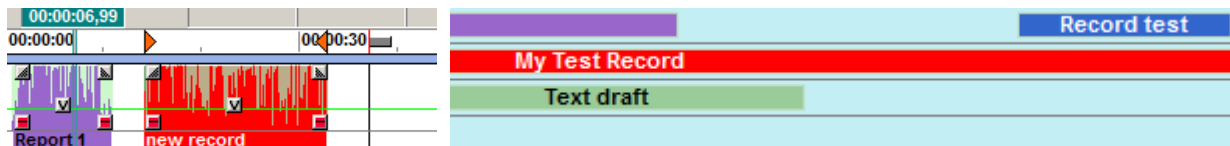|		
Autoswitch ✓ Waveform Blocks	**Automatic**	Beginning at a certain zoom level the display is switched between envelope and real waveform.
	Waveform	It is only the real waveform displayed.
	Blocks	It is only the envelope displayed.

13.1.4.   INSERT CLIP

1. Drag the clip to the desired position within the track or within the track overview.


1. If you hold the SHIFT key during insertion, then an object may be inserted to this track, overlapping with another object. The Crossfade Editor appears (see chapter "Crossfade", below).

2. If you hold the CTRL key during the insertion, then a clip may be inserted to this track, within another object in the track. The object part from the insertion position will be moved to the right by the length of the inserted clip (according with the drop mode "ripple").

3. If you hold the CTRL and SHIFT keys during insertion, then a clip may be inserted within another object over all tracks (i.e. the object parts in all tracks, starting from the insert position, will be moved right by the length of the inserted clip; according with the drop mode "ripple all").

13.1.5.   DROP MODE

Drop modes can be controlled using the drop mode button:
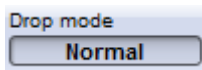
Drop Mode "Normal": a clip may be appended before or behind an object in the track. The object in the timeline remains unchanged.
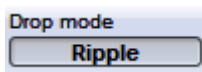
Drop Mode "Ripple": a take/clip may be inserted within another object in the track. The object part beginning from the insert point will be moved by the length of the inserted clip.
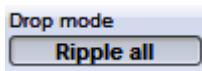
Drop Mode "Ripple all": A take/clip may be inserted within another object over all tracks. The object part from the insert position will be moved by the length of the inserted clip to the right.
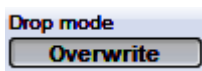
Drop Mode "Overwrite": A take/clip may be inserted within another object in the track. The object part from the insert position will be overwritten by the length of the inserted clip.
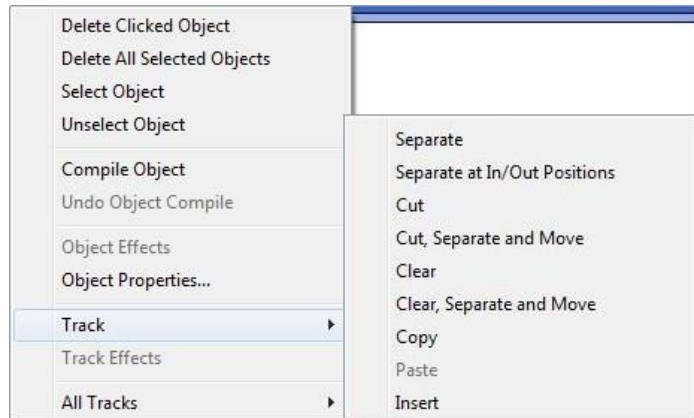
13.1.6.   OPTIMIZED INSERT

1. Insert the first clip/take in a track and start playback.

2. Hold down CTRL+Shift and click the desired clip/take. It will be inserted immediately at the soundhead position in the next free track.

3. The next clip may be inserted instantly, again with CTRL+Shift+LMB.

Note: This function is inactive, if the parameter "**UseNormalTrackSizing**" is set to 1.

13.1.7.   COPY & PASTE

The MultiTrack Editor provides a by Windows standards defined copy & paste function.

To copy a marked area:

Delete Clicked Object	
Delete All Selected Objects	
Select Object	
Unselect Object	Separate
	Separate at In/Out Positions
Compile Object	Cut
Undo Object Compile	Cut, Separate and Move
	Clear
Object Effects	Clear, Separate and Move
Object Properties...	Copy
Track ▶	Paste
Track Effects	Insert
All Tracks ▶	

1. Right click the lower clip bar and select "Actual Track", followed by "Copy" in the submenu.

2. To insert the area again, right click the lower clip bar and select "Actual Track", followed by "Insert" in the submenu.

Under Options -> Settings -> Keyboard Commands, accelerators may be defined.

Hint: It is possible to copy a marked area of two or more tracks.

1. Mark the area to be copied.

2. Select the tracks to be included in the copy process (click the track head)

3. Execute the Copy command

4. Select the track(s) to which the material should be copied

5. Execute the Paste command

IMPORTANT: The copy and paste commands must involve the same number of tracks.

13.2. Separate Track Groups
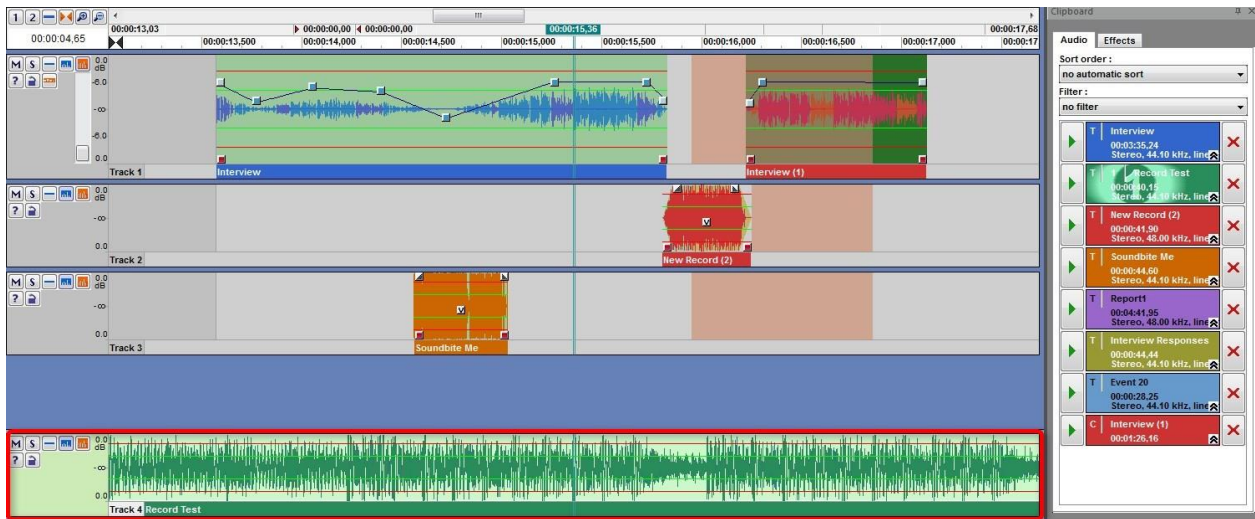
After creating a separate track group, there are 2 unlinked track groups in the work area. The active track group may be played, the other one remains in its current position.

1. Left click a track head.

2. Hold the mouse button and move the track to the lower work area edge.

3. After releasing the mouse button, the track locks at the lower edge.

To change between tracks, click the track head of an inactive group. The inactive group is shaded.

This way, you may, for example, create a project and a source material group. Project relevant sections in the source material may now be inserted in the project group, without having to search for the insertion point.

IMPORTANT: Separate track groups will not be saved in a project or within the editor; all elements there will be lost after exiting the editor (objects are still available in the clipboard)! To save edit working steps, the track groups must be resolved before saving (just drag up the tracks again).
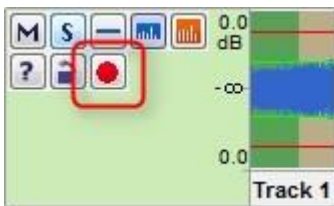
13.3.   Track Recording ⚒

> 🔑 Requires a license.
>
> 🌍 The **Track Recording** chapter in the Admin manual explains how to activate this feature.

13.3.1.   CREATE A RECORDING

Select a track for recording

The record button in the Transport window is greyed out until a track is selected for recording. This means the small record button in the track head needs to be enabled:

Click the record button in the track head of the track you want to use for the recording. When active, the button will be completely red 🔴.

Only one track can be selected for recording at a time, all other tracks' record buttons are greyed out then. If selecting another track for recording, the current one is unselected.

If a track is locked 🔒 the record button is not usable. It is also not possible to lock a track while it is selected for recording.

"Arm" the record track

After selecting a track for recording, the big record button in the Transport window is enabled.

With this button active the record track is "armed". Now click on the play button to start the recording at the sound head position.

During playback it is also possible to start a recording. In that case click on the Play button after having selected a track for recording. When clicking on the record button in the Transport window now, the recording will instantly be started at the position of the sound head.

A click on the Stop button will either stop the recording or (if there is currently no playback/recording) cancel the recording status (the transport window record button will be disabled).

After a recording has been finished a new TAKE will appear in the Clipboard with the title "new recording".

Channel Output Routing:

Please note that if the MultiTrack Editor works in Multichannel mode, the monitoring output might not be assigned to the same channel pair as the playback output. The monitoring is always routed to "Out 1+2".

13.3.2.   DROP MODE DURING RECORDING

The currently selected Drop Mode affects the behavior of the recording function in the following ways:

Normal
Track recording is only possible in empty space, where no audio object is placed. The recording will stop shortly before reaching an audio element in this track to avoid an overlap. During recording all other tracks are played and audible
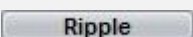
Ripple
Track Recording is possible at any point. If Recording is started upon or reaches another audio object in the same track, this audio object will be (split and) moved until the end of the recording. During recording all other tracks are played and audible

|	
Ripple all	Track Recording is possible at any point. The content of all tracks is moved over the length of the recording (and split, if the recording starts at a position overlapping with other audio parts on a timecode basis. During recording only the recording itself is audible
Overwrite	Track Recording is possible at any point. If Recording is started upon or reaches another audio object in the same track, this audio object is overwritten. During recording all tracks (including the selected track) are played and audible

It is not possible to change the Drop Mode during a recording.

13.4.   Auto Duck

In the MultiTrack and EasyTrack Editors the auto duck function has its own dialog box, because of the possible multiple tracks. To automatically duck one or more tracks:

1. Click the menu **OPTIONS – AUTO DUCK**. A dialog box appears (see picture on the right):

2. Click **INFO** and **DUCK**, to assign the selected function to a track. Duck tracks will be temporarily faded out temporarily where audio objects reside on info tracks.

3. If you do not want to apply an auto duck to the whole project, then define the area for which you want to apply the auto duck, by left- and right clicking in the track section. If you want to duck the whole project, no area selection is necessary.

4. Click **OBJECTS**, if you want to use the info objects as control information for the ducking fades. Then, pauses within audio objects will be ignored.
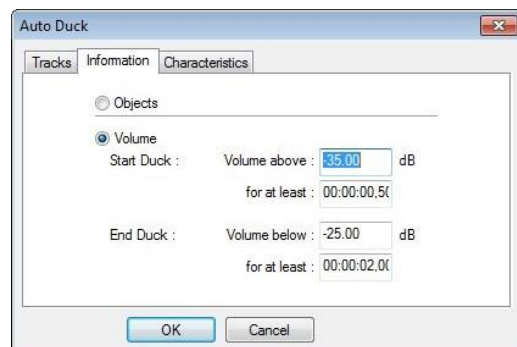
or

Click **VOLUME,** if you want to use the audio data of the info objects for the ducking fades, independently of the object volume being for longer than x sec (**FOR AT LEAST**) higher than a certain level (**VOLUME ABOVE**).

The process using objects usually is faster, however, using the volume option, potential empty areas within the objects will be considered. At these positions, the duck track will not be faded.

5. To define the fading curve, click the Fading Buttons, and drag these to the desired position.

To change the middle fading buttons vertically (i.e. volume), right click the Fading Button. The icon changes from ▤ to ▥, the buttons may be moved vertically now.

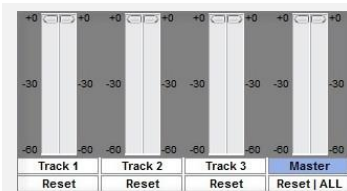The time and volume entries may be done alternatively through numeric input.
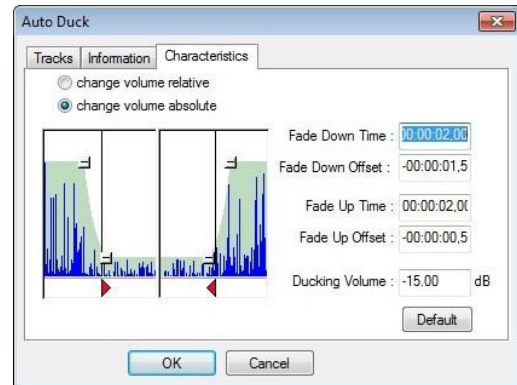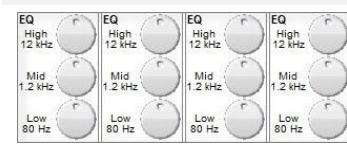
13.5. TrackMixer

With the TrackMixer each track may be assigned effects, panorama and volume changes, which will be executed with minimal latency:

1. Open the TrackMixer by clicking the TrackMixer Button in the button bar.

2. The amplification for the tracks may be changed through the slider or the master. All changes will be computed in real-time, i.e. the changes are immediately audible.

3. The 3-band EasyEqualizer is already installed in the TrackMixer for every track. Changes for the 3 frequency bands may be set with the left mouse button (continuously) or with the right mouse button (in 6 dB steps).
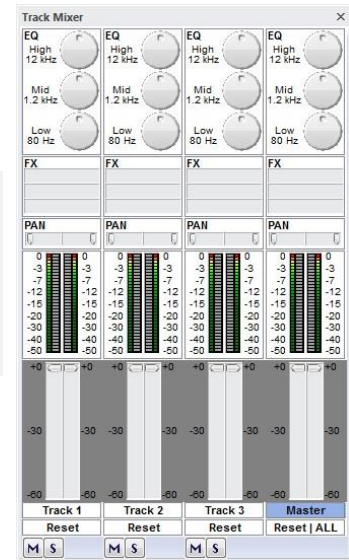
4. More effects for particular tracks (max. of 3 effects per track) may be added by drag&drop from the effects board to the effects placeholder. The effect dialog box opens automatically, for example:
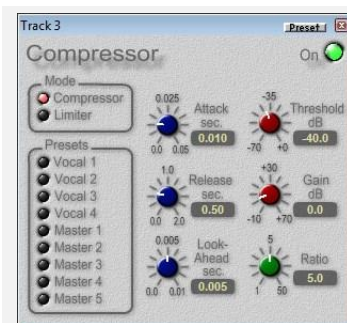
5. To reset changed channel settings, right click the channel (sections EQ and PAN) and click „Reset".

6. To reset the adjusted values of a track, click the "Reset" button of the respective track. The button **All** executes this function for all track mixer areas.

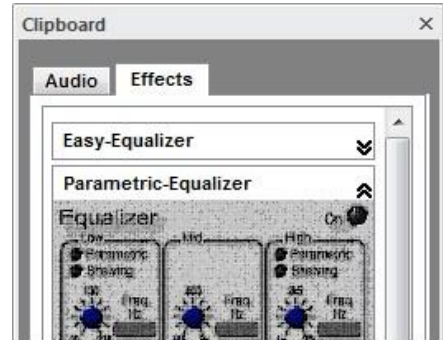7. By these two buttons you switch the according track solo or mute.

When changes in the track mixer are applied, the track mixer button displays a modified image.

13.6.　Use Effects

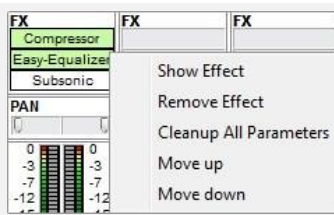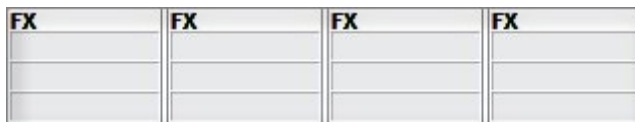The MultiTrack and EasyTrack Editors provide a clipboard tab "Effects".

Here, the 4 standard effects **EasyEqualizer, Parametric Equalizer, Subsonic Filter and Compressor,** and all installed DirectX and VST effects are shown.

Open the "Effects" tab in the clipboard.

13.6.1.　APPLY EFFECTS TO TRACKS

Open the TrackMixer.

Drag the effect from the clipboard to the FX placeholder of the desired track (max. of 3 effects per track). Effects being integrated this way are processed from top to bottom. Active (green) effects are deactivated (bypass) with a left click. The order of the effects is changed with a right click and the options **move up/down**. **Show effect** opens the effect window and **Remove effect** removes it from the fx-placeholder; the effect below will move up into that slot to fill the gap.
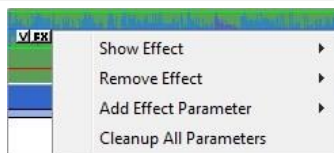
Correct / Delete Effects

Right clicking the effect at the TrackMixer FX place opens the context menu for changing or deleting the effect.

