



Nero Recode Manual

Nero AG



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1 General information

1.1 About the manual

This manual is designed for all users who want to become acquainted with the proper use of Nero Recode. It is task-based and explains how to achieve a particular objective on a step-by-step basis.

In order to make best use of this manual, please note the following conventions:

Symbol	Meaning
	Indicates warnings, preconditions or instructions that have to be followed strictly.
	Indicates additional information or advice.
1. Start ...	A number at the beginning of a line indicates a request for action. Carry out these actions in the order specified.
	Indicates an intermediate result.
	Indicates a result.
OK	Indicates text passages or buttons that appear in the program interface. They are shown in bold face.
<u>Chapter</u>	Indicates references to other chapters. They are executed as links and are shown in red and underlined.
[...]	Indicates keyboard shortcuts for entering commands.

1.2 About Nero Recode

Nero Recode can be used to copy and archive non-copy protected DVD videos onto a DVD. If the source video is larger than 4.7 GB, it is compressed to fit on a single-layer DVD without loss of quality.

Nero Recode also allows you to exclude data from the source DVD that you do not need to copy (including subtitles and audio tracks), making space for additional videos or a higher quality of videos. The target DVD can also be written to the hard drive as a DVD video index or as a so-called disc image.

Of course, you can also compile contents from different (non-copy protected) DVDs, export them to the innovative Nero Digital™ MPEG-4/H.264 AVC format and burn them to create your own collection.

No matter whether the video is intended for playing on mobile devices or HDTV, the various export profiles allow you to adjust the output format to your requirements - and you will always receive the best quality for your respective file size thanks to the various export profiles.

So, Nero Recode lets you copy, recompile, and recode the contents of DVs and DVDs and then to burn the results onto disc.

1.3 Versions with different ranges of functions

Nero Recode is not just available in the full version. The versions differ from the full version in terms of the range of functions, i.e. they cannot perform all the tasks described in this manual and the user interface is adapted to the specific version.

The following versions are available:

Nero Recode

- Full version

Nero Recode Essentials

The following features of the full version may not be included:

- PSP export function
- iPod export function

Nero Recode Essentials SE

Exclusive features:

- Recode an entire DVD to DVD
- Burn function (via Nero API)

Nero Recode Essentials CE

The following features of the full version are not included:

- Recode an entire DVD
- Recode a main movie to DVD
- Change the structure of a DVD

1.4 Terminology

- Encoding means the conversion of a video of any format into another format, for example MPEG-2 or Nero Digital™ (MPEG-4). A corresponding encoder is required for every target format.
- Transcoding means the conversion of a video from one particular format into another particular format, for example from Xvid to MPEG-2.
- Recoding means the conversion of an existing video with certain properties (e.g. bit rate 2500 kbps) into the same format with different properties (e.g. bit rate 1990 kbps).
- Decoding means opening or playing a video that has been encoded in a particular format.



In this manual transcoding is used synonymously with encoding.

2 Technical information

2.1 System requirements

In addition to the general system requirements for the Nero Suite, the following individual system requirements apply to Nero Recode:


Optional:

- DVD-Video plug-in for DVD-Video recordings and the "DVD-9 to DVD-5" function
- Multi-core processor (recommended)

3 Launching the program

3.1 Launching Nero Recode via Nero StartSmart

To launch Nero Recode via Nero StartSmart, proceed as follows:

1. Click the **Nero StartSmart** icon.
→ The **Nero StartSmart** window opens.
2. Click the button .
→ The list of Nero applications appears.

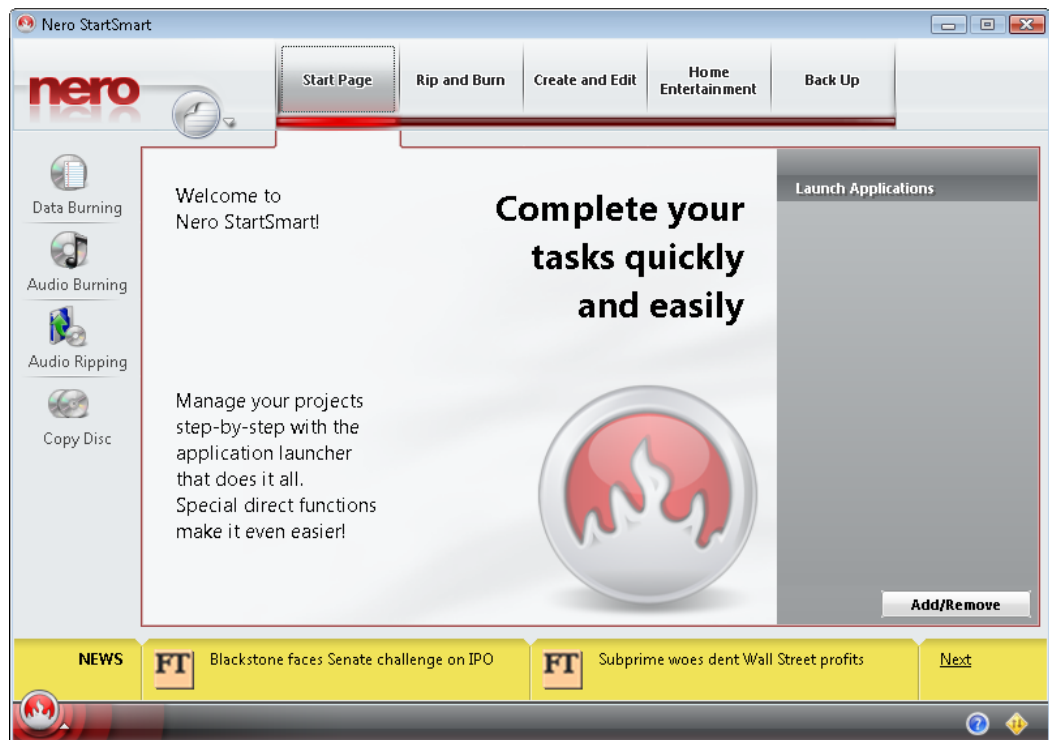


Fig. 1: Nero StartSmart

3. Choose **Nero Recode** from the selection list.
→ The **Nero Recode** window opens.
→ You have launched Nero Recode via Nero StartSmart.

4 Nero Recode start screen

After you launch Nero Recode the **Nero Recode** start screen will appear. This is where you can choose what you want to do with Nero Recode. Choose the appropriate menu icon to call up a wizard that will guide you through the required task step-by-step.



Fig. 2: Nero Recode start screen

The **Nero Recode** start screen offers the following selection options:

Menu icons	
Recode an Entire DVD to DVD	Imports DVDs including their menus and extras. Unwanted audio tracks, subtitles or video content can be removed and the structure of the video titles can be changed.
Recode Main Movie to DVD	Imports the main movie on a DVD without menus and extras. Unwanted audio tracks, subtitles or video content can be removed and the structure of the video titles can be changed.
Compile a DVD	Imports video titles and compiles an individual DVD from one or more DVDs. Unwanted audio tracks, subtitles or video content can be removed and the structure of the video titles can be changed.
Recording DVDs and videos to Nero Digital™	Imports video titles from one or more DVDs and converts them to Nero Digital™ (MPEG-4) files. Unwanted audio tracks, subtitles or video content can be removed and the structure of the video titles can be changed.
Recording the	Imports the main movie from a DVD without menus and extras and

main movie to Nero Digital™	converts it to Nero Digital™ (MPEG-4) files. Unwanted audio tracks, subtitles or video content can be removed and the structure of the video titles can be changed.
Buttons	
More	Opens and closes the extended area in which the basic Nero Recode settings can be made.
?	Displays the online help as well as the version and manufacturer information.
Exit	Closes Nero Recode.
Buttons in the extended area	
Options	Calls up a window containing various tabs that allow you set the way the program operates (see Basic settings).
Erase Disc	Erases a rewritable disc.
Disc Info	Calls up information about the disc in the drive.
Nero Cover-Designer	Launches Nero CoverDesigner in a new window. Nero CoverDesigner allows you to create covers and labels for your DVDs and CDs. You will find further details in the Nero CoverDesigner manual.



Each screen contains tooltips, detailed information, and explanations for the various buttons, icons, and menus. Move the mouse pointer over a control element for a few seconds to see the tooltip.