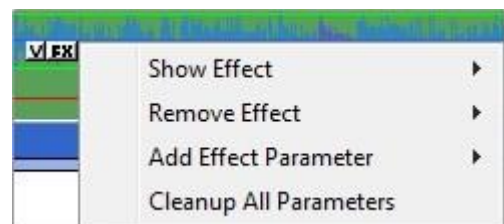### 13.6.2.　APPLY EFFECTS TO OBJECTS
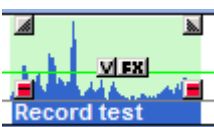
Drag the effect to the desired audio object (in block view). The effect properties box opens.

Additionally, a new "FX" icon in the block view indicates that at least 1 effect has been added to the object.

Correct / Remove Effects

Left clicking the FX icon opens the context menu for changing or removing the applied effect.

Repeat Effect

The **Volume** and channel **Balance** may be edited also in real-time (see chapter "Real-time Editing"). Real-time Editing is only available for effects delivered by DAVID.
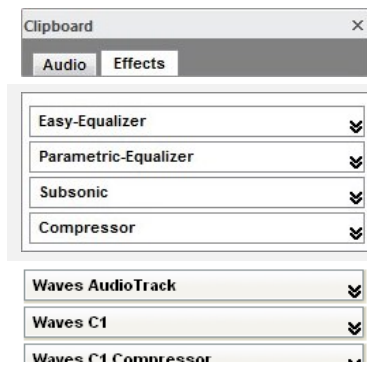
Select the desired effect parameter:

In block view, drag the effect to the desired object. Select the parameter under "Add Effect Parameter".

13.6.3. PRESET ADMINISTRATION

See 13.6.4.1 Preset-Management.

13.6.4. AUDIO EFFECTS

Effects – switches to the effects tab, which contains all available effects.

Standard Functionality – the first (up to 4) effects are part of the standard delivery of the MultiTrack and EasyTrack Editors. Depending on your user rights, you have access to: Easy-Equalizer, Parametric-Equalizer, Subsonic, and Compressor.

DirectX – below the standard effects, there are system-registered effects, which may be activated with the DirectX interface.

VST 🌐 **–** The MultiTrack Editor V5 provides integration with VST-compatible effect plugins, e.g. 🌐 Waves 9 plugins.

13.6.4.1.   Preset-Management

Preset All DAVID-supplied effects provide Preset Management, to be activated with the **PRESET** button. With this button, frequently used effect settings may be saved user-specific or global, and be recalled quickly.

Please note: Currently the preset functionality is only available for Windows XP, for Vista and W7 only with de-activated Aero User Interface.

1. Open an effect and set the parameters

2. Click the **PRESET** button in the title bar of the effect dialog. The following context menu appears:

3. Click **NEW** and enter a name for the actual setting. Clicking **OK** saves the setting.

4. To apply a saved preset, click the **PRESET** button and select the desired preset. The effect potentiometers will be set to the selected values.
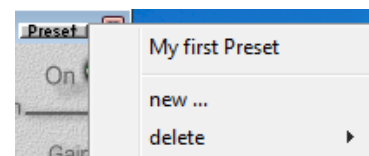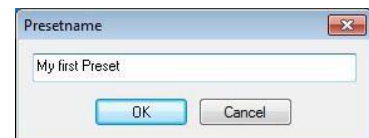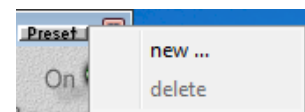
13.6.4.2.   Easy Equalizer

The Easy-EQ performs a relative volume change of three pre-defined frequency range between -18 and 18dB.

🌐 The middle band frequencies, the filter modes (shelving/parametric) and filter curves can configured for all three bands.

13.6.4.3.   Parametric Equalizer

Parametric-Equalizer Parameter Description

Modus:	Parametric: Changes the volume of the defined frequency band (see below).
	Shelving: All frequencies below (low) and above (high) the defined band is cut.
Freq. (frequency band)	Low 20 Hz – 220 Hz
	Mid 100 Hz – 8 kHz
	High 1 kHz – 20 kHz
Q-Factor	The higher this value is set the smaller is the defined band width (1…100)
Gain	Gain changes the volume of the defined frequency band width (-18…18 dB).

Note: The low and high frequency filters are either parametric or shelving filters. For a shelving filter, the Q potentiometer has no function. The mid frequency filter is always parametric.

Valid settings for frequencies are in the range of 10 Hz to (0.5*Sample rate – 0.1*0.5*Sample rate)	Example for a sample rate of 48000 Hz: Frequency range 10 Hz to 21600 Hz (=24000 Hz – 2400 Hz)

13.6.4.4.   Subsonic

Subsonic Parameter Description

CutOff Freq: Frequencies below the following levels may be cut: CUT40 Hz, CUT80 Hz and CUT120 Hz
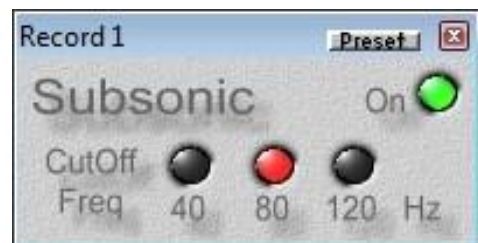
13.6.4.5.   Compressor

Compressor Parameter Description

Modus:	Selection of compressor / limiter mode

|	
Presets:	**VOCAL 1 :** 2:1 ratio, long attack, long release, low look ahead **VOCAL 2 :** 4:1 ratio, short attack, short release **VOCAL 3 :** 6:1 ratio, very short attack **VOCAL 4 :** vocal limiter to avoid clipping, may lead to distortion with extreme thresholds. **MASTER 1** : Master compressor with 1ms attack and short release
	MASTER 2 : Master compressor with 0.1ms attack und short release **MASTER 3** : Limiter with long release (avoids clipping, reduces however the gain) **MASTER 4** : Limiter with average release (signal will be strongly compressed) **MASTER 5** : Limiter with very short release (may negatively influence the sound)
Threshold:	sets threshold in dB
Ratio:	sets ratio 1:x (1.0.. 50.0)
Attack:	sets attack time in sec
Release:	sets release time in sec
Gain:	sets gain in dB
Look Ahead:	Sets look ahead time in sec (<0.01sec), causes however delay!

13.7.   Use the Track Overview
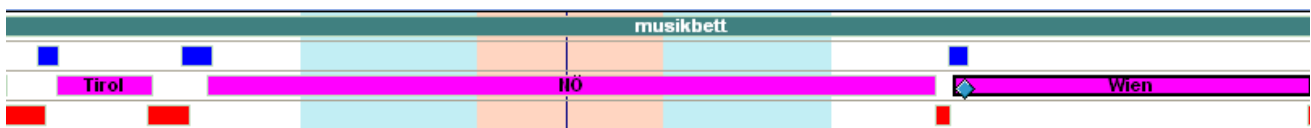
The track overview shows all tracks and all objects for the whole project. Some coarse working steps are possible here, too.

13.7.1.   INSERT CLIPS

Drag the clip from the clipboard to the desired position in the track overview.

The drop mode also works in the track overview. To change the drop mode during drag & drop, hold the left mouse button, and right click to move the clip to the track overview.
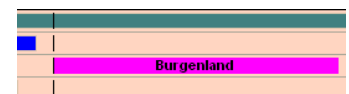
13.7.2.   MOVE AUDIO OBJECTS

1. Mark the desired object. The object will be highlighted with a black border. To mark several objects, hold the CTRL key (selective add) or the SHIFT key (inclusive add) and click the objects.

Selective add (CTRL key)

Selective Add (CTRL Key)

Inclusive add (SHIFT key)

Inclusive Add (SHIFT key)

2. Drag the objects to the desired position.

14.
Minimized View Working steps
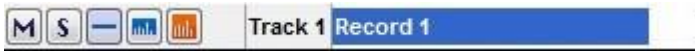
The MultiTrack screen offers several different track views:

Minimized Display

Block Display

Edit Display

These displays provide different functions, available only after the display has been activated. Therefore, also the working steps in the MultiTrack screen are ordered accordingly in these displays.

The minimized view contains only the functions mute and solo, as it displays the track and its objects at minimal space, in order to provide more space for other tracks.

15.   Block View Working steps

15.1.   Edit Audio Objects

The Block View is a working modus in the timeline, focused on object alignment and rough volume editing.

15.1.1.   INSERT CLIPS

To insert clips, also the drop mode may be used. In the desired drop mode, drag the clip into the track overview. The keys ALT, CTRL or SHIFT are not required for this.
   Drag the clip to the desired position in the track or in the track overview.

1. When you hold the SHIFT key during the insert operation, an object may be inserted overlapping with another object in the same track. The Crossfade Editor appears (see Chapter "Crossfade" below). This complies with the drop mode "Overwrite", however, there, no crossfade will be opened.

2. If you hold the CTRL key, then an object may be inserted overlapping with another object in the same track. The object part from the insertion point will be moved to the right by the length of the inserted clip. This complies with the drop mode "Ripple"

3. If you hold the CTRL+SHIFT keys, then a clip may be inserted inside of another object over all tracks, i.e. the object parts in all tracks will be moved to the right from the insertion point, by the length of the inserted clip. This complies with the drop mode "Ripple All".

4. With CTRL + Shift + click, a clip will be inserted at the actual sound head position of the next free track, without using drag & drop.

15.1.2.   MARK AUDIO OBJECTS

For several operations with audio objects (for example delete, group) first mark the object:

1. Left click the object. The object background will be highlighted.

   or

2. Right click the desired object. A context menu appears.

   Click **SELECT OBJECT**.
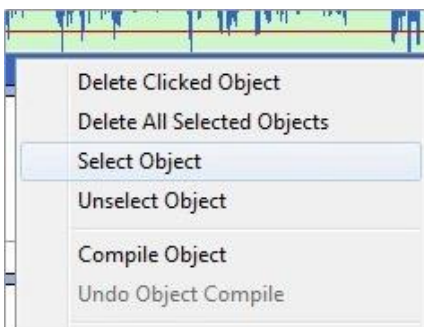
3. To select several objects, hold the CTRL key (selective add) or the SHIFT key (inclusive add) and click the objects.

15.1.3.   UNDO SELECTING OF OBJECTS
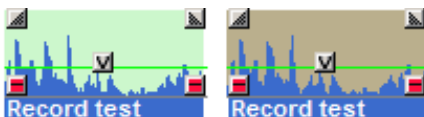
1. Right click the desired object. A context menu appears.
2. Click **UNSELECT OBJECT**.

15.1.4. MOVE

To manually move an object and synchronize it with other objects, take these steps:

Hold the take with the left mouse button and move the object to the left or right, until the right position is found. If the object should only be moved minimally, then move it a bit further to activate the move function. This helps to avoid accidental moves. The mark shows at which position the take will been set.

The mark indicates either the object start or end, depending on where you touched the object. The mouse pointer indicates the marker position as well.

15.1.5. MOVE OR COPY TO OTHER TRACKS

To move an object to another track, proceed as follows:

1. Drag the audio object to the desired position at the other track.

If no time shift should result, but the audio object rather should be moved to the same position on another track:

2. Hold the ALT key during the operation.

To copy an audio object:

3. Hold the CTRL key during the operation.
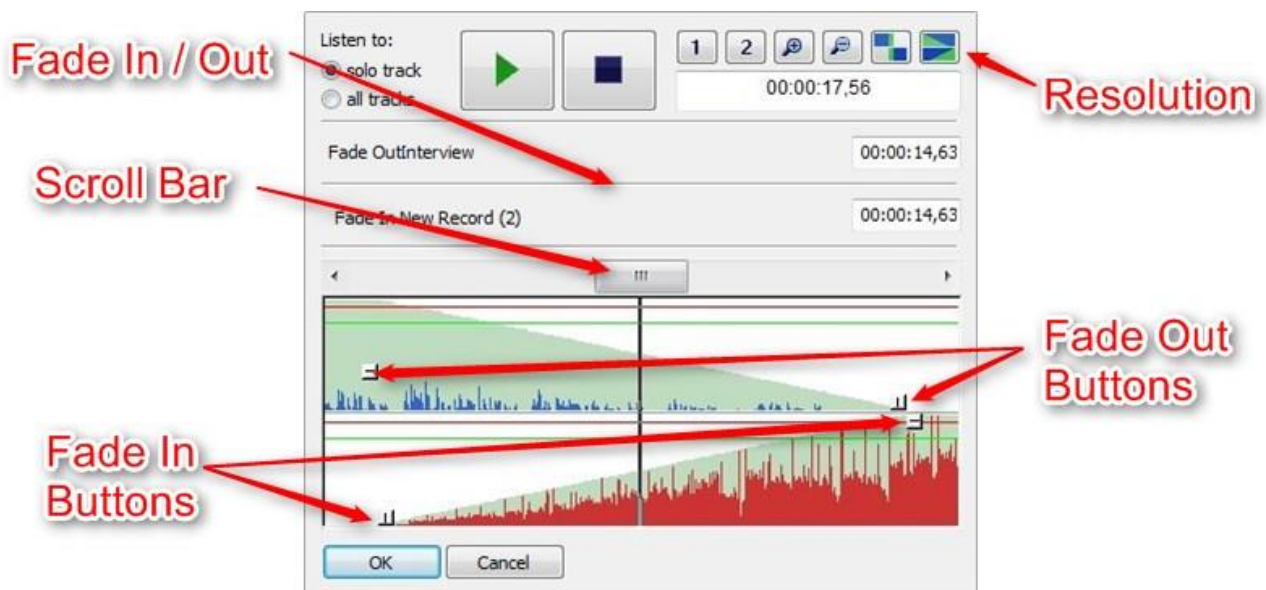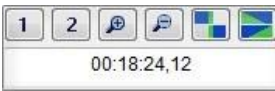
15.1.6. CROSSFADE

Objects which are moved cannot overlap by accident, but rather be only appended. However, if you want to insert a crossfade between two objects, then:

1. Hold the SHIFT key.

2. Drag the desired clip or audio object over an object in the track, so that these overlap.
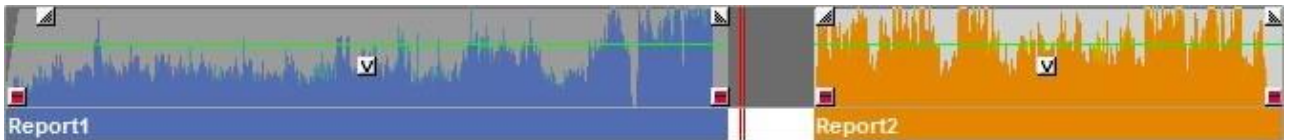
3. After releasing the mouse button the dialog box for entering crossfade curves appears:

Resolution setting for the crossfade waveform. The resolution of the buttons
may be arbitrarily defined in the section below. The
button shows the section in the length of both crossfade objects.

The button shows the crossfade area.

Playback of the whole area from the actual sound head position.

With the slider, the sound head may be shifted to any position.

With the fade buttons, volume and time values of both objects may be defined. Any fade button may be switched from horizontal to vertical with the right mouse button.

Upper Fade Button of the Fade Out Object

Fade Out
Length : 00:01:06,91

Horizontally shifted, this button marks the start of the fade out area. With shifting, the mouse information (left) appears.

Fade Out
Max : +1.01 dB
Amp : -0.28 dB
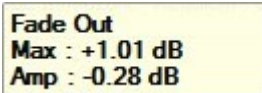
Vertically shifted, the amplification of the fade out object may be corrected. With shifting, the mouse information (left) appears.

Lower Fade Button of the Fade Out Object

Fade Out
End : 00:02:39,94

Horizontally shifted, this button marks the end of the fade out object, i.e. the fade-out object may be shifted right. With shifting, the mouse information (left) appears.

Fade Out
Fade : -20.76 dB

Vertically shifted, the end volume of the fade out object may be corrected. With shifting, the mouse information (left) appears.

Upper Fade Button of the Fade In Object

Fade In
Length : 00:00:39,17
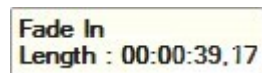
Horizontally shifted, this button marks the end of the fade-in area. With shifting, the mouse information (left) appears.

Fade In
Max : +1.75 dB
Amp : +0.52 dB

Vertically shifted, the amplification of the fade-in object may be corrected. With shifting, the mouse information (left) appears.

Lower Fade Button of the Fade In Object

Fade In
Start : 00:02:00,76
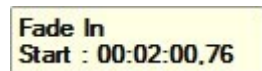
Horizontally shifted, this button marks the start of the fade-in area, i.e. the fade-in object may be shifted left or right. With shifting, the mouse information (left) appears.
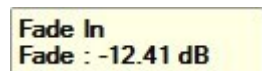
Fade In
Fade : -12.41 dB

Vertically shifted, the start volume of the fade-in object may be corrected. With shifting, the mouse information (left) appears.

1. Click one of the **FADE** buttons, to set the object time or volume. With the right mouse button, you may switch between horizontal and vertical move.

2. Click the desired button below fade in /out to set the characteristics of the fade curve.

3. Playback the result with **PLAY,** and correct it if necessary.

4. Confirm the crossfade with **OK.** The result will be displayed in the track:

The crossfade buttons ⊠ show the crossfade area. The mouse information shows the crossfade data.

Later Crossfade Correction

To correct the crossfade, double-click the waveform between the two crossfade buttons. The crossfade dialog opens, the changes may be performed as described above.

15.1.7.   INSERT OBJECT FADES

   Fading in / out of an object:
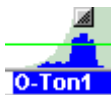
1. Point with the mouse to one of the FADING buttons (right top). The mouse information about the object fade in appears, showing the fade name and length. In the example to the left, a fade-in with a length of .54 sec.

2. Drag the button left / right to reach the desired fading time.

15.1.8.   TRIM AUDIO OBJECTS

Each audio object in block view has a red trim point at the lower end of start and end. These trim points may be used for direct trimming of audio objects within a track.
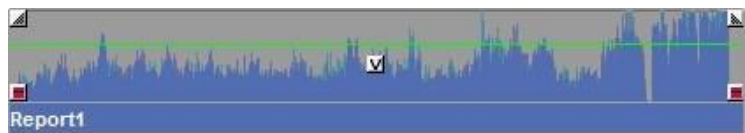
1. Hold the left mouse button and point to one of the trim buttons. The original take, from which the audio object originates, will be shown next to the audio object, in a closely related color.

2. Drag the Trim button to the right or left, to find the correct start/end point.

15.1.9. DIRECT TIME STRETCHING FOR AUDIO OBJECTS

With the CTRL key held, the trim and stretch function (whilst the cursor points to a trim button) is shown. Stretching is possible between 50% and 200%. Limitation: grouped objects may not be stretched.
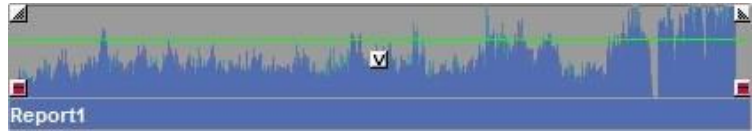
This function may be deactivated per user in the Administration Section.

1. Hold the CTRL key. The red trim buttons now work as stretch buttons.

2. Drag the red stretch buttons right / left to stretch / shorten the object.
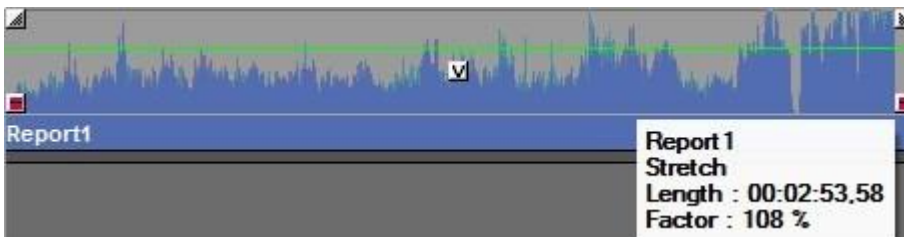
3. To reset the object to its original setting, drag the **STRETCH** button back to 100% or double-click the object, and enter the value into the field "Stretch factor".
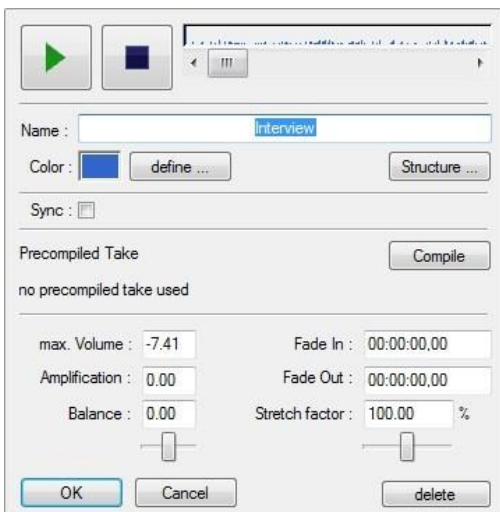
15.1.10. CHANGE OBJECT VOLUME

A track may consist of several separate objects. To change the volume of an object:

1. Point to the Volume button. It is located in the upper center. The mouse info appears:
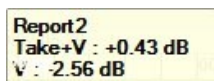
   It shows the name, the max. object amplitude and the relative volume change. In our example, the name is Soundbite 1, the max. level is 2.78 dB, the object was already increased by 2.04 dB

2. Double-click the object to open the properties dialog box, and enter the volume level in "max. Volume".
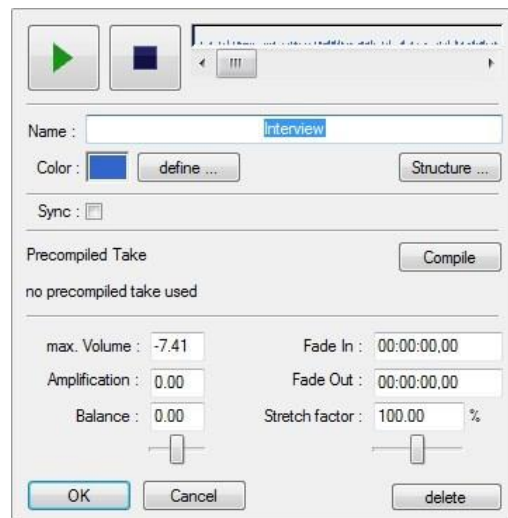
15.1.11.   GROUP OBJECTS / TRACKS

Several objects or tracks, whose production is completed, may be grouped. This results in grouping several objects on 1 track, in order to synchronize these as one entity, or to simplify the overview for a large production. Objects/tracks will be grouped in the following way:

Mark the objects which you want to group, by holding the CTRL key and clicking on the objects in the block display. The waveforms of the marked audio objects appear on marked background. All objects of one/all tracks will be marked with the context menu, and with the commands MARK ACTUAL TRACK or MARK ALL TRACKS.
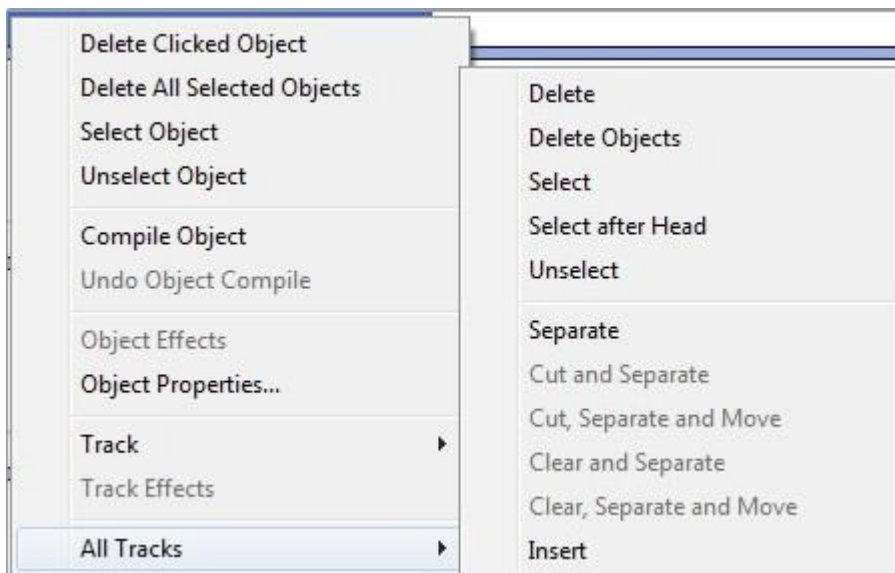
Click "GROUP" in the symbol bar, to group the marked objects.

15.1.12.   RESOLVE GROUPS

To resolve a group:

1.   Mark the group. The button Resolve Group will be activated.

2. Click RESOLVE GROUP. The group will be resolved.

15.1.13.   DELETE OBJECTS

1. Right click the object. The context menu appears.
2. Click **DELETE OBJECT**.

15.2.   Edit Track

A track can be edited the following ways:

15.2.1.   MARK TRACK

To i.e. delete a track, it must be first marked:

1. Right click the desired track. A context menu appears.

| | Delete Track |
| Delete Track Objects |
| Select Track |
| Select Track after Head |
| Unselect Track |
Delete Clicked Object	Cut Inside
Delete All Selected Objects	Cut Inside and Move
Select Object	Cut Outside
Unselect Object	Cut Outside and Move
Compile Object	Separate
Undo Object Compile	Separate at In/Out Positions
	Cut
Object Effects	Cut, Separate and Move
Object Properties...	Clear
	Clear, Separate and Move
Track ▶	Copy
Track Effects	Paste
All Tracks ▶	Insert

2. Select the submenu **ACTUAL TRACK**.

3. Click **MARK**.

15.2.2.   UNMARK TRACK

1. Right click the desired track. A context menu appears.

2. Select the submenu **ACTUAL TRACK**.

3. Click **UNMARK TRACK**.

15.2.3.   CHANGE VOLUME / STEREO POSITIONING

Both the volume and stereo positioning of a track may be changed:

1. Click TRACKMIXER in the symbol bar.

2. Move the Volume / PAN levelers of the desired Track. Every change is calculated in real time and immediately audible.
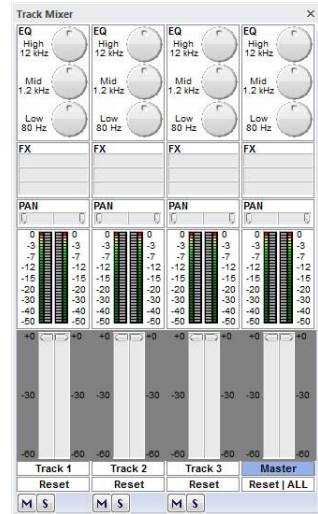
15.3.   Global Commands

15.3.1.   SELECT ALL TRACKS

To mark all tracks:

1. Right click a track. A context menu appears.
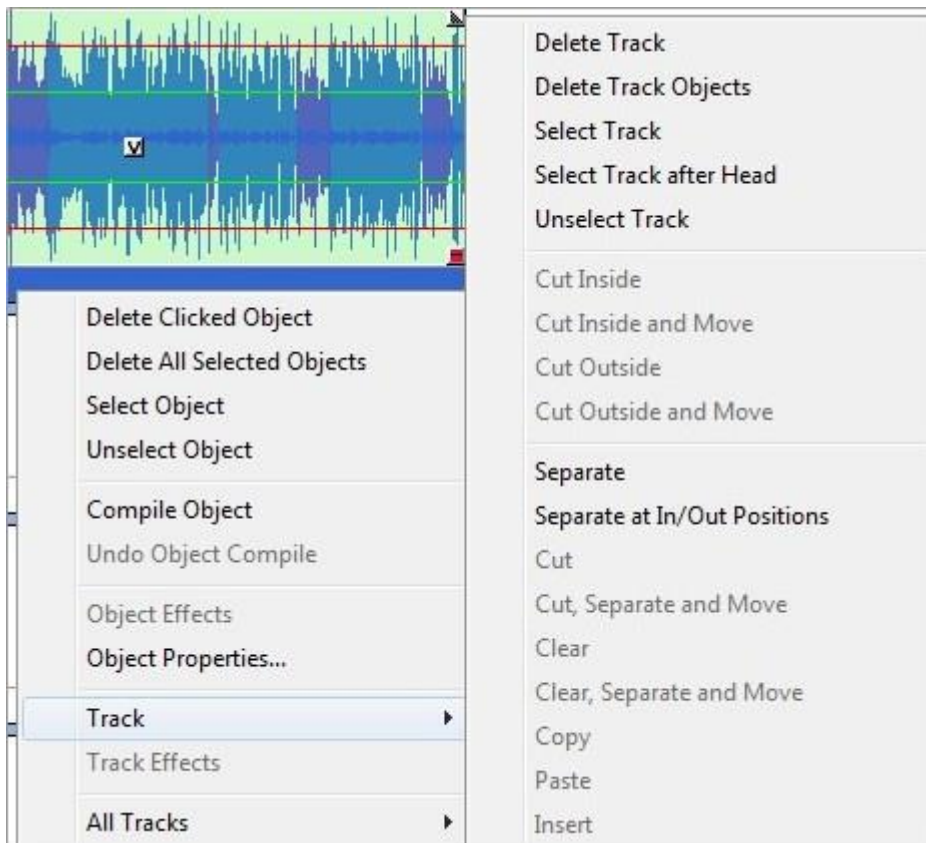
2. Select the submenu **ALL TRACKS**.

3. Click **SELECT TRACK**.

15.3.2.   UNSELECT ALL MARKS

1. Right click in a track. A context menu appears.

2. Select the submenu **ALL TRACKS**.

3. Click **UNSELECT TRACK.**

15.4.   Synchronization Points

Synchronization points improve the alignment of audio objects in the timeline

15.4.1.   DIALOG BOX SYNCHRONIZATION

To exactly arrange objects to certain positions, sync points will be set. There are several alternatives:

Select the menu **OPTIONS – DEFINE SYNC POINTS**, to open the dialog box for synchronization:

Max Catch	In this field you may enter within which time span the cursor jumps to the next sync point when synchronizing. If the catch has been set too long, and the distances between two sync points are too short, then synchronization problems may result. The audio object then may not be set correctly on a sync point, but rather jumps to the next sync point which the time span tolerates.
Grid Markers	These sync points are repeated, starting at time 0, by the selected option time (hh:mm:ss,00), samples (linear resolution), frames (Musicam resolution), or BPM (Beats per Minute). These sync points are displayed in black.
Free Markers	There, sync points may be defined arbitrarily by clicking **ACTIVE** and **DEFINE**:
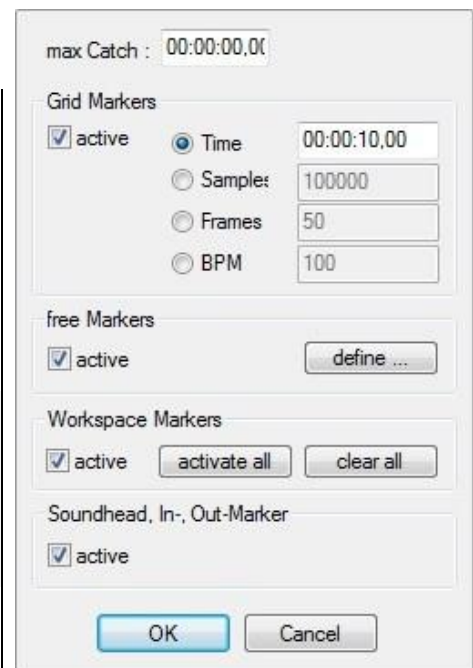
1. Enter the sync point data in Position and Name

2. Enter this point in the list by clicking ADD.

3. Individual points may be deleted by marking these and then clicking DELETE.

Workspace Markers	Activating this option displays markers, which underlie certain objects, as sync points. These are the sync points from the object borders (start and end of a project) and the markers within objects. Sync points at object borders will be shown in pink, the ones from markers in light blue. The sync points from workspace markers may be de-/activated by **ACTIVATE ALL** and **CLEAR ALL**. You may however also activate the sync points of only one marker, one selected audio object, or one track:

Define Sync Points of particular Markers

1. Change to the EDIT VIEW of the particular track.

2. Right click the marker. A dialog box appears:

```
Marker Parameter                        [x]
Name : Marker          Position :  00:00:09,6{
Sync : ☐
Type : ◈   ▶   ◯   ◀
    OK        Cancel          delete
```
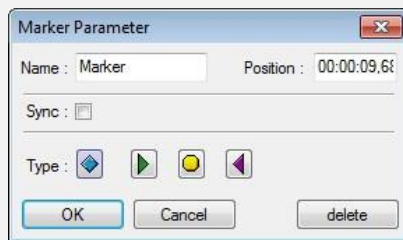
3. Click **SYNC** and confirm with **OK**. Now, only this marker will be activated as blue sync point.