5 Nero Recode wizards

All the tasks you can perform with Nero Recode can be divided into four steps:

- Define the basic settings
- Import the files you want to recode
- Set the options for Nero Digital™ and for the burn process
- Burn the disc

The wizards also follow this four-step structure, so that a separate screen appears for each step. You can use the **Next** and **Back** buttons to move back and forth through the three screens while performing a task. This means that you can also change settings that you have already made and undo actions.



Nero Digital™ is an MPEG-4 codec. It is compatible with MPEG-4 Video and MPEG-4 High Efficiency AAC/AC3 and offers high-quality surround sound and high-resolution image signals for your home theater.

5.1 Basic settings

The basic settings are made on the tabs in the **Nero Recode Options** window. This is opened using the **Options** button in the extended area.

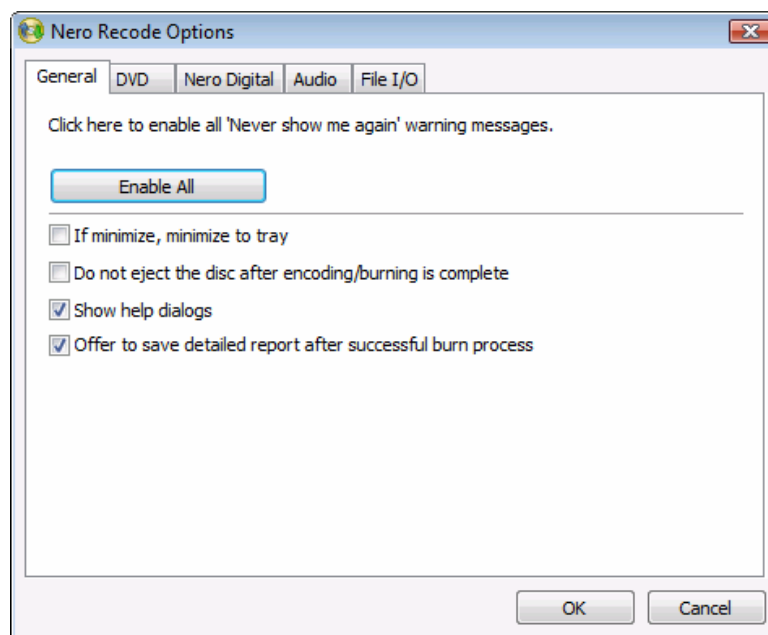


Fig. 3: Nero Recode Options window

5.1.1 General tab

On the **General** tab, you can define general Nero Recode settings.

The following input options are available:

Enable All button	This enables all warnings if these have been disabled manually.
If minimize, minimize to tray check box	Specifies that the program should appear in the status bar when minimized.
Do not eject the disc after encoding/burning is complete check box	Prevents the disc from being ejected after burning.
Display help dialog check box	Brief explanatory information that is displayed if you move the cursor over individual elements on the Nero Recode interface.
Offer to save detailed report after successful burn process check box	This enables the report generated about the burn process to be saved.

5.1.2 DVD tab

On the **DVD** tab, you can define the settings for importing and outputting DVDs.

The following input options are available:

Import DVD area:

Prompt to include DVD data files when importing check box	This determines whether this content is included in copying when importing a DVD with data content. This box must be checked if the data content is also to be copied.
Relax DVD-Video specification to allow 16-bit Unicode for the volume label check box	This relaxes the restrictions on the use of character sets. Nero Recode does not use characters from languages like Japanese or Korean, which have a 16-bit Unicode character set that does not comply with DVD-Video requirements.

Output DVD area:

Remove P-UOPs (Prohibited User Operations) from target disc check box	This determines whether the prohibited areas on a DVD are to be made available to the user while copying. For example, if the original DVD contains an area that cannot be skipped, you can use Nero Recode to remove the block so that users can skip or fast forward through the area.
Remove Layer Break check box	This removes the layer break. If the original DVD consists of two layers, there is a command on the DVD to freeze the image briefly to allow the laser to switch from the first layer to the second. When Nero Recode is used to copy to a DVD with just one layer, this command is redundant and can be removed.

5.1.3 Nero Digital™ tab

On the **Nero Digital™** tab, you can define the settings for conversion to the Nero Digital™ format.

The following input options are available:

Import preferences area

Analyze files while importing check box	Analyzes the video file while importing it.
Retain interlaced content if possible check box	Retains the interlaced content of a video file to the extent that it is possible. However, modern TVs can no longer display interlaced images.
Retain input resolution for interlaced encoding check box	Retains the input resolution of the video file when encoding is to be performed with interlaced. The resolution is not changed and picture edges are not trimmed.
Motion-adaptive deinterlacing method as preferred check box	Motion-adaptive deinterlacing method is chosen as the preferred method of encoding. Even quick motion sequences are extremely sharp and detailed with motion-adaptive. However, burning is slower.
Default adaptation method drop-down menu	Selects the method for changing video resolution. The default is Bilinear interpolation .

Various settings area:

Auto-close iTunes after iPod transfer check box	Automatically closes iTunes after transcoding to Apple iPod video.
Activate classical set of Nero Digital profiles check box	Activates the classical set of Nero Digital Profiles, available in the screens My Nero Digital Disc and My Nero Digital Film Backup in the drop-down menu Nero Digital Profiles . If the check box is disabled, Nero Digital AVC and Nero Digital Standard are offered.

5.1.4 Preview window tab

On the **Preview window** tab you can define settings for the audio quality in the DVD preview.

The following input option is available:

Preview window drop-down menu	Specifies the audio quality of the preview.
---	---

5.1.5 File I/O tab

On the **File I/O** tab you can define the method for accessing the drive for direct conversion.

The following input option is available:

File I/O area	Specifies the method for accessing the drive during direct conversion.
-------------------------	--



When reading non-copyright DVDs that have a copyright bit with **SPTI/ASPI**, a message occasionally appears in Nero Recode indicating that the DVD cannot be copied. In this case, select the **Windows® File System** when reading.

5.2 Import Files screen

The screen for importing files changes depending on the task chosen. The standard input options available in this screen are explained below. The explanation of the input options displayed, which differ depending on the task selected, can be found in the description of the individual tasks.

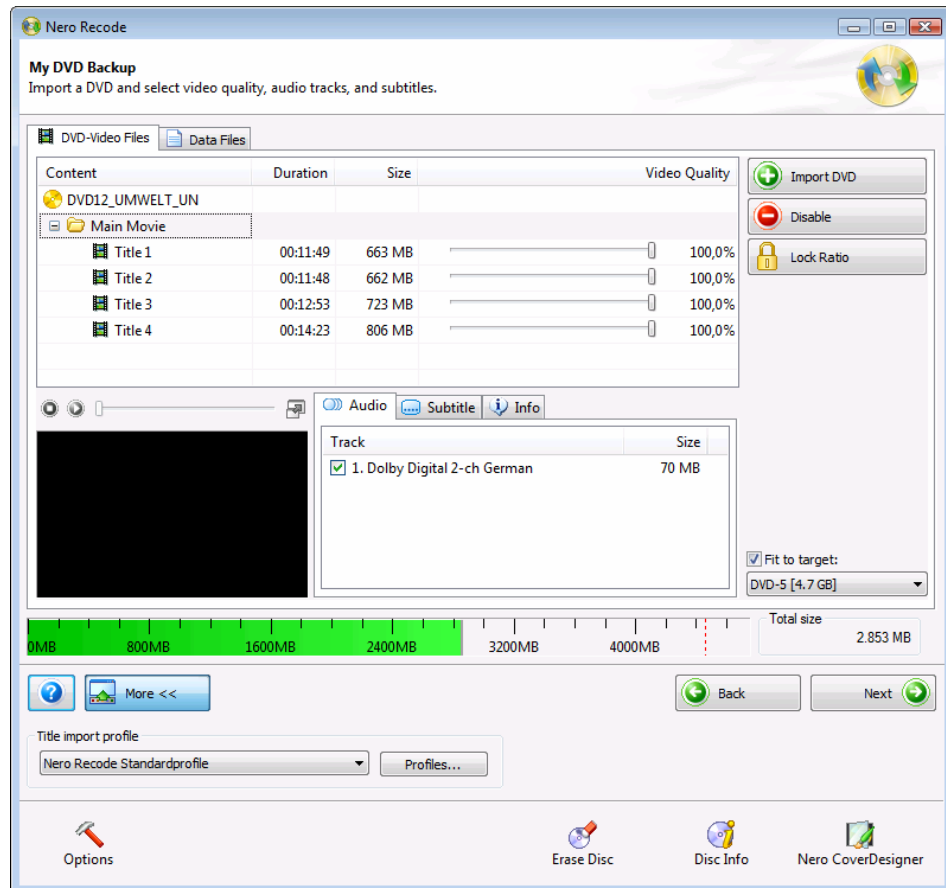


Fig. 4: Importing video titles in Nero Recode

The following input options are standard in the screen for importing files and are available in the context of every task:

Fit to target check box	This automatically recodes the content of the imported disc so that it fits onto the blank disc. The box is checked by default. If the box is not checked, the size of the copy can be defined irrespective of the limitation of a disc. Although it may not be possible to burn the resulting DVD structure onto a typical commercial blank disc, the DVD-Video title could certainly be played from the hard drive.
Fit to target drop-down menu	This shows the target medium. The capacity bar in the bottom part of the screen indicates the volume of data selected. This drop-down menu is active when the Fit to target box is checked.
Total size	Indicates how much space on the disc is used.

area	
Capacity bar area	Shows graphically how much space on the disc is used. Provided the bar is green, the entire content will fit on the disc. If a red bar appears, the volume of data is greater than the capacity of the disc.