Define Sync Points of particular Audio Objects

Double-click the desired audio object, a dialog box appears:

```
  ▶       ■      [waveform]

Name :            Group
Color : ▮   define ...              Structure ...
Sync : ☐
Precompiled Take                    Compile
no precompiled take used

max. Volume :  0.74      Fade In :  00:00:00,00
Amplification :  8.16    Fade Out :  00:00:00,00
Balance :  0.00      Stretch factor :  100.00  %
       —                    —
   OK       Cancel            delete
```
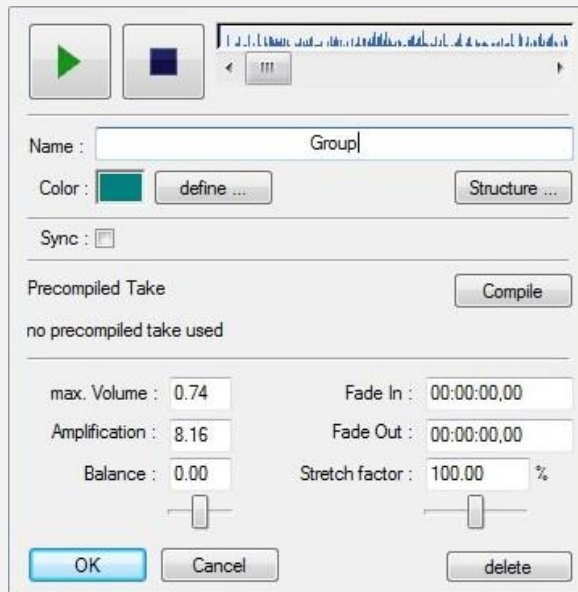
Activate Sync. After closing the dialog box, the sync points show up at the start and end of the audio object, as pink sync points in the sync bar.

Define Sync Points of particular Tracks

1. Click TRACK INFO, a dialog box appears:

2. Activate Sync. After closing the dialog box, the sync points of all audio objects of this track show up as pink sync points in the sync bar.

Sound Head, In-, Out Marker	Activates the sync points sound head, and in and out marker. The sound head sync point will not be shown, as it is represented by the sound head symbol, however, the object to be synchronized within the time span will be "cached". The sync points of the in and out markers are shown in red.

15.4.2. USE MARKERS AS SYNC POINTS

To synchronize the markers of two objects:

1. Activate the track overview. The markers will be shown.

2. Move the mouse pointer to the marker position in the source object.
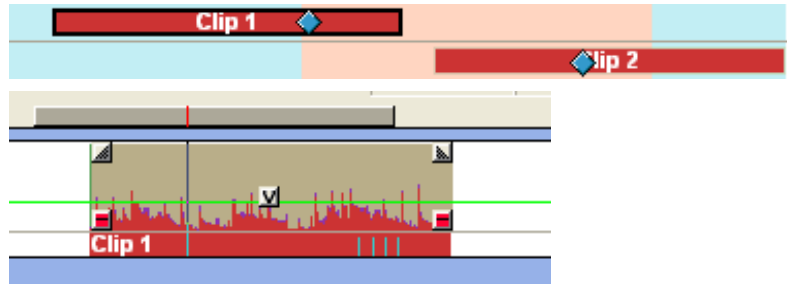
3. Drag the object in the direction of the target object, and watch the action in the track overview. The vertical orientation line will be displayed in the tracks and in the track overview.
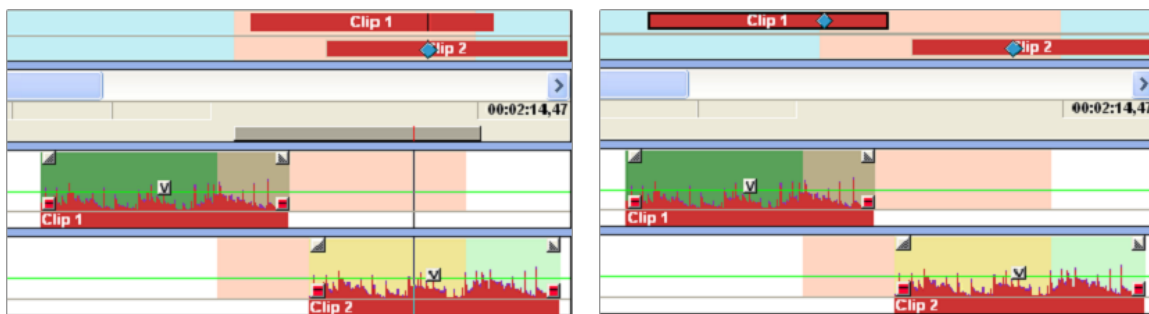
4. Drag the clip until the orientation line of the source object is reached and release the mouse.

16.   Edit View Working steps

The edit view is a working mode in the timeline to perform precise volume editing with a larger variety of editing tools, than in the block view.

16.1.   Markers

Markers are set in the Audio Editor similar to the SingleTrack screen, for example, to mark positions at the first playback.

Three different types with 3 markers each may be defined. These are usually named as Intro – Refrain – Outro. The names may be defined as default in **OPTIONS – SETTINGS – GLOBAL 2**, but every marker may also be named individually and freely.

All markers may be set repeatedly during an ongoing or halted playback. They may be freely named and shifted.

16.1.1.   SET MARKERS

1. Position the sound head at the desired place, or playback the take with the PLAY button.

2. Click the desired MARKER button in the MARKERS tab**.**

3. To later shift a marker, hold the CTRL key and shift the marker with the left mouse button to the desired position.

16.1.2.   NAME MARKERS

All markers may be named freely. Just set the marker to the desired position, see below, and:

1. Right click the desired marker. A dialog box appears:
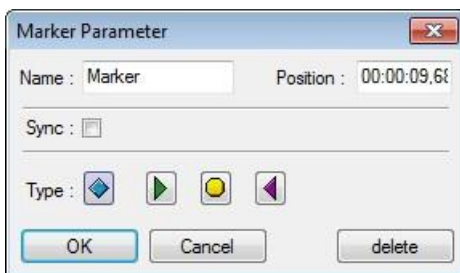
2. Enter the desired name. You may correct the position, define the marker as sync point, change the type (the symbol), or delete the marker.
3. Confirm with OK.

16.1.3.   DEFINE MARKER AS SYNC POINT

Markers may be defined as sync points, in order to align an audio object exactly at this point (see chapter "Synchronization of Points").

1. Activate WORKSPACE MARKERS in the SYNCHRONIZATION dialog box in OPTIONS - SYNC-DEFINE POINTS.
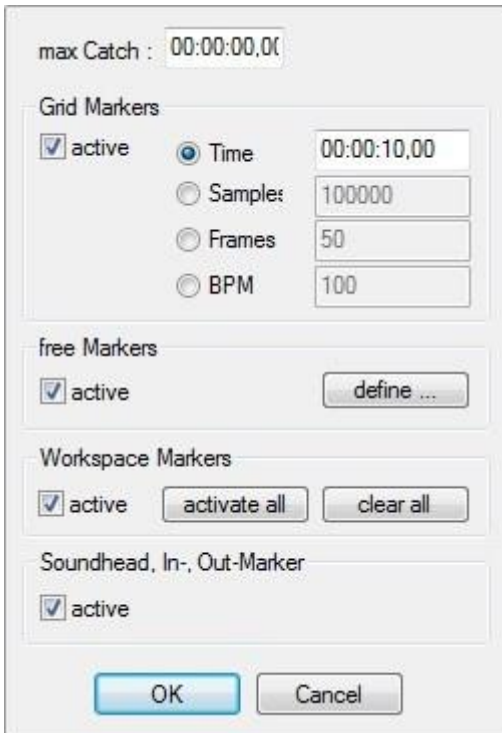
2. To display all markers as sync points, click ACTIVATE ALL.

   If you only want to display the track sync points, then activate the option SYNC at the track dialog (? -button of the track):

   If you only want to display a certain marker as sync point, then right click the desired marker, and activate SYNC:
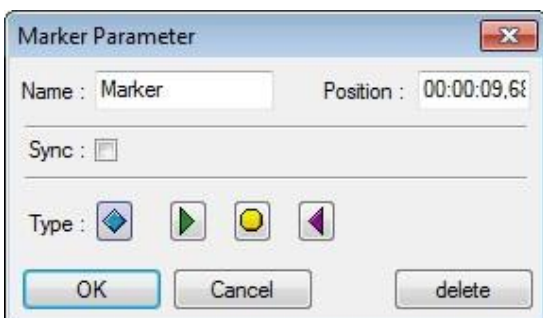
In the sync bar directly above the tracks the sync point appears as light blue marker.

3. Confirm with OK.

16.1.4. DELETE MARKERS

To delete markers:

1. Middle click the desired marker and click "Delete Marker" in the MARKER tab.

or

2. Right click the desired Marker. A dialog box appears:
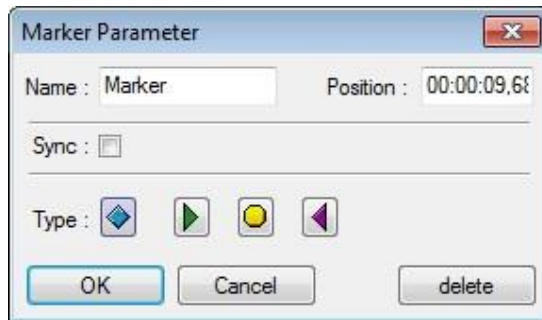
3. Click **DELETE**. The marker will be removed.

To delete all markers in the track in the edit view:

4. Click DELETE ALL MARKERS.

16.2. Waveform Vertical Zoom

In edit mode of the track view, the track may now also be zoomed vertically, for example to better recognize areas with low waveform levels.
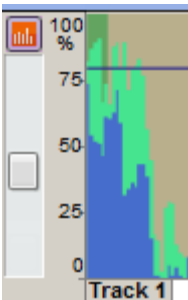
Drag the volume offset slider up, to magnify the view. The % display is adjusted automatically.

To change the scala from linear to dB, right click the area between the vertical zoom slider and the waveform curve.

16.3.   Visibly Marking of an Area

🌐 This behavior requires the alternate mouse button configuration (see **Use alternate mouse button configuration** in the **AudioEditors_V6.3_AdminManual**).

1. Shift the sound head to the area for which you want to set the markers.

2. Point to the desired point at the timeline waveform.
3. Hold the right mouse button. By clicking, the in and out markers will be set. A thin vertical line appears.
4. Drag the marker left or right, until you have marked the desired area.
5. Release the mouse. The selected cut marker will be set at the actual position.

6. To check the marker, use the buttons PLAY WITHIN MARKERS / PLAY OUTSIDE MARKERS.
7. If you want to correct/set the in or out marker more precisely, hold the SHIFT key and click the approximate position of the marker to be shifted. Hold the left mouse button, while you shift the marker to the desired position.

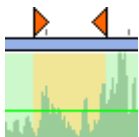The marker which is closer to the mouse position will be shifted.

16.4.   Mark an Area with Scrub Function

The scrub function supports acoustic cutting, similar to tape machines.

1. Shift the sound head to the area, for which you want to set the in marker.

2. Click **SCRUB** below the **PLAY** button. This opens a scrollbar below the track. The scrollbar position is compliant to the speed, with which the soundhead may shift for- or backward. The slider automatically jumps to the center, there is the zero point.
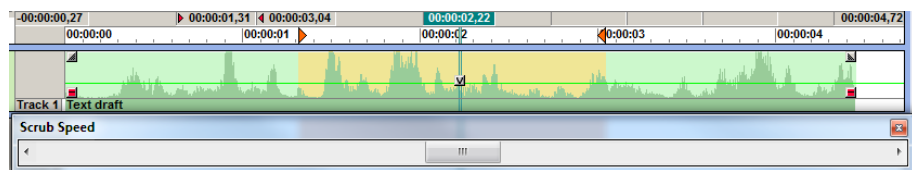
3. Press and hold the left mouse button on the Slider

4. Drag the Slider to the desired cut point.

5. Move the Slider fast back and forth (reel rocking).

6. Move the pointer approximately to the zero point and release the mouse over the exact cut position.

7. Left click the In or Out Marker to set the mark on the sound head position.

8. When correcting a mark with scrub you should always make sure that you set the markers with the **IN** or **OUT MARKER**, after you found the exact position. Only then the marker will be set on the sound head position.

16.5.   Mark an Area with a Loop Function

The transport buttons right next to the STOP button are for loop functions. The vertical bar symbolizes the sound head.

1.   Click LOOP under the desired button:

2.   PLAY LEFT / PLAY RIGHT

3.   For the in and out marker, click the buttons in the SHIFT tab during the looped playback. The selected target will be shifted by 1 / 10 / 100 frames left or right during the ongoing loop playback.

4.   When the markers are correctly set, exit with STOP.

16.6.   Move Audio Objects in Loop Mode

To move objects in loop mode, and to synchronize these with another track:
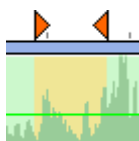
5.   Mark the object(s) in a track outside of the edit track. The waveform background appears in color. If you want to mark several objects, hold the CTRL key, and then mark the next object. The marking of several objects also effects the track in edit view:

6.   Click **LOOP** under **PLAY WITHIN MARKERS**.

7.   Click the **AUDIOOBJECTS** buttons. The marked objects will be shifted left or right by 1 / 10 / 100 frames during the ongoing loop playback.

16.7.   Cut and Edit Functions

During cut operations, you may alternatively execute commands in edit view, or export the track to the SingleTrack screen, and edit it with the Edit Station look & feel (see chapter "Working steps in the SingleTrack screen"). Thereafter, you may export it back to the MultiTrack or EasyTrack screen. This chapter describes working with the MultiTrack and EasyTrack screen.

Mark an area by setting in and out markers to the desired cut points.

Click **CUT INSIDE** in the **EDIT** tab, to cut the marked area. A pause remains with the length of the cut area.
Or:

Click **CUT INSIDE AND MOVE**, to cut the marked area. The part right of the cut point will be moved to the cut point.
Or:

Click **CUT OUTSIDE**, to cut all parts of the track except for the marked area.

Or:
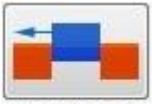
Click **CUT OUTSIDE AND MOVE**, to cut all parts of the track except for the marked area. The marked area will be moved to the start.
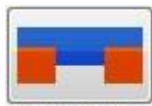
16.8.   Separation of Objects

To synchronize two parts of an object separately from each other, it must be cut first:

Click SEPARATE in the separate tab, to separate the object at the sound head position, so both parts can be synchronized separately.

Click CUT INSIDE AND SEPARATE, to cut out the marked area. Both remaining parts will be separated into 2 objects. There remains a pause in the length of the cut area.

Click CUT, SEPARATE AND MOVE, to cut the marked area. Both remaining parts will be separated in 2 objects. The second remaining part will be moved to the end of the first part.

16.9.   Insert Pause

16.9.1.   INTO AN OBJECT

To insert a pause into an object:
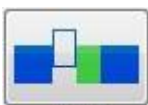
1. Mark an area with the length of the pause, starting from the insert position.
2. Click **INSERT**.

16.9.2.   GLOBAL

To insert a pause globally, i.e. to all tracks:

1. Mark an area with the length of the pause, in any track in edit view, starting from the insert position.
2. Right click in another track (which is in the block view). The context menu appears.
3. Select GENERAL.
4. Click INSERT.

16.10. Create Clip

To save an object in a track as new clip in the clipboard:

1. Mark the desired area (see above).

2. Click CREATE CLIP in the CLIP tab. A dialog box appears:
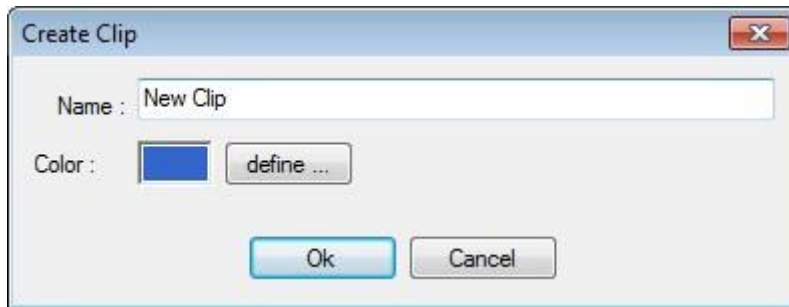
3. Insert the desired name, and change the color, if necessary.

4. Confirm with OK**.** The clip will be saved in the clipboard, positioned in the selected order.

16.11. Volume Tab

The volume tab provide some tools to change the audio volume of one or several audio objects in the timeline.

16.11.1. INSERT A FADE CURVE IN EDIT VIEW

To define a volume shaping for an area:
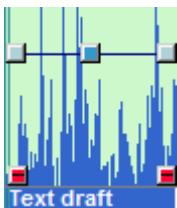
Hold CTRL and click the positions in the edit view, at which you want to set a fade marker. The fade markers appear at the mouse pointer position of the volume curve.

> While holding down the mouse button the marker position can be changed or corrected; the position will be set when releasing the mouse button.
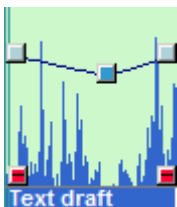
The markers may now be shifted in any direction. Drag the fader to the desired position.

Set a marker on the volume line (this does not change the volume at that position) via **CTRL + Shift + Left mouse button**.
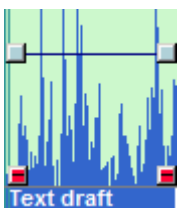
To delete individual markers, hold the CTRL key and left click the markers to be deleted.

16.11.2.   INSERT A FADE CURVE WITH THE FADE DIALOG BOX

A volume shaping may also be defined with a dialog box:

1. Mark the area, you want to edit, by in and out markers.

2. Click **FADE DIALOG**. A dialog box appears:
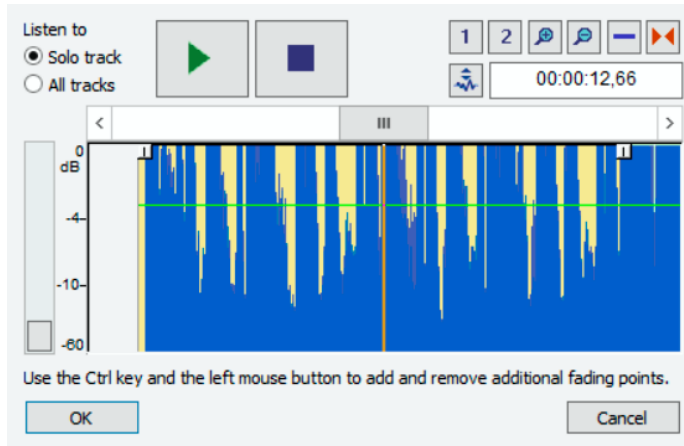
3. Hold the CTRL key and click the desired point within the marked area.

   While holding down the mouse button the marker position can be changed or corrected; the position will be set when relasing the mouse button.

After closing the dialog box, the set fade points will be carried over to the waveform in edit view, for further editing.

16.11.3. VOLUME CORRECTION

You may correct the amplification of a marked area by these steps:

1. Mark the desired area within which you want to fade in/out.

2. Click VOLUME FADER. In the timeline appears a horizontal line, which represents the max. amplitude of the volume waveform in the marked area.

3. Drag this line with the mouse to the desired position.

Accelerators: Under **Options -> Settings -> Accelerators** you can define the accelerators:

*   **Button: Volume Fader -> Increase Volume** (default: 1dB)
*   **Button: Volume Fader -> Decrease Volume** (default: 1dB)

The dB amount is definable; see the Admin manual: **Volume Fader Accelerators: Change volume steps**

16.11.4. DUCK FADE

You may duck fade the edit track for a desired area by:
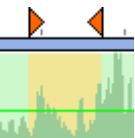
1.   Mark the desired area which you want to fade in or out, or

2. Click an object (in another track in block view) to set the marker to the end position of the object.

3. Click **DUCK**. Over the marked area, a duck fade will be inserted. The duck fade characteristics will be assumed from the settings in the **AUTO DUCK** dialog (see menu **OPTIONS – AUTO DUCK – PROPERTIES**).
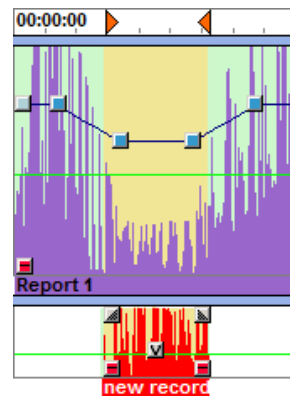
16.11.5. REMOVE FADES

Fades may be removed by:

1. Select the area from which you want to remove the fades, by setting in and out markers

2. Click **REMOVE FADELIST**.

16.12. Real-time Editing

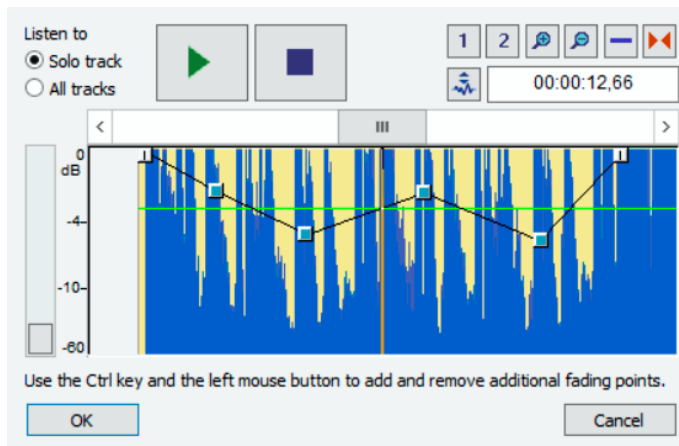Via fade control, volume, balance, and individual effect parameters may be applied to the actual object, during playback in track view:

1. Change the track to edit view

2. Hold the CTRL key and right click the waveform. The context menu shows the following commands:

16.12.1. VOLUME / BALANCE EDITING

1. To edit the volume or balance in real-time mode, select the according command. The following window will open:

2. Select the area FOR ACTUAL OBJECT / FOR WHOLE TRACK and the type of change ABSOLUTE VALUE / RELATIVE CHANGE.

3. Click Record and then Play. Drag the slider to the desired position. The changes are instantly audible. The recorded changes will be visible as fade buttons in the edit track after finishing recording, and can be changed / corrected later.

16.13. Linear Audio Editing at Sample Level

From a zoom of 2.5 sec, the display switches from frame to sample representation:
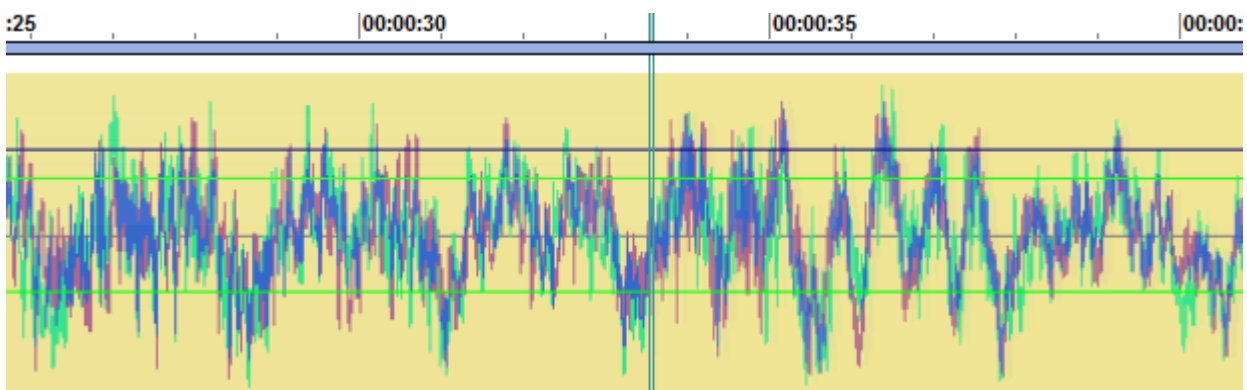
You may zoom and edit at sample level, with the following cut options:

1. Select the desired cut position from the tab:
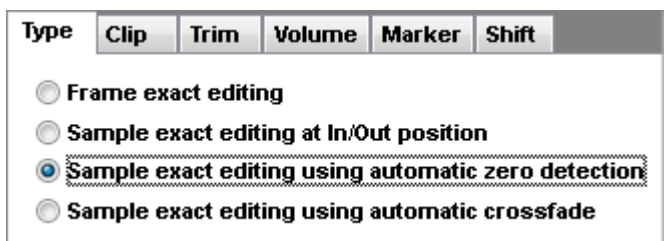
Frame exact editing	this preselection allows cutting at MPEG frame boundaries
Sample exact editing at In/Out position	the cut will be performed sample exact at in and out markers. This may result in an audio clicking at the cut position, if the cut was done at the plus and minus wave.
Sample exact cut at the next zero crossing point	the cut will be performed sample exact at the next zero crossing point. This way an audio clicking will be avoided, which results from cutting of a plus with a minus wave.
Sample exact cut with automatic crossfade	the cut will be performed sample exact, an automatic crossfade inhibits potential audio clicking.

2. Edit the clip as usual

16.14. Copy Edit Track to the SingleTrack Screen

The current edit track may also be edited further in the SingleTrack screen, and copied back to the MultiTrack or EasyTrack screen. In the SingleTrack screen, the track can be edited separately. There is no synchronization between screens.

Click COPY TO SINGLETRACK left next to the track.

For copying back to the MultiTrack or EasyTrack screens, click COPY TO TRACKSCREEN in the symbol bar.

17.   ReporterBox Working Steps

17.1.   Configuration

Before starting production, it should be clear which functions, depending on the audio configuration, are available.

By default, the recording always grabs the signal connected to the audio board input jack.

If a reporter's comment and pre-produced audio clips should be inserted at the same time to the production, then two scenarios are to be considered:

1. **Separate track management for recording and playback** (meaning inserted clips). In this case, recorded and playback objects will be saved in separate tracks, and then eventually separately edited. For this, the output channel must be replayed with a suitable preview bar (not the mixer master output), in order for the microphone signal without this output signal (X-1) to be connected to the mixer output and the audio board input.

2. **Common management of both tracks.** In this case, both signals (microphone and clip playback) will be connected via the mixer and recorded. Here, separated track editing is not possible, only the sum of the tracks.

With inserting the feed objects in track 1, and the simultaneous recording of the mixer master output, the fed objects are duplicated. And, because of the light time-delayed recording, an echo effect appears. This is not a software bug, but rather caused by using this production environment.

In this situation, to avoid duplication of the fed objects, it is recommended to activate "On Air" in the symbol bar. This causes that only track 2 will be copied into the selected MultiTrack or SingleTrack screen, or to the clipboard.

17.2.   Production List Preparation

1. Drag the desired audio, text, or combined audio-text clip to the target position in the sequence window. For saving of clips, please refer to the chapter "Working steps Record screen".

2. Individual elements may be altered later in the sequence window. This way, text partitions and audio may be marked, removed, formatted differently, added, and audio elements may be deleted or inserted.

3. With Mic On/Off**,** the microphone may be kept on during sound bite playback ("over-voicing" for example to add comments like "yes" or "aha" from an interview partner, simultaneous with playback), or be switched off during playback.

4. Click Play within the audio element, to hear it again.

5. Click the remove buttons of the audio clips, to remove these from the work area (the clip remains in the clipboard).

17.3.   Project Length Estimation

To estimate the project length, the text will be calculated together with the speech speed, and the length information added to all audio elements.

1. Click the arrow next to EST. LENGTH. A dialog box appears:
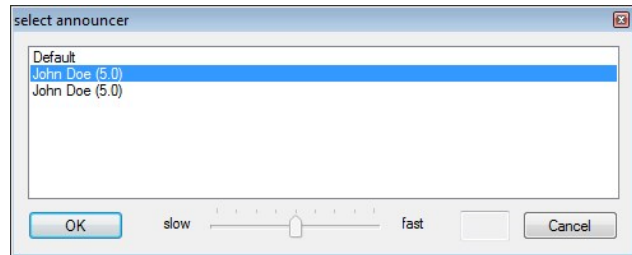
2. Select the desired user or adjust the speech speed with the arrow.

3. Click Est. Length. The estimated length will be displayed.

17.4. Speech Speed Calculation

The speech speed can be calculated with the DAVID utility DigaSpeed, which may be requested free of cost from DAVID. After opening, the following box appears:

To determine your speech speed, open digaspeed.exe and follow the instructions in "Test 1". Alternatively, you may select other text examples via Test 2 ... Test 5, or write your own text, or copy it from a MS Word file.

The calculated speech speed, in our example 50, corresponds with the value 5.0 in the MultiTrack or EasyTrack Editor (or other DigaSystem text modules).
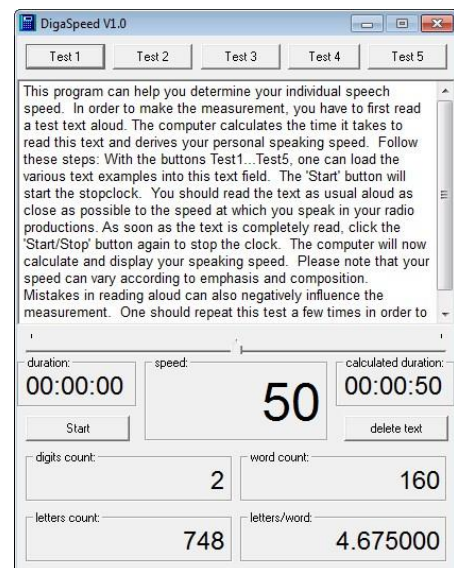
17.5.   Online Production Execution

1. Click **RECORD** to prepare recording and the start of the online production.

2. Optimally level the input signal with the **IN** slider.

3. Click Play**.** Recording starts. Record the first text by reading it from the sequence field.

4. If you want to start with the playback of the first audio clip, click **INSERT CLIP.** The first audio clip will be replayed, during which you may continue talking/recording your voice (insert or blend speech), cut off the interview partner, or other online actions.

5. Read the next text clip.

6. Start playback of the second audio clip by clicking **INSERT CLIP**, and so on.

7. For the end of production click STOP.
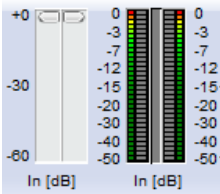
17.6.   Production Correction

A started production can be repeated from a certain position.
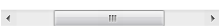
1. Drag the Slider back to the desired point. The sequence field automatically displays the actual curser position. Listen again with **PLAY** to find the correct re-entry position.

2. Click again Record, then Play, resuming the playback from the selected position.

17.7.   Continue Editing of a finished Production

After a production has been finished, it may be still further edited:

Click **CREATE CLIP**, to mix two production tracks to one track and create as clip in the clipboard. The previous separate tracks subsequently may not be edited separately any more.

Click **COPY TO OTHER SCREEN**, to import the production to MultiTrack, EasyTrack or SingleTrack screens. All previously existing tracks in the target screens will be removed. The following submenu will be opened:

Kopiere auf eine Spur

Kopiere auf zwei Spuren

Kopiere auf eine zusätzliche Spur

Kopiere auf zwei zusätzliche Spuren

Kopiere in SingleTrack Screen
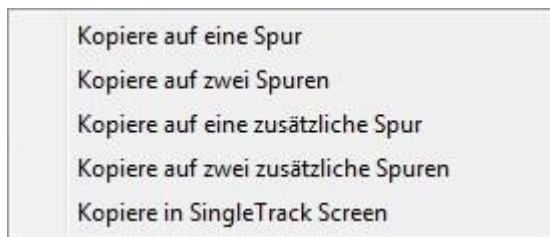
- Click **COPY TO ONE TRACK**, to mix the two tracks and import as <u>one</u> track in MultiTrack or EasyTrack screens. The previous separate tracks subsequently may not be edited separately any more.

- Click **COPY TO TWO TRACKS**, to import the production in two tracks in MultiTrack or EasyTrack screens. The two tracks later may be corrected (cut, synchronized) separately.

- Click **COPY TO ONE ADDITIONAL TRACK**, to mix the two production tracks and import in **one additional** track in MultiTrack or EasyTrack screens. The previous separate tracks later may not be changed separately any more.

- Click **COPY TO TWO ADDITIONAL TRACKS**, to import the production in two additional tracks in MultiTrack or EasyTrack screens. The two tracks later may be corrected (cut, synchronized) separately.

- Click **COPY TO SINGLETRACK SCREEN**, to mix the two production tracks and import in the SingleTrack screen. The previous separate tracks subsequently may not be changed separately any more.

Note: A ReporterBox production remains intact after export to another screen, it may later be started or exported again.

17.8.   Print Function

To have the productions process in printed form, you may print it by following these steps:

1. Right click the production flow: The context menu shows the following commands:

2. Select the desired print command (PRINT ALL or PRINT THIS ITEM**); т**he Windows Print dialog appears.

Hint: De-activation of the print function

Set the parameter "UsePrint" to 0. This hides the print commands in the storyboard context menu.

Undo
Redo

Cut
Copy
Paste
Delete

Save all …
Save this item …

Print all …
Print this item …
Page setup …

Define default…
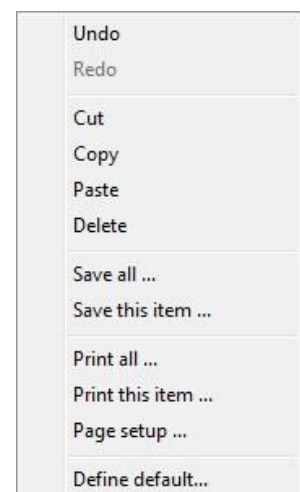
17.9.   Save Text

Text written in ReporterBox may be saved as .rtf file, for printout or further editing.

Click **FILE** – **SAVE RTF TEXT**. The Windows dialog appears.

Enter the name and confirm with **OK**.

17.10. Using DigaStudio in the ReporterBox

Hints for using DigaStudio in the ReporterBox:

17.10.1. INSERT CLIP

The INSERT CLIP button is controlled by DigaStudio's Insert key

17.10.2. AUDIO SETTINGS

For two different production approaches, there are separate options for setting sliders:

17.10.3. PRODUCTION ENVIRONMENT WITH EXTENDED EDITING FUNCTIONALITY

In a typical production environment, individual tracks will be further edited. For that, the following settings are assumed:

DigaStudio

- Channel 1: Micro **ON**, Sliders set to optimized volume.

- Channels 2 and 3: optional other sources

- Monitoring Bus: To be able to monitor all sources, the source AWS will be selected at the monitoring matrix. Hence, all sources like microphone and other sources, and inserted clips will be audible at the headset.