5.2.1 DVD-Video Files/Nero Digital™ Titles tab

The following input options are contained as standard on the DVD-Video Files tab as well as the Nero Digital™ Titles tab and are available in the context of every task:

Import DVD button	This opens a dialog for importing the required file.
--------------------------	--

Preview area

The following input options are contained as standard on the DVD-Video Files tab as well as the Nero Digital™ Titles and are available in the context of every task:

	Ends playback.
	Starts playback.
	Skips to particular points.
	Enlarges the preview area.




Audio/Subtitle/Info tabs

Among other things, the **Audio/Subtitle/Info** tabs in the middle of the screen show the sound tracks present on the original DVD and the subtitles for the selected area. The audio and subtitle tracks have been imported in line with the profile selected during importing. The following tabs are available:

Audio tab	Displays the audio tracks imported in line with the import profile.
Subtitle tab	Displays the audio tracks imported in line with the import profile.
Info tab	Displays information about the imported video title.

5.2.2 Data Files tab

Data files can be burned onto the disc as well as the film. These files are imported using the **Data Files** tab. The following input options are available in the context of every task:

Add Files button	This opens a dialog for adding data files.
Delete button	This deletes a data file and is only active if at least one data file has been added.
	Displays the contents of higher folders and is only active when the user is located in a subfolder.
	Opens the dialog to create a folder in the data area of the disc.
	Opens a menu for changing the way in which the files are displayed in the folders.

5.2.3 Title import profile area

The **Title import profile** area allows you to switch to the **Nero Recode profile** window via the button **Profiles**. You can then create a new profile (see [Creating a new profile](#)).

The following input options are available in the **Nero Recode profile** window.

Current Profile drop-down menu	Indicates the current profile.
New button	Calls up a dialog box where a new profile can be created.
Delete button	Deletes the current profile displayed in the Current Profile drop-down menu.

The following tabs are available in the **Nero Recode profile** window:

Video tab

Quality distribution area	Defines the quality ratio between the main movie and the extras.
Menus area	Indicates whether the menus contained in the video file can be copied in original quality.

Audio tab

Preselect the following audio tracks check box	Defines whether the DVD is to contain audio tracks in specific languages only, or in all languages.
Add button	This opens a dialog box where audio tracks in different languages can be added. This button is only active if the Preselect the following audio tracks box has been checked.
Remove button	Deletes the highlighted audio tracks. This button is only active if at least one audio track has been highlighted in the overview of selected audio tracks.
From multiple tracks of the same language select drop-down menu	Specifies the audio format used if there are several audio tracks in the same language on the DVD.
Select all tracks if none meets my selection criteria check box	This selects all audio tracks if the tracks on the DVD are not to have any sound tracks with the set criteria.

Subtitle tab

Preselect the following subtitle tracks check box	Defines whether the DVD is to contain subtitles in specific languages only, or in all languages.
Add button	This opens a dialog box where subtitle tracks in different languages can be added. This button is only active if the Preselect the following subtitle tracks box has been checked.
Remove button	Deletes the highlighted subtitle tracks. This button is only active if at least one subtitle track has been highlighted in the overview

	of selected subtitle tracks.
Select all tracks if none meets my selection criteria check box	This selects all subtitle tracks if the tracks on the DVD are not to have any subtitles with the set criteria.

5.2.4 Creating a new profile

To create a new profile for the Nero Digital™ settings, proceed as follows:

1. Click the **New** button.
 - ➔ The **New Profile** dialog box opens.
2. Enter the name for the new profile.
3. Select the profile from which the settings are to be copied from the drop-down menu.
4. Click the **OK** button.
 - ➔ You have created a new profile. You can now continue to make more settings in expert mode.

5.3 Burn Settings screen

The screen for setting burn options changes depending on the task selected. The standard input options in this screen are explained below. The explanation of the input options displayed, which differ depending on the task selected, can be found in the description of the individual tasks.

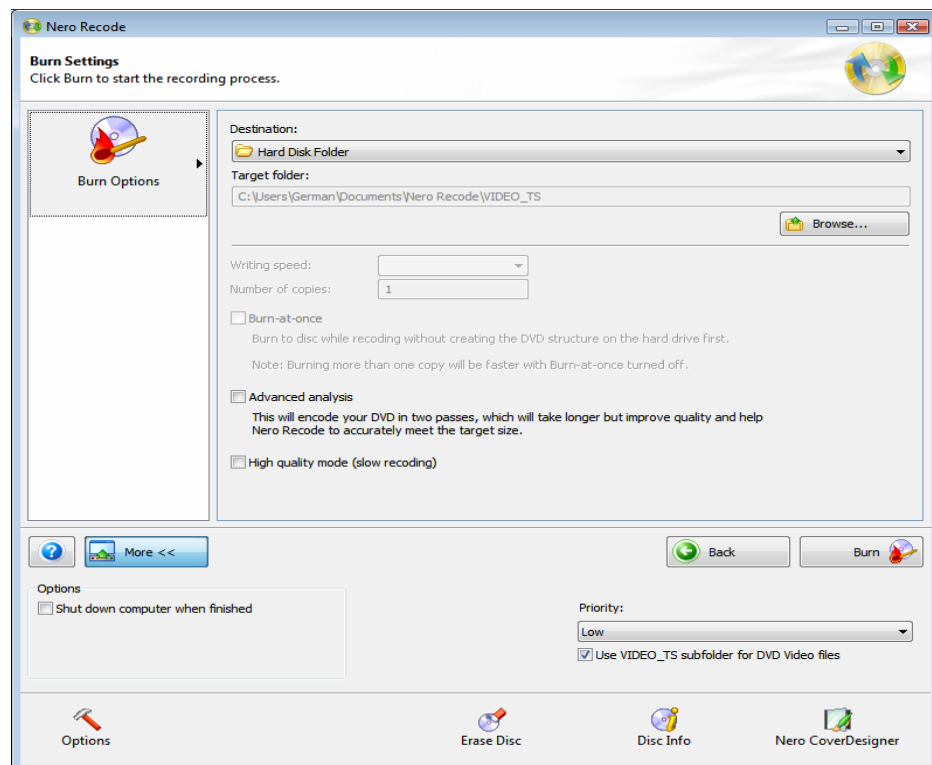


Fig. 5: Nero Recode burn settings

The following input options are standard in the **Burn Settings** screen and are available in the context of every task:

Destination drop-down menu	This specifies the destination for the compilation. You can use a CD/DVD recorder to burn the data, store the data on a hard drive or generate an image file.
Target folder text box	Specifies the target folder in which the compilation is stored and in which the temporary files created during burning are stored. These are automatically deleted after burning.
Browse button	Opens a window showing the computer's directory tree. The target folder where the compilation is to be stored or in which the temporary files are to be held during burning can be selected here. The path is automatically referenced in the Target folder text box. The temporary files are automatically deleted after burning.
Writing speed drop-down menu	Specifies the writing speed. This drop-down menu is only active if a CD/DVD recorder has been selected in the Destination drop-down menu.
Number of copies text box	Shows the number of copies to be burned. This text box is only active if a CD/DVD recorder has been selected in the Destination drop-down menu.
Burn button	Starts the burn process.

The following task-specific input options are also available:

Burn-at-once check box	If this box is unchecked, the DVD structure is saved on the hard drive before burning. Burning takes longer in this case. This method is faster if more than one copy is required because recoding only occurs once. This check box is only active if a CD/DVD recorder is selected in the Destination drop-down menu.
Advanced analysis check box	Dramatically improves the quality of the encoding process of a DVD. Recoding takes place in two steps and therefore takes longer.
High quality mode check box	Improves recoding quality. Recoding takes longer.

5.3.1 More

The extended window also offers the following additional setting options:

Shut down computer when finished check box	The computer automatically shuts down after burning is complete. This check box is only displayed in the Burn Settings screen.
DVD Book Type Settings combo box	Determines the specification of a DVD. Automatic: Automatically selects the most suitable book type for this DVD. DVD-ROM: Sets the book type to DVD-ROM. Select this setting if the DVD should play on multiple DVD players. Physical disc type: Selects the book type which is specified on the DVD. Current recorder settings: Leaves the book type setting to

	<p>the burner.</p> <p>This drop-down menu is only enabled if you have selected the CD/DVD drive of your computer as the target.</p>
<p>Priority drop-down menu</p>	<p>Defines how the resources available on the computer are to be used when burning the disc.</p>
<p>Use VIDEO_TS subfolder for DVD Video files check box</p>	<p>Creates a subfolder VIDEO_TS in your target folder in which the DVD-Video files are saved.</p>

5.4 Recoding and Burning screen

The **Recoding and Burning** screen changes depending on the task selected. The standard input options in this screen are explained below.

The explanation of the input options displayed, which differ depending on the task selected, can be found in the description of the individual tasks.

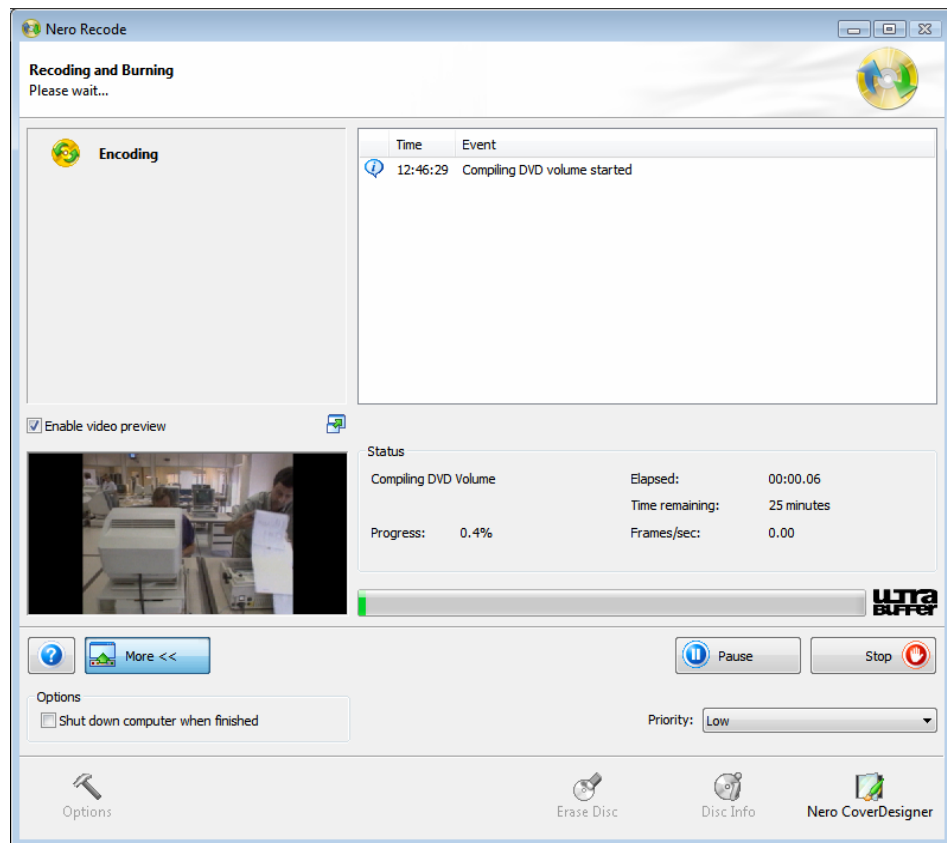



Fig. 6: Nero Recode burn process

The following input options are standard in the **Recoding and Burning** screen and are available in the context of every task:

<p>Enable video preview check box</p>	<p>Enables the video preview during burning.</p>
	<p>Enlarges and reduces the area of the video preview.</p>

Status area	Indicates the progress of the burn process.
Progress bar area	Shows the progress of the burn process in graphical form.
Pause button	Pauses the burn process.
Stop button	Stops the burn process.
Resume button	Resumes the burn process. This button is only displayed if the burn process has been paused using the Pause button.
Back button	Displays the previous screen.
More button	Displays the What do you want to do now? screen. There are various options here for performing further actions. This button is not enabled until burning is completed.

If you are recoding files for Nero Digital™, the following input option will be available.

Show Nero Digital™ compatible devices check box	This opens a browser window containing a list of devices that can reproduce the Nero Digital™ profile during the encoding process. This function requires a fully functional Internet connection.
--	---

6 Recoding an entire DVD to DVD

Nero Recode allows you to adapt and change the structure of a DVD while copying it so that the data can be burned onto a commercial blank disc.



Unless you possess the copyright yourself, or at least have the permission of the copyright holder, the unauthorized reproduction of discs may be a breach of national or international law and may lead to severe penalties!



A simple 1:1 copy of a DVD can be created best with Nero Express or Nero Burning ROM, in which case compression will not be performed. The burnable disc used must have as much free storage space as is indicated for the contents of the original DVD. For further details on using Nero Express or Nero Burning ROM see the relevant manuals and/or help files.

6.1 Task-specific input options

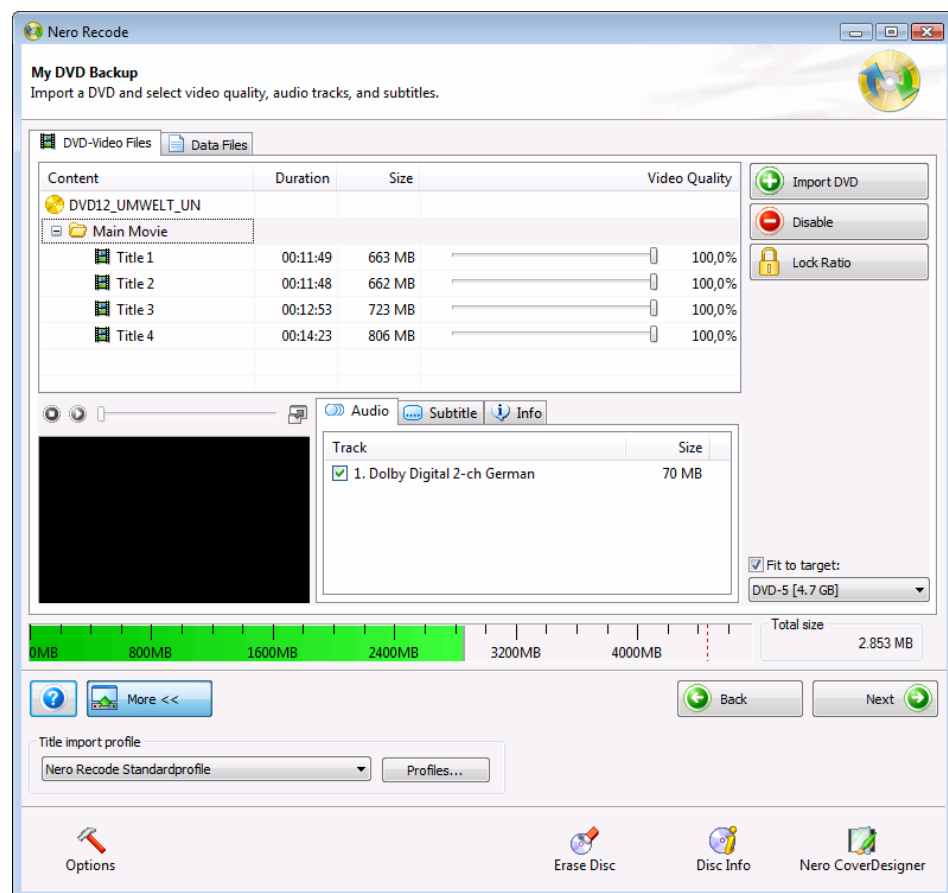





Fig. 7: My DVD Backup screen with DVD already imported

In addition to the input options described in the chapter **Import files screen** (see [Import Files screen](#)), the following buttons are available in the **My DVD Backup** screen for the **Recode an Entire DVD to DVD** task:

	Disable	Removes video titles contained in the original. These titles are then not transferred when burning the copy.
--	----------------	--

	The button is only active if a DVD-Video title has been imported.
 Enable	Enables video titles that were previously disabled. These titles are then transferred when burning the copy. This button is only active if a DVD-Video title already imported has been disabled.
 Lock Ratio	Locks the automatic change of recoding quality for a DVD-Video title. It is still possible to make manual changes to the quality settings by moving the slider. It may make sense to lock individual video titles if the quality of other content is to be improved, necessitating a proportionate deterioration in the rest of the content. This button is only active if a DVD-Video title has been imported.
 Unlock Ratio	Removes the lock on the automatic change of recoding quality. This button is only active if a DVD-Video title has been imported.