MultiTrack or EasyTrack Editor

- The MultiTrack Editor sliders MONITOR enable the headset monitoring of microphone and audio clips.

17.10.4. CLASSIC PRODUCTION ENVIRONMENT (ONAIR MODE)

In a typical live production environment it is assumed (like in a production with live-feed from tape) that all sources will be mixed instantly to one track. Here, during production, volume changes to the source signal are possible, as the complete output signal will be again recorded on one track. The individual production tracks (record and playback track) therefore may not be individually edited later, only the finished sum track may be edited. For this process, the following settings are to be considered:

DigaStudio

- Channel 1: **MICRO ON**, Sliders set to optimal volume. Volume changes during production will be recorded.

- Channel 2 or 3: Select AWS for one channel, volume leveling optional (for example for library music, ambience, etc.). Volume changes during production will be recorded, i.e. the result contains the performed changes.

- Monitoring Bus: To monitor the finished mix, the sum signal source will be activated at the monitoring matrix. Hence both sources, microphone and inserted clips, will be audible at the headset.

MultiTrack or EasyTrack Editor

- The **ONAIR** button must be activated.

- The MultiTrack or EasyTrack Editor slider MONITOR is to be closed completely, as otherwise a loop will be created, in which the monitor signal from the PCX board will be recorded.

18.   Loudness functions

18.1.   Loudness in the clipboard 🌐

Any audio entry/file being loaded into the clipboard –this includes new created takes/clips in the editor- will be checked for loudness data. If there are none, the editor automatically calculates the loudness data, which results in an Ear icon displayed in the field between the item info and the delete button. The ear color indicates the loudness state (see below)

If the file/entry already has been calculated, the ear is displayed according to this data.

Hover over the ear icon to show the detailed loudness data in a tooltip.
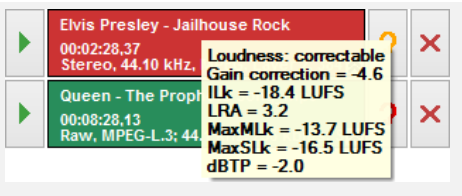
When complex clips (clips, that are made of multiple audio objects) are created **during playback or recording**, they cannot be loudness analyzed, which will be stated in the appearing **Create Clip** dialog. Such items have to be analyzed manually via the option **Loudness Analysis** in the clipboard item's context menu.
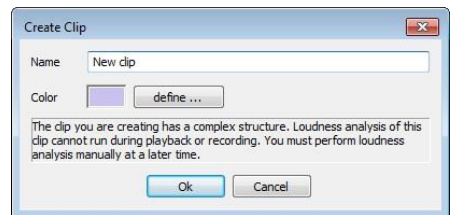
18.1.1.   LOUDNESS EARS

The Loudness Ears are displayed in three main colors (that are configurable, therefore the default values are introduced):

|		
	Compliant	This audio file matches the defined Loudness criteria, therefore it is loudness compliant.
	Correctable	This audio does not match the defined Loudness criteria, but can be corrected to the "Compliant" status by "Loudness Normalization to Take" (see below).
	Not Correctable	This audio differs to the specified Loudness criteria in a way that cannot be corrected by a simple normalization.
	Invalid Data	This icon is shown if the audio file contains inconsistent loudness data.

18.1.2. LOUDNESS NORMALIZATION

Any audio element in the clipboard can be normalized to loudness terms. This option is available for takes and clips and will perform a previous loudness analysis in case the element does not have loudness data yet. As a result, a new take/clip will be created for each object that goes through this process. The original file(s) will not be changed (non-destructive processing).

In the clipboard open the context menu of one or several selected audio items. Choose **Loudness Normalization to Take** or **Loudness Normalization to Clip** depending on which type of item you want to get in the result.

Accelerators can be assigned to both functions in the editor settings. They work if at least one audio item in the clipboard is selected.
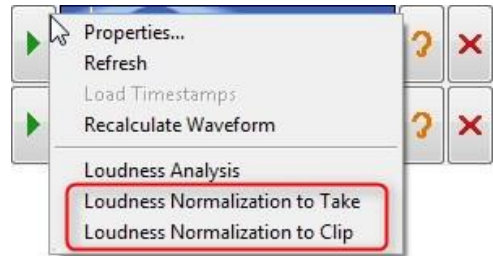
The normalizer will always try to optimize the audio, which means, if the item has to be analyzed first and it turns out to be **Not Correctable** it will -if possible- perform a normalization anyway to at least bring the audio closer to loudness terms.

The progress dialog displays the current normalization status and informs about special events during the process, e.g. reasons for not normalizing certain objects:

If there is nothing to report, the dialog closes automatically after finishing the normalization tasks.

If the normalization result would be identical to the original values, no new file will be created.

All Loudness data are saved into projects with the according files.
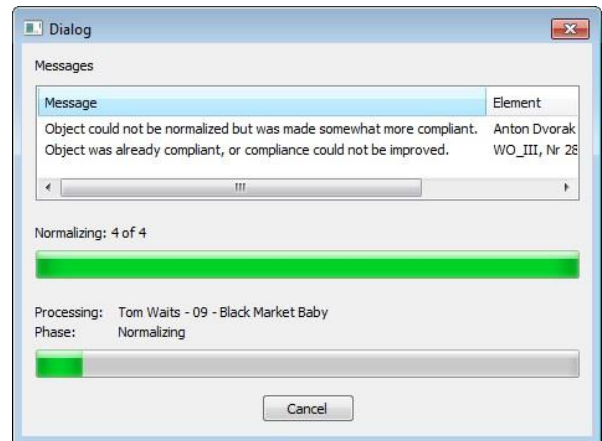
18.1.3. LOUDNESS COMPLIANT SAVING

A check box appears in the audio save dialogs (e.g. when dragging an audio element from the clipboard to the disc icon). If checked, during saving the editor will try to create a Loudness compliant audio, if possible.

If the audio is "not correctable" the normalization will be done as close as possible to the "compliant" state. A message informs about the suggested volume adjustment.

NOTE: Since the loudness meta data must be available to calculate a loudness compliant audio, the saving process will be twice as long, if the saved audio files are not loudness analyzed yet.
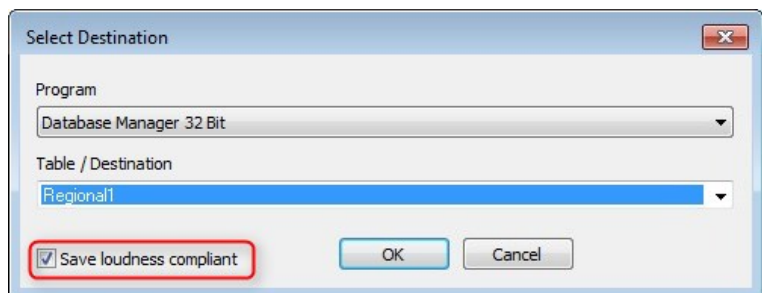
18.2.   EBU-128 compliant Loudness Meter 🌐

The Loudness Meter has been developed to help producing audio files that are compliant to "R 128" recommendations. This meter section displays five relevant Loudness values and is available in all Audio Editors.
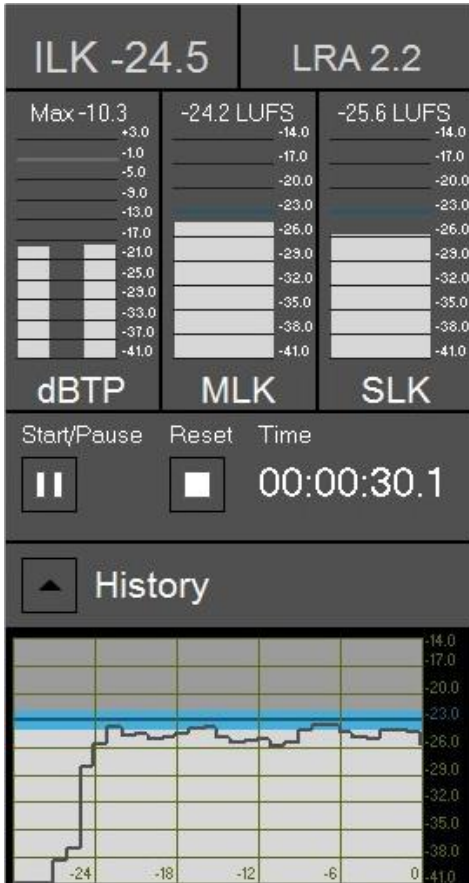
Name:	Description:
ILK:	Integrated Loudness Meter; shows the Loudness of the complete (analyzed) timeline content
LRA:	Loudness Range; shows the Loudness dynamic of the analyzed timeline content (always in LU)
dBTP:	True Peak; shows max values for each stereo channel
MLK:	Momentary Loudness: Comparable with VU meter
SLK:	Short Term Loudness; displays an average Loudness value over several seconds.
▶ ❚❚	**Start/Pause**: Starts or pauses the ILK and LRA analysis (the audio playback is still started in the Editor transport bar). When paused, those two meters will not be influenced by the current playback, so certain audio parts can be excluded from the analysis.
■	**Reset:** Resets the ILK and LRA display.

18.2.1.   HISTORY GRAPH

The history graph shows the SLK progress of the last 30 seconds. The dark blue line at marks the Loudness target level, the light blue area around it shows the tolerance value around the target level.

The display is calculated during audio playback and will be still shown when the playback is stopped. The graph is cleared either with the Reset button or by starting the audio playback again.

Vertical graph:	Loudness in LU
Horizontal graph:	Timeline in seconds with 6 seconds grids
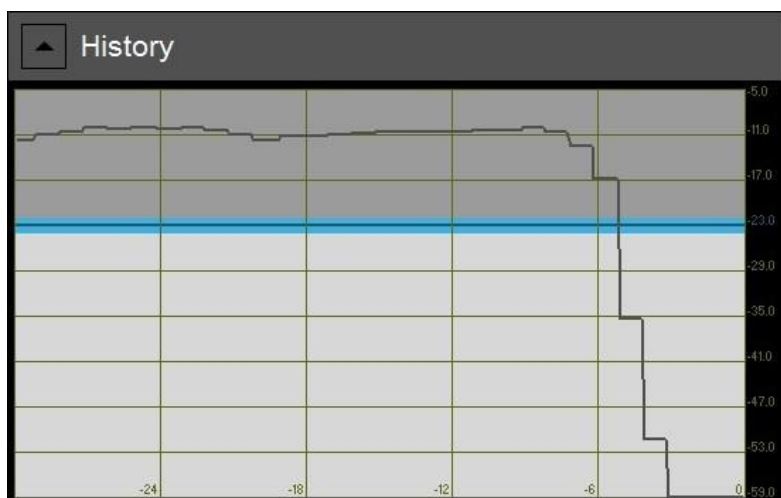
18.2.2.   LOUDNESS METER SETTINGS

With a rights click anywhere in the Loudness Meter you can access its Settings:

Scale:	The meters can be displayed in the scales **EBU R128 Scale +9** and **EBU R128 Scale +18**
Units:	Define **LU** or **LUFS** as Loudness unit
History Graph	The History Graph can be set to show MLK or SLK values

18.3.   Loudness Track 🌐

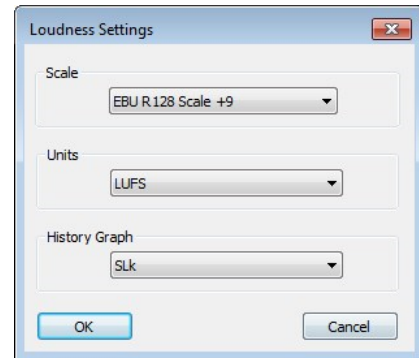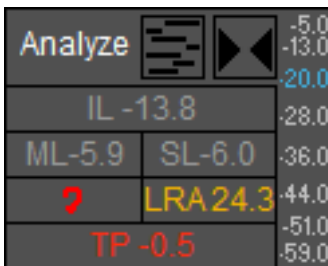The loudness track is a special track, which displays the momentary or short-term loudness curve over a time axis, synchronized with the timeline of the normal tracks. It is displayed on the MultiTrack and SingleTrack screens above the timeline and zooms and scrolls the same way as the audio tracks.

The data fields displayed in the track head can be configured by the administrator. The data relates to the most recently performed loudness analysis. When you select "Settings..." via a right-click the loudness track head, the same dialog is displayed as in the loudness meter (see 18.2.2 Loudness Meter Settings). Any changes to the loudness track also apply to the loudness meter, and vice versa.

🌐 Font colors can be configured by the administrator.

18.3.1.   DISPLAYING THE LOUDNESS TRACK

The loudness track can be displayed and hidden in the following ways:

• Using the main menu: View -> Loudness Track.

• Using the "Show/hide loudness track" toolbar button located right below the menu bar. The button is highlighted when the loudness bar is visible.

• Using the accelerator key "Show/hide loudness track" which can be defined in the Settings dialog separately for MultiTrack and SingleTrack screens.

18.3.2. RESIZING THE LOUDNESS TRACK

On the MultiTrack screen, the height of the loudness track can be changed with the mouse. When the mouse cursor is moved to the area immediately below the loudness track, the cursor changes its shape into a resize cursor ⬍. To change the height of the loudness track, press and hold down the left mouse button and move the mouse. The Loudness Track in the SingleTrack screen is not resizable.

18.3.3. LOUDNESS ANALYSIS IN LOUDNESS TRACK

The loudness track is initially empty when you start the editor, even if you load a project. To perform a loudness analysis over the complete timeline, press the "analyze all" button in the head area of the loudness track ▦, or press the "Loudness track: Analyze all" keyboard accelerator which you can define in the Settings dialog. This may consume considerable time, so you may want to analyze a part of the timeline only.

To do this, define mark in and mark out, and then click the "analyze selection" button ▶◀, or press the "Loudness track: Analyze mark in to mark out" accelerator.

While loudness is being analyzed, a progress dialog is displayed, and you cannot perform any actions in the editor, except cancelling analysis. Note that launching loudness analysis stops playout.

Loudness analysis uses all audio on all tracks, except:

- The "analyze selection" operation only uses audio between mark in and mark out.
- When a track is in "solo" state, only audio from this track is used.
- Audio from tracks in "mute" state is not used.
- In a configuration with two work spaces (separate playgroup in MultiTrack screen), only data from the upper work space is used.

18.3.4. VALID AND INVALID DATA
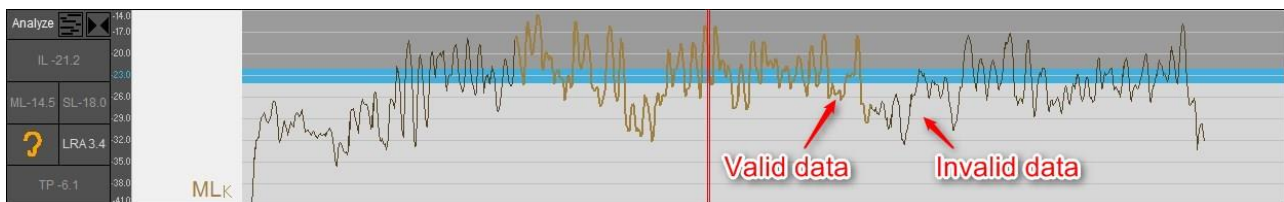
After performing loudness analysis, the result is displayed as a solid colored. When you start editing audio clips and takes, most operations make the loudness data invalid. In this case, the loudness curve is not removed but displayed as a thin line in dimmed color. It is not automatically recalculated because of the time this would consume. Likewise, the data in the track head is displayed with dimmed color.

18.3.5. FINDING LOUDNESS PEAKS

The loudness track provides to locate the time code where the highest MLk, SLk, or dBTP value is. Only valid data in the loudness track (see section VALID AND INVALID DATA) is considered. The loudness track must contain some valid data for this function to work. This functionality is only available in those editor screen where the loudness track is available.

Locate Loudness Peaks with the mouse:

Double-click the "ML", "SL", or "TP" field of the loudness track head.

Locate Loudness Peaks with the keyboard:

Using the accelerator key "Loudness: Move soundhead to maximum True Peak", and/or "Loudness: Move soundhead to maximum MLk", and/or "Loudness: Move soundhead to maximum SLk" which can be defined in the Settings dialog separately for MultiTrack and SingleTrack screens.

Keyboard shortcuts can even be used when the loudness track is invisible, provided it contains some valid data.

19.   General Settings

General Settings are subject to Rights Management, which are managed by the DigaSystem Administrator (only if a DigaSQL.DLL is installed, usually with the new DB. If this DLL is missing, then, like before, you have all rights). Hence, rights for changing several parameters may be restricted. Rights Management for the Audio Editor is described in the Technical Manual for the DigaSystem Administrator.