The following information is listed in the columns in the upper section of the **DVD-Video Files** tab.

Content	Shows the structure contained on the DVD.
Duration	Shows the length of the relevant area.
Size	Shows the size of the relevant area.
Video Quality	Shows the quality. The higher the number, the better the quality of the file recoded with Nero Recode.

6.2 Recoding

To recode a DVD, proceed as follows:

1. Start Nero Recode (see [Launching Nero Recode via Nero StartSmart](#)).
2. Select the **Recode an Entire DVD to DVD** task in the **Nero Recode** start screen.
 - The **My DVD Backup** screen appears.
3. Insert the DVD you want to recode in the DVD drive on your PC.
4. Check the **Fit to target** box as required.
 - The contents of the source DVD are then recoded to fit the target format selected in the drop-down menu **Fit to target**.




If the **Fit to target** box is not checked, the DVD-Video is imported in its original size. In this case the volume of data can be so great that it can only be burned onto a double-layer DVD or saved on the hard drive.

5. Select the required import profile in the **Title import profile** area (see [Title import profile area](#)).
6. Click the **Import DVD** button.
 - The **Find Folder** dialog box opens.
7. Select the drive or hard drive folder containing the DVD that you want to recode and click the **OK** button.
 - You have imported the DVD. The capacity bar at the bottom of the screen shows how much memory the imported DVD files use. If the source DVD is larger than the target medium, the central area of

the **DVD-Video Files** tab shows how the DVD will be recoded in line with the selected profile.

8. Select the audio tracks you want to copy on the **Audio** tab.
9. Select the subtitle tracks you want to copy on the **Subtitle** tab.
10. If there is an individual video title you do not want to copy:
 1. Select the required video title on the **DVD-Video Files** tab.
 2. Click on the **Disable** button.
 - The **Disable item** dialog box appears.
 3. Select the required deletion method in the dialog box and confirm this with **OK**.
 - The video title is disabled.
11. If you want to re-enable an already disabled video title for copying purposes:
 1. Select the disabled video title on the **DVD-Video Files** tab.
 2. Click the **Enable** button.
 - The video title is enabled again and can be copied.
12. If you want to lock an individual video title to protect it from loss of quality when recoding:
 1. Select the video title you want to lock.
 2. Click the **Lock Ratio** button.
 - The selected video title is locked.
13. If you want to unlock an already locked video title to adjust the quality proportionately to the changes in quality in the other titles:
 1. Select the video title you want to unlock.
 2. Click the **Unlock Ratio** button.
 - The selected video title is unlocked.
14. Move the slider for an area in the **Video Quality** column until the required video title quality is reached.



The quality of the rest of the content of the DVD will deteriorate proportionately to the improvement in the quality of an individual video title. The sliders in the **Video Quality** area are enabled only when the **Fit to target** check box is deactivated.
15. Click the **Next** button to define the burn settings.
 - The **Burn Settings** screen appears.
16. Make the required burn settings for the burn process (see [Burn Settings screen](#)).
17. Click the **Burn** button to start the burn process.
 - Burning begins.
The **Recoding and Burning** screen is displayed and you can follow progress of the burn process on the progress bar.
18. To cancel burning, click the **Stop** button. To pause/resume burning, click the **Pause/Resume** button.

19. If you have chosen the CD/DVD drive of your computer as the target of the compilation, you will be prompted to insert an empty writable disc in the drive.
 - ➔ The burn process is complete when the relevant message appears in the information window.
You can now return to the burn settings and burn the compilation again. The **Next** button takes you to the **What do you want to do now?** screen, where you can select the other options or close Nero Recode.

7 Recoding a main movie to DVD

Nero Recode allows you to copy the main movie on a DVD without the extras. You can adapt and change the structure of the main movie so that the data can be burned onto a commercial blank disc.



Unless you possess the copyright yourself, or at least have the permission of the copyright holder, the unauthorized reproduction of discs may be a breach of national or international law and may lead to severe penalties!



A simple 1:1 copy of a DVD can be created best with Nero Express or Nero Burning ROM, in which case compression will not be performed. The burnable disc used must have as much free storage space as is indicated for the contents of the original DVD. For further details on using Nero Express or Nero Burning ROM see the relevant manuals and/or help files.

7.1 Task-specific input options

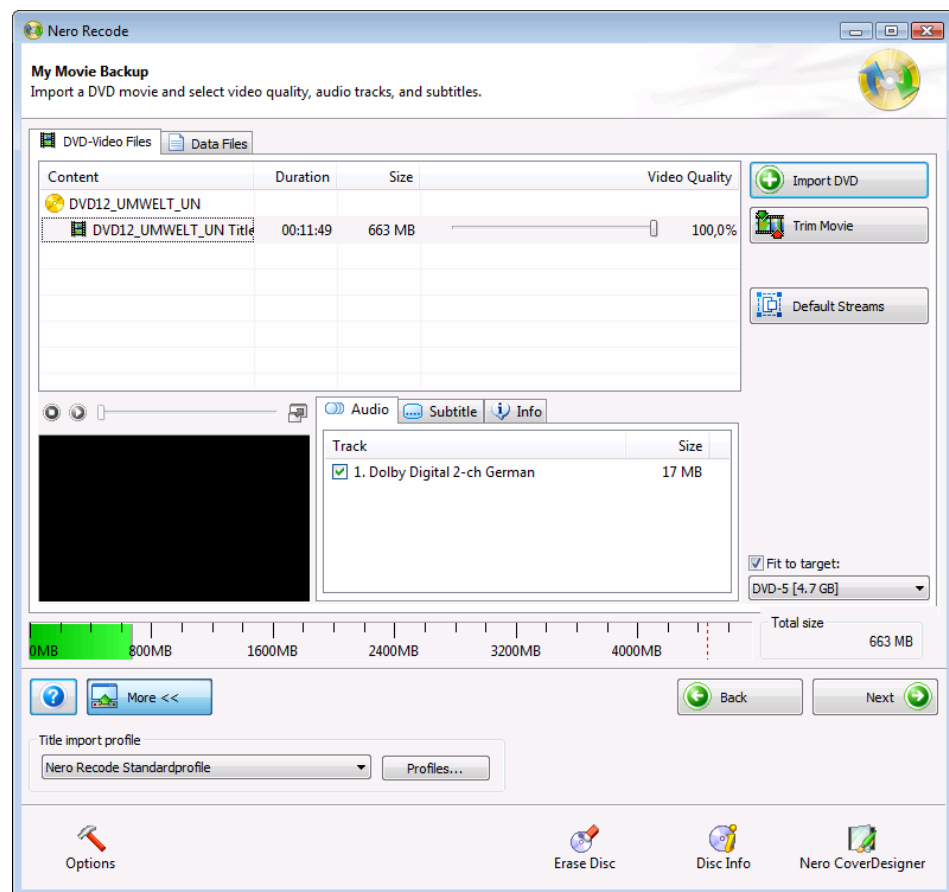



Fig. 8: My Movie Backup screen with main movie already imported

In addition to the input options described in the chapter [Import Files screen](#), the following buttons are available in the **My Movie Backup** screen for the **Recode Main Movie to DVD** task:

Trim Movie	Opens a window where the selected video title can be trimmed. The button is only enabled if a DVD-Video title has
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	been imported (see Trimming titles).
 Default Streams	Opens a window in which the streams for audio and subpicture can be selected. The button is only enabled if a DVD-Video title has been imported (see Default Streams).