The user-changeable Audio Editor settings may be changed as follows:

Click **OPTIONS – SETTINGS**. A dialog box appears:

19.1.   General

19.1.1.   GLOBAL 1
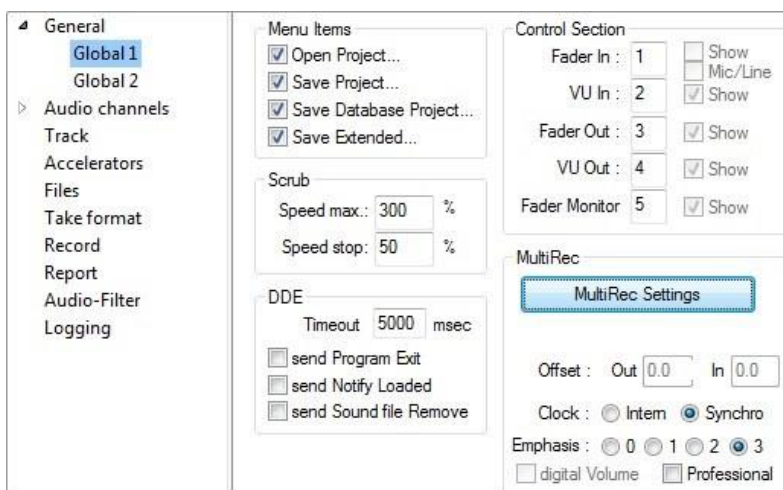
Under **MENU ITEMS,** several commands for opening and (extended) saving will be de-/activated. This affects the display of the commands in the file menu.

In the **CONTROL SECTION** you may change the order of faders and level meters at the lower window border, as well as switch on/off the recording selector between microphone and line input level.

Under **SCRUB**, the max. speed in scrub mode (**SPEED MAX**) may be entered, as well as the point at which the playback stops automatically when releasing the mouse button (**SPEED STOP**). Outside of this area, the playback will continue, even after releasing the mouse button.

Under **DDE,** the link to the DB Manager will be set. If both options are activated, then after exiting the Audio Editor, it will only be moved to the background, it then behaves like Edigas, the project still exists, until DigaSystem will be exited.

DDE: Timeout. ... MSEC

When DDE commands are executed, for example for saving a take, then this value defines the max. Audio Editor waiting time for receiving an answer. If this value has been set too low, for example 100 msec, then it may happen that the DDE partner, for example DBM, will not be recognized, and an error message (like a timeout) will be generated.

If the options are switched off, then the Audio Editor, released from the DBM, may be exited. Then a control box appears for confirmation of the exit command. The actual project will not be automatically saved.

MULTIREC SETTINGS sets the options for the audio board application. The following menu opens:
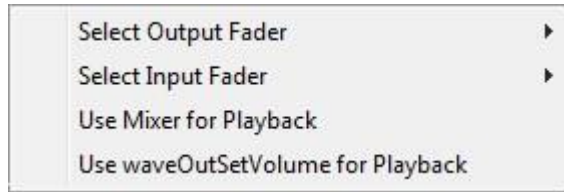
With **SELECT OUTPUT FADER / SELECT INPUT FADER** the multimedia fader will be selected, which will be remote controlled via the audio editor fader.
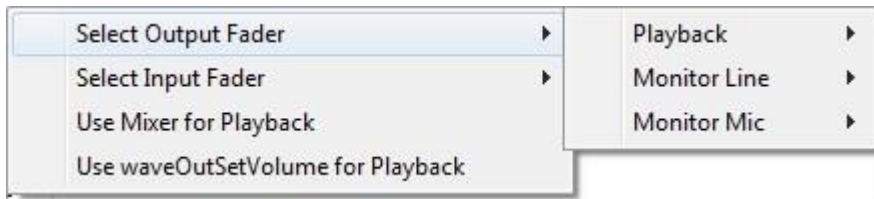
With **USE WAVEIN TO WAVEOUT**, the input level will be routed to the output level.

With **USE MIXER FOR PLAYBACK**, the Audio Editor playback volume will change the Windows Multimedia Settings accordingly, consequently the volume changes also apply to other audio applications. If this function is deactivated, then the playback volume will be set internally in the Audio Editor, with no changes to the Windows Multimedia Settings.

With **OFFSET**, de-/increasing the input/output signal will be set, to compensate for level differences with using the PCX NP driver. Furthermore, here you find input fields for clock, board number (if several boards are installed), emphasis and professional flag. **These settings/changes should only be made by the System Administrator!**

19.1.2.   GLOBAL 2

Option	Description
Help	Shows the full path to the help file. The help file is launched by clicking "Help" in the menu bar. Note: Launching the help file works with Windows 7, Windows XP, Windows Vista
Language	Sets the language of the user interface. Supported languages are English (United States), German and Polish. Switching the language of the user interface requires a restart of the Audio Editor.
Query database	Defines the storage location of audio and project data. • off: All audio and project data are stored in the file system and not in the DBM or similar programs. • On: All audio and project data are stored in the DBM. The destination table is defined by the user. • multi: All audio and project data are stored in the DBM. Additionally, users can define the database server.
Scan waveform always on top	Loading of huge audio files can consume much time. In this case, a progress dialog is displayed so the interactive user is able to estimate how long this is going to take. • Check box selected: The progress dialog is made a topmost window, i.e. it is displayed above all other windows, even above windows of other applications. • Check box cleared: The progress dialog is displayed above the MTE main window, but it can be obscured by windows of other applications if the user moves them in a matching position.
DigaStudio loop play	Defines if the arriving DigaStudio commands DIGASTUDIO_PLAYTOLOOP and DIGASTUDIO_PLAYFROMLOOP perform on loop mode or not. • Check box selected: Loop mode switched on • Check box cleared: Loop mode switched off. This emulates double or single clicks on the "play to" and "play from" buttons.
Query on unused start	Sometimes recordings start with silence/pause. This option defines whether a silent start is removed or not from the recording • Check box selected: User is prompted to decide how to handle silent start (remove or save). • Check box cleared: Silent start is saved without asking the user.
Lock layout	Defines if the user interface layout is allowed to be modified. • Check box selected: Modifications to the user interface are partly allowed to the user. The parts to be edited are set by the Administrator. • Check box cleared: The user is able to modify the complete user interface layout.
Save layout	Defines if the screen layout will be saved when exiting the editor, and loaded again with the next start.

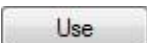| Option	Description
	• Check box selected: Current screen layout is saved. After restart the application runs with the (new) stored layout. • Check box cleared: Current screen layout is not saved. The editor will start up with the same user interface layout every time it is run.
Save fader positions	Defines if the editor should be started up every time with the currently opened screen. In order to load the same screen when starting the editor, select the checkbox and select the desired screen. If you now restart the editor, this screen will be loaded. Now clear the checkbox and the setting remains unchanged.
Save active screen	Defines if the current screen will be saved when exiting the editor, and loaded again with the next start. In order to load the same screen when starting the editor, activate this option and select the desired screen. If you now start the editor again, then this screen will be loaded. Disable this option and the setting remains unchanged.
Scrub by skip	Defines the scrubbing method when playback speed is different from normal 100%. • Check box selected: The speed will be increased by omitting particular frames without changing the tone pitch. Scrubbing is performed by skipping a number of samples if speed is above normal. If speed is slower than normal, appropriate parts are taken from original and an overlapping part is taken for the next playout buffer. The number of samples to skip is configured in the "Samples" edit. If this number is larger than the effective output buffer size -which may be configurable depending on the audio driver type -, its value is ignored and the output buffer size is applied. • Check box cleared: The audio will be pitched normal, i.e. with growing speed also the tone pitch changes. No scrub by skip means playback changes pitch of audio but has no other distortions. Scrubbing is performed by stretching the original audio into the output buffer.
Default marker names	Defines the names that are assigned to new markers when they are created. Images for marker types are: normal ▤ , intro ▯ , outro ▯ , refrain ▤ .

19.2. Audio Channels

19.2.1. OUTPUT

The Output section contains a checkmark field under **Selected channel** called **"Use advanced track routing"** that switches between the usages of one stereo channel (Stereo mode) or enables the **advanced track routing** functionality.

Stereo Mode:

This modus behaves exactly like described below in the **Input** section; only one channel pair can be selected.
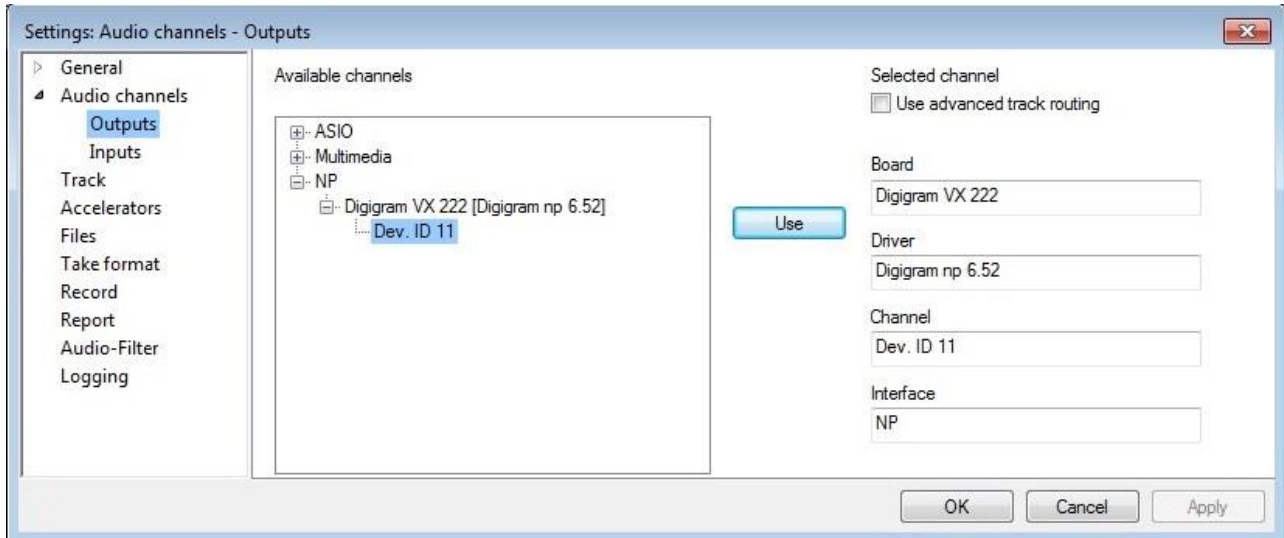
          Select Channel and click Use to load into right section, Click OK to save configuration

Advanced Track Routing:

The Multichannel mode is active, if the checkmark for **"Use advanced track routing"** is set. Using the multichannel feature works under the following circumstances:

- For the moment, <u>only soundboards with ASIO drivers</u> support this mode.
- Only channels of the SAME card can be defined, not over multiple sound boards
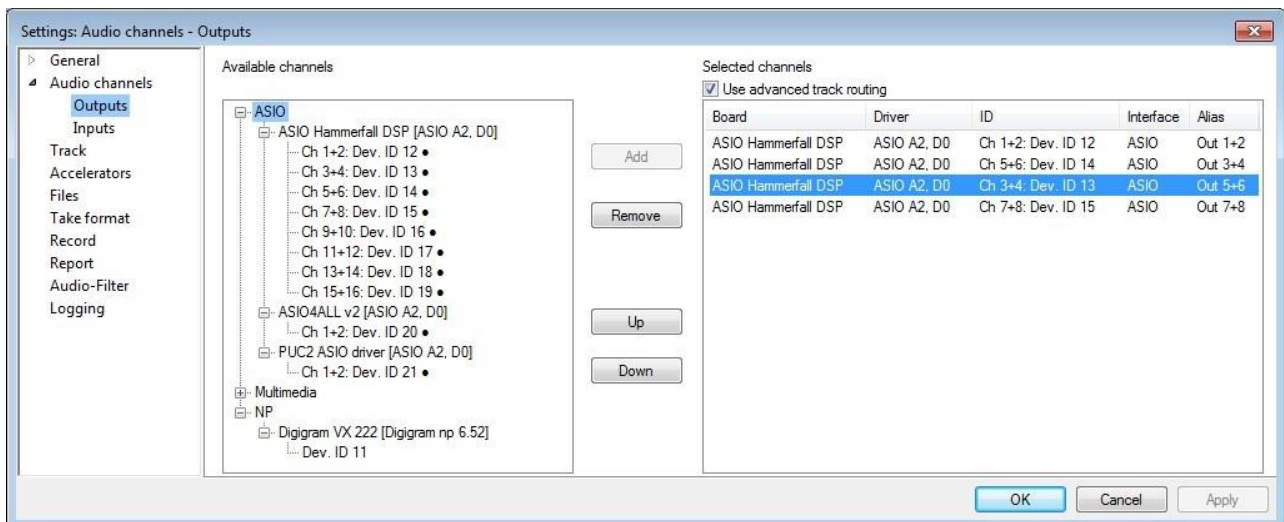
Available Channels: This field lists up all available channels, sorted as Driver model – soundboard – Channel.

Selected Fields:

Board	Name of the soundcard
Driver	Name of the soundcard driver
ID	Name audio output channel pair
Interface	Driver type (ASIO, Multimedia or NP)
Alias	Output channel assignment (selectable in the track head, see also 13.1.2 Track Routing 🔧)

Channel Assignment:

An ID will be assigned to an Alias. The alias defines the output pairs that are selectable assignments in the track head (13.1.2 Track Routing 🔧).

Board	Driver	ID	Interface	Alias
ASIO Hammerfall DSP	ASIO A2, D0	Ch 1+2: Dev. ID 12	ASIO	Out 1+2
ASIO Hammerfall DSP	ASIO A2, D0	Ch 5+6: Dev. ID 14	ASIO	Out 3+4
ASIO Hammerfall DSP	ASIO A2, D0	Ch 3+4: Dev. ID 13	ASIO	Out 5+6
ASIO Hammerfall DSP	ASIO A2, D0	Ch 7+8: Dev. ID 15	ASIO	Out 7+8

This means e.g. the sound board channels "Ch. 3+4 Dev. ID 13" (as in the picture above) are not necessarily assigned to the Alias "Out 3+4" (in the picture the assignment is "Out 5+6".

The buttons all affect the field "Selected channels":

Add	Click a selected sound board channel in the "Available Channels" field to add it to the "Selected channels"
Remove	Delete a channel assignment
Up	Move a channel pair up in the list; this changed the Alias assignment
Down	Move a channel pair down in the list; this changed the Alias assignment

If the option **"Use advanced track routing"** is deactivated, all assignments remain stored but in Stereo mode, the output is routed to the first channel until option is reactivated.

19.2.2.   INPUT

This section defines the Input soundboard channel for recordings. Only one Input channel can be configured.

Available Channels: This field lists up all available channels, sorted as Driver model – Soundboard – Channel.

Selected channel: Here the current audio channel is displayed (the fields contain non-editable information about the chosen Soundcard, driver, channel and Interface (=driver type)
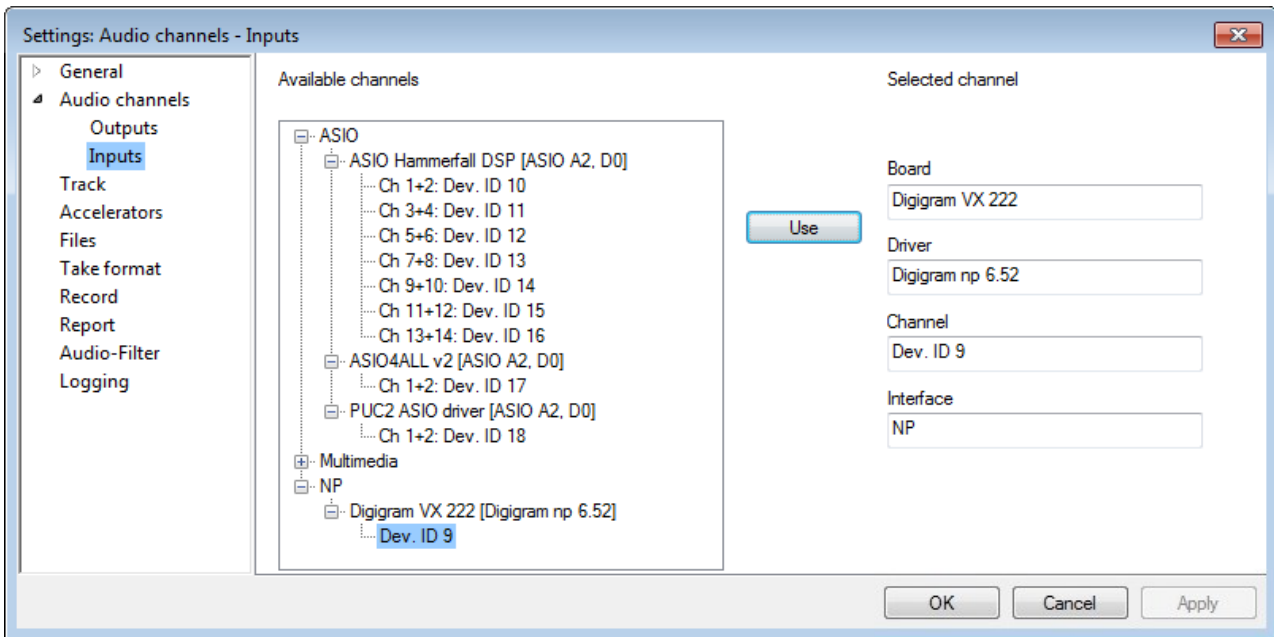
Select Channel and click Use to load into right section, Click OK to save configuration

19.3. Track

Note: The track tab in the SingleTrack Editor may differ slightly from the screenshot. Its functionality is not compromised because of this.

Under **GLOBAL SETTINGS** you may set the number of possible undo levels and the number of the startup tracks.

With **RESOLUTION 1, RESOLUTION 2,** you may set two resolutions.
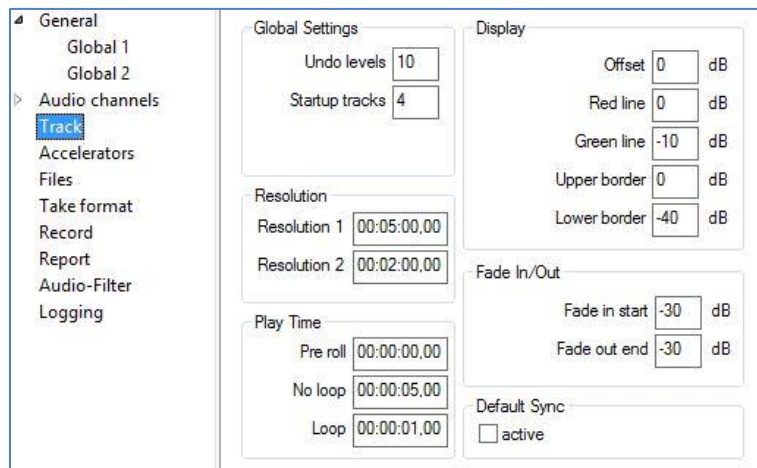
In **PLAY TIME** under **PRE ROLL** you define the time period, by which the sound head jumps (double-click Play) to the left. Under **NO LOOP / LOOP** the play times of the buttons below will be defined:

DISPLAYS (in dB Full Scale)

OFFSET	Vertical waveform zoom in/out, deviating from 100%
RED LINE	Displays the clipping border
GREEN LINE	Displays the optimal recording level

UPPER BORDER	Upper window border
LOWER BORDER	Lower window border

Under **FADE IN/OUT** you set the start level of a fade in and the end level of a fade out.
Under **DEFAULT SYNC** you decide if sync points are automatically assigned to new audio objects.
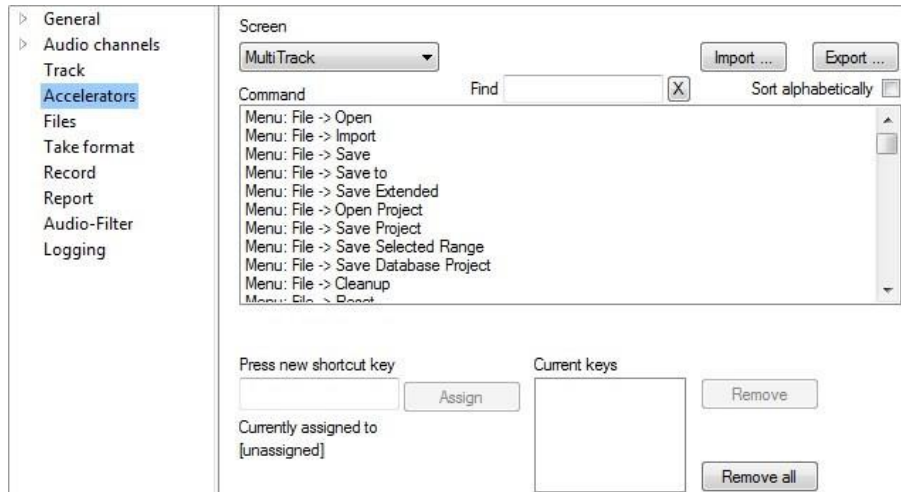
19.4. Accelerators

In the **ACCELERATORS** tab you may define keyboard accelerators for all existing commands.

Under **SCREEN** you define the screen, for which accelerators should be defined. The current working screen is pre-selected.

Under **COMMAND** you select the desired command.

Click into the field **PRESS NEW ACCELERATOR KEY** and press the desired key combination.

Then click **ASSIGN**, to enter the accelerator into the command list.

To delete an accelerator, mark the accelerator in the command list and click **REMOVE.**

To delete all accelerators of the currently selected screen (e.g. the MultiTrack screen), click **REMOVE ALL.**

The **FIND** field represents a filter that helps you search for one or more specific accelerators.

With **IMPORT**, a keyboard layout may be imported as file type Audio Editor Accelerator (.VAC extension). DAVID delivers the reference file SAMPLE.VAC.

With the key **EXPORT**, a keyboard layout of file type Audio Editor Accelerator (.VAC extension) may be exported for import to another workstation.

### 19.4.1. HARD CODED ACCELERATORS

In the Timeline:	
Zoom horizontally	Shift + Mouse Wheel
Zoom vertically	CTRL + Mouse Wheel
Play the complete marked area (between In and Out marker without soundhead jump)	CTRL+ (Play inside)
Play the complete unmarked area (outside the In and Out marker)	CTRL+ (Play outside)
Timeline: Block Display (MTE), Edit Mode (ETE)	

Move object vertically between tracks (timecode position is fixed)	Alt + Left Mouse Button
Copy object(s) (drag object within the timeline and create a copy)	CTRL + Left Mouse Button (Drag&Drop)
Copy object(s) vertically (drag object between the tracks and create a copy; timecode position is fixed)	CTRL + Alt + Left Mouse Button
Change height of all tracks	CTRL + Left Mouse button (Drag&Drop) on track boarders
Timeline: Edit Display (MTE), Volume Mode (ETE)	
Set / remove volume point	CTRL + Left Mouse Button (on volume line)
Remove volume point	Right Mouse button (on volume point)
MTE Clipboard	
Load clipboard item into first available track	CTRL + Shift + Left Mouse Button
STE Clipboard	
Clear timeline and load clipboard item into timeline	Middle Mouse Button (on a Clipboard item)

19.5.   Files

In the **FILES** tab the audio file settings will be defined.

Under **AUTOSAVE** an automatic buffer function may be activated, which saves a project before any larger work step to the file defined here. Restoration of an automatically saved project after an unexpected program crash is possible, or if the editor has not been closed orderly otherwise.
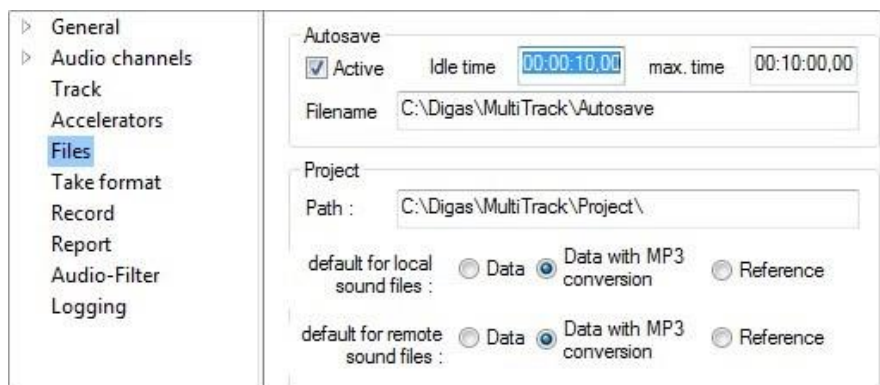
If the AutoSave function is activated, then the **IDLE TIME** defines after which time without activity the project will be saved automatically, for example buffering during monitoring the last working steps. The default setting is 10 sec. The **MAX. TIME** defines, after which time the project will be saved automatically, even when there was no idle time.

With the extended AutoSave function, depending on settings, any number of sequential AutoSave files might be written. The AutoSave files will be numbered sequentially and may be imported with the menu command "File Import".

Under **PROJECT** the project saving path is entered. Below you enter if project files should be saved including sound data, or only with a reference to the original files, separated between local and non-local projects (on a server HD or the DigaSystem DB). These are preferred settings, which may be altered however.

Additionally, there is the setting „**Files with MP3 Conversion**". MP3 files cannot be embedded into a project due to their file structure. This problem is avoided by this setting; all MP3 files are converted while saving

into a format, which is set in the tab **Take Format**. The conversion is happening when a new project is created and the resulting files are put into the project.

## 19.6.   Take Format

FILE FORMAT

Under **FILENAME** the workstation identification in the filename will be specified, as well as the Musicam and Auxiliary file extension. Also the file type will be specified:

RAW	Raw MPEG, audio file without annexes, with extension *. mus.
MUSIFILE	MPEG file with integrated volume and waveform information.
WAVE	File in linear format.
BWF	Broadcast Wave; wave sound file with header-integrated additional information, for example text fields.
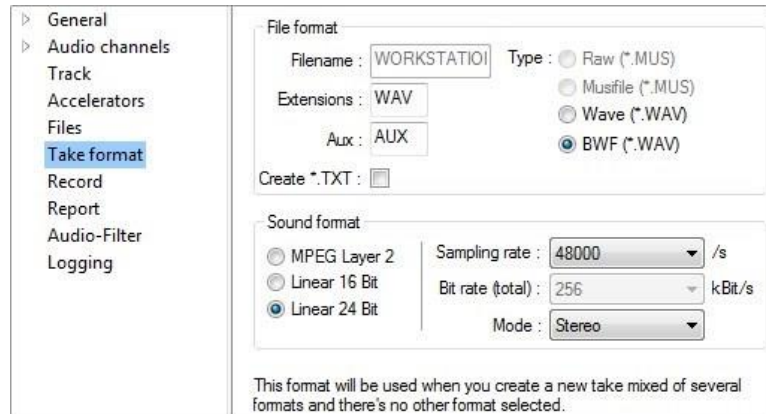
CREATE *.TXT

With the activation of this option, the Audio Editor, when creating a new take, additionally to the audio file also creates a text file with the same name, containing additional information. The text file will be saved in the same directory as the audio file, and may have the following contents:

```
[FILEINFO]
Filename=E:\SOUND\neu.mus
Creator= Audio-Editor
Date=09.02.1999,10:55:12
Length=51405
FrameLength=345
Source_1=V:\AUDIO\ALT.MUS,144,100,498,166
```
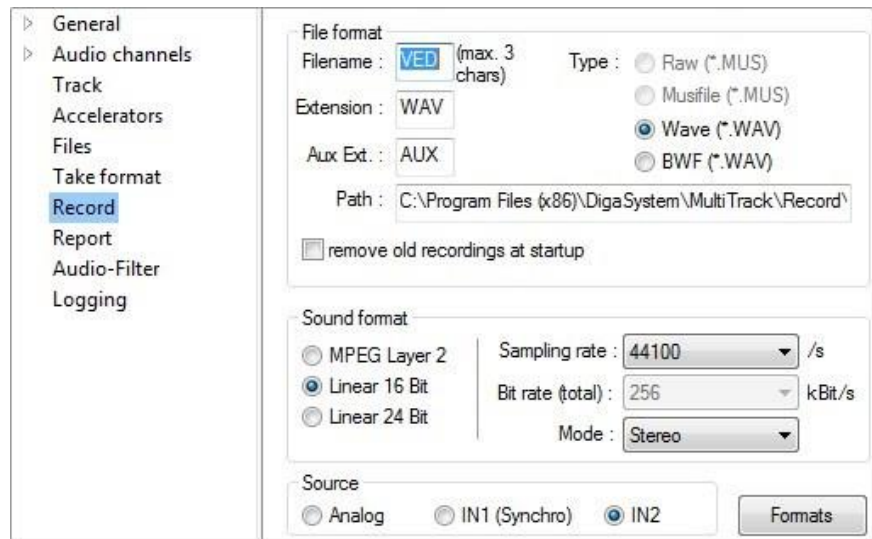
Under **SOUND FORMAT** the sampling rate, bit rate, and the recording mode will be set.

19.7. Record

In the **RECORD** tab, the settings for the recording function will be defined.

Under **FILE FORMAT** the workstation definition in the filename will be specified, as well as the Musicam and Auxiliary file extension and the path to which the recorded files will be temporarily saved. Also the file type will be specified (Raw MPEG, Raw MPEG and Auxiliary File, MusiFile, Wave, Broadcast Wave).

REMOVE OLD RECORDINGS AT

STARTUP: all old temporary audio files will be deleted at the start of the Audio Editor.

Under **SOUND FORMAT** the sampling rate, bit rate, and the recording mode will be set.

In **SOURCE** the audio board input will be specified, to which the input channel is connected.

Under **FORMATS** audio format templates will be defined, which may then be selected in the Record screen.

19.8. Report

ITEM NAMES: enter the name of the audio recording track

TIME STEP: enter the timeframe for the display of the production bars

DEFAULT FONT enter the text font

MICROPHONE MUTE – during audio playback in a ReporterBox production, the mic is switched off per default when activated, or otherwise switched on.
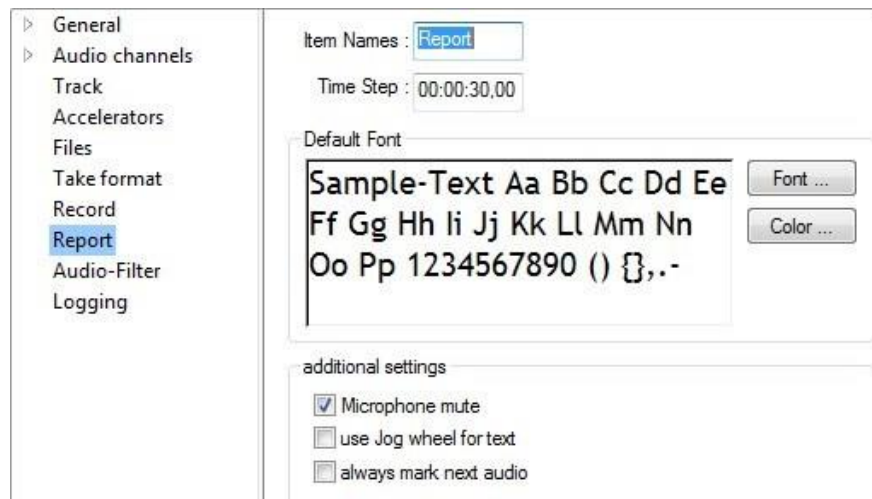
USE JOGWHEEL FOR TEXT - The DigaStudio jogwheel may be used- when activated - for scrolling of text during a ReporterBox production.

ALWAYS MARK NEXT AUDIO – with this option activated, the green arrow jumps automatically to the next audio and marks it.

19.9.   Audio Filter

In the new audio filter tab, the settings are done for effects to be displayed.

In the Admin section, there is the new setting "Auto_Change_AudioFilter", which denies users to access this tab.
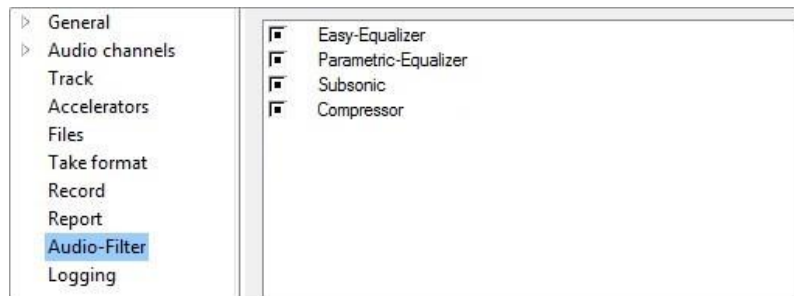
19.10.   Logging

With the logging tab, the writing of audio files from within the Audio Editor may be activated. With respect to Rights Management, the logging tab is contained in the action "Auto_Change_Setup".
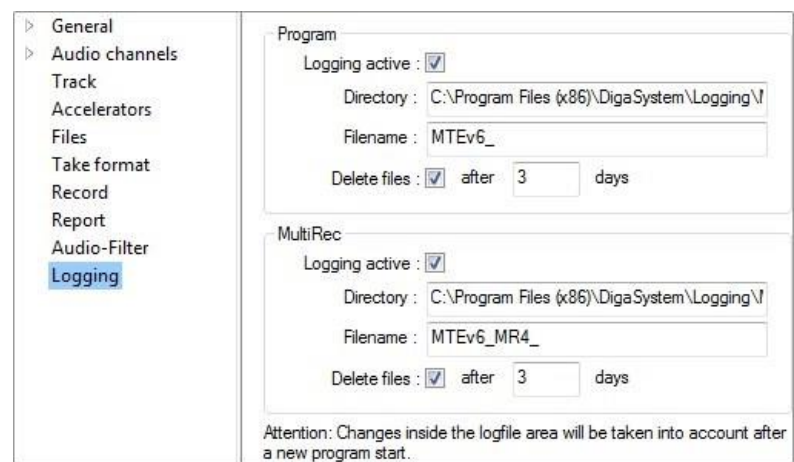
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