The following information is listed in the columns in the upper section of the **DVD-Video Files** tab.

Content	Shows the structure contained on the DVD.
Duration	Shows the length of the relevant area.
Size	Shows the size of the relevant area.
Video Quality	Shows the quality. The higher the number, the better the quality of the file recoded with Nero Recode.

7.2 Recoding

To recode a DVD, proceed as follows:


1. Start Nero Recode (see [Launching Nero Recode via Nero StartSmart](#)).
2. Select the **Recode Main Movie to DVD** task in the Nero Recode start screen.
 - The **My Movie Backup** screen is displayed.
3. Insert the DVD you want to recode in the DVD drive on your PC.
4. Check the **Fit to target** box.
 - The contents of the source DVD are then recoded to fit the target format selected in the drop-down menu **Fit to target**.



If the **Fit to target** box is not checked, the DVD-Video is imported in its original size. In this case the volume of data can be so great that it can only be burned onto a double-layer DVD or saved on the hard drive.

5. Select the required import profile in the **Title import profile** area (see [Title import profile area](#)).
6. Click the **Import DVD** button.
 - The **Find Folder** dialog box opens.
7. Select the drive or hard drive folder containing the DVD that you want to recode and click the **OK** button.
 - You have imported the main movie on the DVD. The capacity bar at the bottom of the screen shows how much memory the imported DVD files use. If the source DVD is larger than the target medium, the central area of the **DVD-Video Files** tab shows how the DVD will be recoded in line with the selected profile.
8. Select the audio tracks you want to copy on the **Audio** tab.
9. Select the subtitle tracks you want to copy on the **Subtitle** tab.
10. If you want to trim a video title:
 1. Select the video title on the **DVD-Video Files** tab.

2. Click the **Trim Movie** button.
 - The **Trim Movie** window opens.
 3. Trim the video title by defining the start and end frame (see [Trimming titles](#)).
 4. Click the **OK** button.
 - You have trimmed the video title.
11. If you wish to configure the default streams:
 1. Select the video title on the **DVD-Video Files** tab.
 2. Click the **Default streams** button.
 - The **Default streams** window opens.
 3. Configure the default streams by defining the desired settings (see [Default Streams](#)).
 4. Click the **OK** button.
 - The default streams are configured.
 12. Move the slider for an area in the **Video Quality** column until the required video title quality is reached.



The quality of the rest of the content of the DVD will deteriorate proportionately to the improvement in the quality of an individual title. The sliders in the **Video quality** area work only when the **Fit to target** check box is deactivated.
 13. Click the **Next** button to define the burn settings.
 - The **Burn Settings** screen appears.
 14. Make the required settings for the burn process (see [Burn Settings screen](#)).
 15. Click the **Burn** button to start the burn process.
 - The burn process is started.
The **Recoding and Burning** screen is displayed and you can follow the progress of the burn process on the progress bar.
 16. To cancel burning, click the **Stop** button. To pause/resume burning, click the **Pause/Resume** button.
 17. If you have chosen the CD/DVD drive of your computer as the target of the compilation, you will be prompted to insert an empty writable disc in the drive.
 - The burn process is complete when the relevant message appears in the information window.
You can now return to the burn settings and burn the compilation again. The **Next** button takes you to the **What do you want to do now?** screen, where you can select the other options or close Nero Recode.

7.2.1 Trimming titles

If you do not want to use the whole of a video title in the imported main movie, you can just use a specific clip by trimming the video title.

The **Trim Movie** window where video titles can be trimmed is divided into two areas, the first showing the start frame where the video title is to begin and the second showing the end frame where the video title is to end.

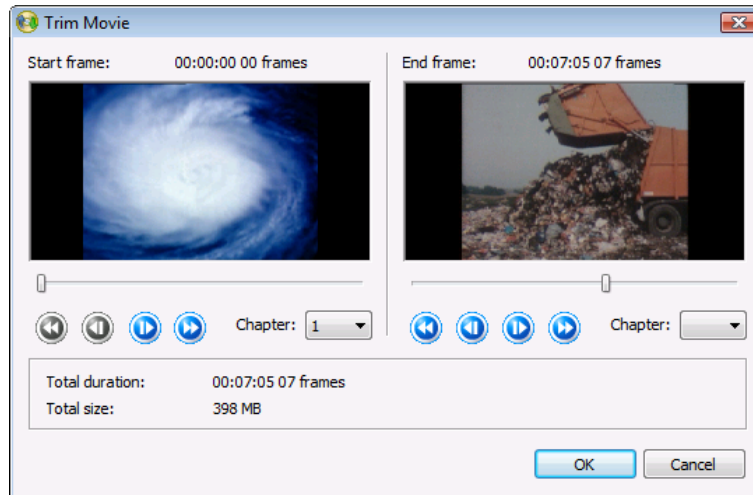




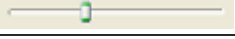



Fig. 9: **Trim Movie** window

The following input options are available in the **Trim Movie** window:

	Skips forwards a few frames.
	Skips forwards 6 seconds.
	Skips 6 seconds back.
	Skips a few frames back.
	Manually regulates determination of the desired frames.
	Selects the chapter markers of the video title directly. This is only possible if the video title contains chapter markers.
Start frame specification	Indicates the start frame of the video title.
End frame specification	Indicates the end frame of the video title.
Total duration specification	Indicates the length of the video title.
Total size specification	Indicates the overall size of the video title.

7.2.2 Default Streams

In the **Default Streams** window you can define the settings for audio and subpicture streams.

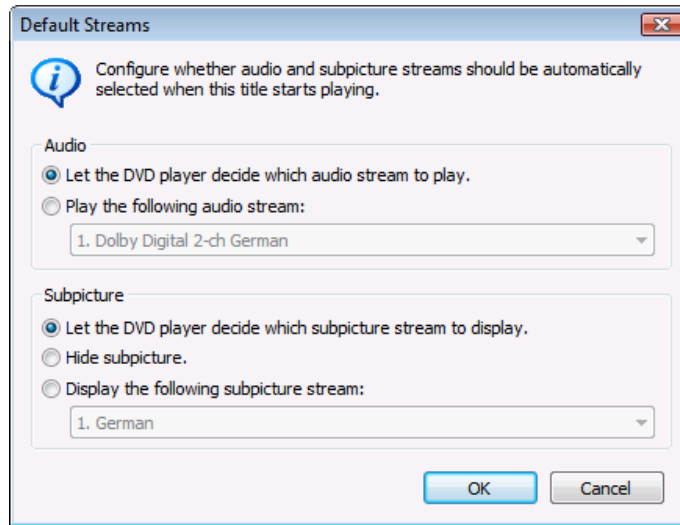


Fig. 10: **Default-Streams** window

The following input options are available:

Audio section

Let the DVD player decide which audio stream to play radio button	Allows the DVD player to choose which audio stream to play. Selection occurs automatically when title playback begins.
Play the following audio stream drop-down menu	Selects the audio stream to be played when a title is played back, e.g. in a DVD player.

Subpicture area

Let the DVD player decide which subpicture stream to display radio button	Allows the DVD player to choose which subpicture stream is to be played. Selection occurs automatically when title playback starts.
Hide subpicture radio button	Fades out the subpicture stream. No subpicture is displayed during title playback, e.g. in a DVD player.
Display the following subpicture stream drop-down menu	Selects the subpicture stream to be played during title playback, e.g. in a DVD player.

8 Compiling a DVD

Nero Recode allows you to compile your own DVDs from imported video titles and data files.

8.1 Task-specific input options

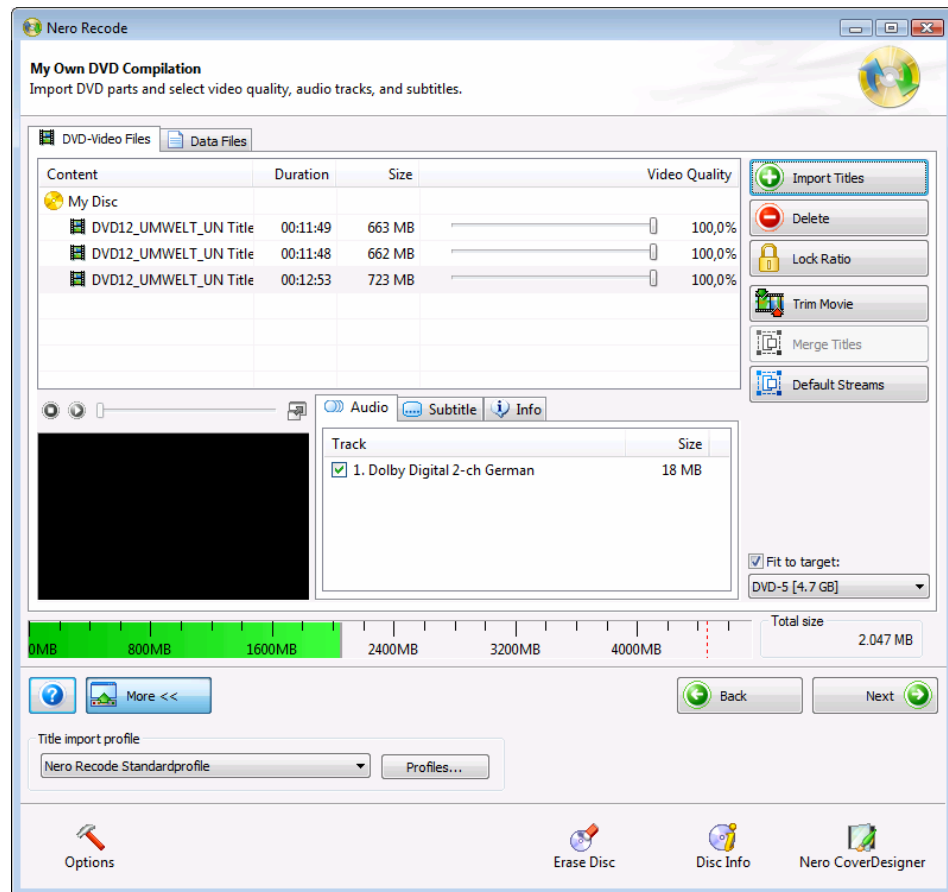









Fig. 11: **My Own DVD Compilation** screen with files already imported

In addition to the input options described in the chapter [Import Files screen](#), the following buttons are available in the **My Own DVD Compilation** screen for the **Compile a DVD** task:

 Delete	Removes video titles. This button is only active if a DVD-Video title has been imported.
 Lock Ratio	Locks the automatic change of recoding quality for a DVD-Video title. It is still possible to make manual changes to the quality settings by moving the slider. This button is only active if a DVD-Video title has been imported.
 Unlock Ratio	Removes the lock on the automatic change of recoding quality. This button is only active if a DVD-Video title has been imported.
 Trim Movie	Opens the Trim Movie window, where the selected video title can be trimmed. The button is only active if a DVD-Video title has been imported (see Trimming titles).
 Merge Titles	Merges selected video titles. This button is only active if at

	least two DVD-Video titles have been selected.
 Split Titles	Splits merged video titles. This button is only active if at least two DVD-Video titles have been merged to produce a single title.
 Default Streams	Opens a window in which the streams for audio and subpicture can be selected. The button is only enabled if a DVD-Video title has been imported (see Default Streams).

The following information is listed in the columns in the upper section of the **DVD-Video Files** tab.

Content	Shows the structure contained on the DVD.
Duration	Shows the length of the relevant area.
Size	Shows the size of the relevant area.
Video Quality	Shows the quality. The higher the number, the better the quality of the file recoded with Nero Recode.

8.2 Recoding

To recode a DVD, proceed as follows:

1. Start Nero Recode (see [Launching Nero Recode via Nero StartSmart](#)).
2. Select the **Compile a DVD** task in the Nero Recode start screen.
 - The **My Own DVD Compilation** screen is displayed.
3. Insert the DVD you want to recode in the DVD drive on your PC.
4. Check the **Fit to target** box.
 - The contents of the source DVD are then recoded to fit the target format selected in the drop-down menu **Fit to target**.



If the **Fit to target** box is not checked, the DVD-Video is imported in its original size. In this case the volume of data can be so great that it can only be burned onto a double-layer DVD or saved on the hard drive.

5. Select the required import profile in the **Title import profile** area (see [Title import profile area](#)).
6. Click the **Import Titles** button.
 - The **Import Titles** dialog box opens.
7. Select the video titles that you want to recode and click the **Add titles** button.
 - You have imported the selected video titles.
The capacity bar at the bottom of the screen shows how much memory the imported files use. If the file volume is greater than the target medium, the central area of the **DVD-Video Files** tab shows how the files will be recoded in line with the selected profile.
8. Select the audio tracks you want to copy on the **Audio** tab.
9. Select the subtitle tracks you want to copy on the **Subtitle** tab.

10. If you want to delete a video title:
 1. Select the video title you want on the **DVD-Video Files** tab.
 2. Click on the **Delete** button.
 - The video title is removed from the compilation.

11. If you want to lock an individual video title to protect it from loss of quality when recoding:
 1. Select the video title on the **DVD-Video Files** tab.
 2. Click the **Lock Ratio** button.
 - The selected video title is locked.

12. If you want to unlock an already locked video title to adjust the quality proportionately to the changes in quality in the other titles:
 1. Select the video title on the **DVD-Video Files** tab.
 2. Click the **Unlock Ratio** button.
 - The selected video title is unlocked.

13. If you want to trim a video title:
 1. Select the video title on the **DVD-Video Files** tab.
 2. Click the **Trim Movie** button.
 - The **Trim Movie** window opens.
 3. Trim the video title by defining the start and end frames (see [Trimming titles](#)).
 4. Click the **OK** button.

14. If you want to merge several video titles:
 1. Select at least two video titles on the **DVD-Video Files** tab with the aid of the CTRL key.
 2. Click the **Merge Titles** button.
 - The merged video titles are grouped together in a new folder named **Merged Titles**.



Video titles can only be merged if they all have the same audio track.

15. If you wish to separate merged video titles:
 1. Select the **Merged Titles** folder on the **DVD-Video Files** tab.
 2. Click the **Split Titles** button.
 - The merged video titles are shown separately again.

16. If you wish to configure the default streams:
 1. Select the video title on the **DVD-Video Files** tab.
 2. Click the **Default streams** button.
 - The **Default streams** window opens.
 3. Configure the default streams by defining the desired settings (see [Default Streams](#)).
 4. Click the **OK** button.
 - The default streams are configured.

17. Move the slider for an area in the **Video Quality** column until the required video title quality is reached.



The quality of the rest of the content of the DVD will deteriorate proportionately to the improvement in the quality of an individual video title. The slider in the **Video quality area** works only when the **Fit to target** check box is disabled.

18. Click the **Next** button to define the burn settings.
 - The **Burn Settings** screen appears.
19. Make the required settings for the burn process (see [Burn Settings screen](#)).
20. Click the **Burn** button to start the burn process.
 - The burn process is started. The **Recoding and Burning** screen is displayed and you can follow the progress of the burn process on the progress bar.
21. To cancel burning, click the **Stop** button. To pause/resume burning, click the **Pause/Resume** button.
22. If you have chosen the CD/DVD drive of your computer as the target of the compilation, you will be prompted to insert an empty writable disc in the drive.
 - The burn process is complete when the relevant message appears in the information window. You can now return to the burn settings and burn the compilation again. The **Next** button takes you to the **What do you want to do now?** screen, where you can select the other options or close Nero Recode.

9 Recoding DVDs and Videos to Nero Digital™

Nero Recode allows you to encode all video formats supported by Nero in Nero Digital™ files. The Nero Digital™ codec is MPEG-4-compatible. These files can be played back in Nero ShowTime and other commonly available programs.

9.1 Task-specific input options

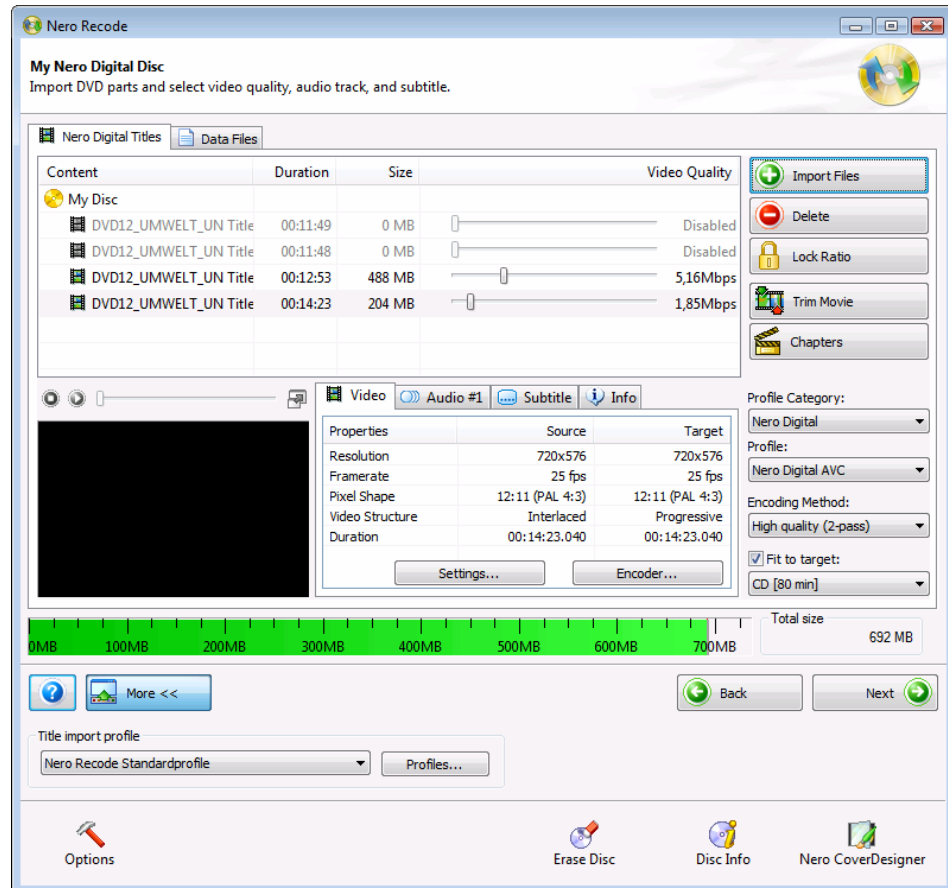







Fig. 12: My Nero Digital™ Disc screen with files already imported

In addition to the input options described in the chapter [Import Files screen](#), the following input options are available in the **My Nero Digital™ Disc** screen for the **Recode DVDs and Videos to Nero Digital™** task:

 Delete	Removes video titles. This button is only active if a DVD-Video title has been imported.
 Lock Ratio	Locks the automatic change of recoding quality for a DVD-Video title. It is still possible to make manual changes to the quality settings by moving the slider. This button is only active if a DVD-Video title has been imported.
 Unlock Ratio	Removes the lock on the automatic change of recoding quality. This button is only active if a DVD-Video title has been imported.
 Trim Movie	Opens a window where the selected video title can be trimmed. This button is only active if a DVD-Video title has

	been imported.
 Chapters	Opens a window where chapter markers can be set (see Setting chapter markers). This button is only enabled if a DVD-Video title has been imported and selected.
Nero Digital™ Category	Changes the Nero Digital™ category . The setting relates to the target medium for which encoding is being carried out. The size of the result varies, depending on the selection.
Nero Digital™ Profile	Changes the Nero Digital™ profile . The setting relates to the target medium for which encoding is being carried out.
Encoding Method	Selects the method to be used to encode the MPEG-4 file. With Fast (1-pass) , Nero Recode performs one conversion step. This method requires less time, but the resulting quality is less than encoding in two steps. Nero Recode performs two conversion steps with High Quality (2-pass) . The quality is better, but the process takes longer.

The following information is listed in the columns in the upper section of the **Nero Digital™ Titles** tab.

Content	Shows the structure contained on the DVD.
Duration	Shows the length of the relevant area.
Size	Shows the size of the relevant area.
Video Quality	Shows the quality. The higher the number, the better the quality of the file recoded with Nero Recode.

9.2 Recoding

To recode a DVD or video to Nero Digital™, proceed as follows:

1. Start Nero Recode (see [Launching Nero Recode via Nero StartSmart](#)).
2. Select the **Recode DVDs and Videos to Nero Digital™** task in the **Nero Recode** start screen.
 - ➔ The **My Nero Digital™ Disc** screen appears.
3. Insert the DVD you want to recode in the DVD drive on your PC.
4. Check the **Fit to target** box.
 - ➔ The contents of the source DVD are then recoded to fit the target format selected in the drop-down menu **Fit to target**.



If the **Fit to target** box is not checked, the DVD-Video is imported in its original size. In this case the volume of data can be so great that it can only be burned onto a double-layer DVD or saved on the hard drive.

5. Select the required import profile in the **Title import profile** area (see [Title import profile area](#)).
6. Click the **Import Files** button.
 - ➔ The **Import Titles** dialog box opens.

7. Select the drive or hard drive folder containing the DVD or the individual video titles that you want to recode and click the **Add title** button.
 - You have imported the selected video titles.
The capacity bar at the bottom of the screen shows how much memory the imported files use. If the imported files are larger than the target medium, the central area of the **DVD-Video Files** tab shows how the files will be recoded in line with the selected profile.
8. If you would like to change the video settings, click the **Settings** button on the **Video** tab (see [Defining video settings](#)).
If you would like to change the encoding settings, click the **Encoder** button on the **Video** tab (see [Defining Encoder Settings](#)).
9. Select the audio tracks in Dolby Digital format that you want to copy on the **Audio #1** and **#2** tabs and specify the format to which the audio files are to be converted.
10. If you want to change the audio settings, click the **Settings** button (see [Defining audio settings](#)).
11. Select the subtitle tracks you want to copy on the **Subtitle** tab.
12. Create your own subtitle track as required (see [Creating your own subtitle track](#)).
13. If you want to delete a video title:
 1. Select the video title you want to delete on the **Nero Digital Titles** tab.
 2. Click on the **Delete** button.
 - The video title is removed from the compilation.
14. If you want to lock an individual video title to protect it from loss of quality during recoding:
 1. Select the video title you want to lock on the **Nero Digital™ Titles** tab.
 2. Click the **Lock Ratio** button.
 - The selected video title is locked.
15. If you want to unlock an already locked video title to adjust the quality proportionately to the changes in quality in the other titles:
 1. Select the video title you want to unlock on the **Nero Digital™ Titles** tab.
 2. Click the **Unlock Ratio** button.
 - The selected video title is unlocked.
16. If you want to trim a video title:
 1. Select the video title you want to trim on the **Nero Digital™ Titles** tab.
 2. Click the **Trim Movie** button.
 - The **Trim Movie** window opens.
 3. Trim the video title by defining the start and end frames (see [Trimming titles](#)).
 4. Confirm your selection by clicking the **OK** button.
 - The video title is trimmed.
17. If you want to add additional chapters to individual video titles:
 1. Select the video title to which you want to add additional chapters on the **Nero Digital™ Titles** tab.
 - The **Chapter** window opens.

2. Add more chapters to the video title (see [Setting chapter markers](#)).
3. Click the **OK** button.
 - The video title now contains new chapters.

18. Select the required Nero Digital™ category in the **Nero Digital™ category** drop-down menu.
19. Select the required Nero Digital™ profile in the **Nero Digital™ profile** drop-down menu.
20. Select the desired encoding method in the **Encoding method** drop-down menu.
21. Move the slider for an area in the **Video Quality** column until the required video title quality is reached.



The quality of the rest of the content of the DVD will deteriorate proportionately to the improvement in the quality of an individual video title. The slider in the **Video quality area** works only when the **Fit to target** check box is disabled.

22. Click the **Next** button to define the burn settings.
 - The **Burn Settings** screen appears.
23. Make the required settings for the burn process (see [Burn Settings screen](#)).
24. Click the **Burn** button to start the burn process.
 - The burn process starts. The **Recoding and Burning** screen is displayed and you can follow the progress of the burn process on the progress bar.
25. To cancel burning, click the **Stop** button. To pause/resume burning, click the **Pause/Resume** button.
26. If you have chosen the CD/DVD drive of your computer as the target of the compilation, you will be prompted to insert an empty writable disc in the drive.
 - The burn process is complete when the relevant message appears in the information window. You can now return to the burn settings and burn the compilation again. The **Next** button takes you to the **What do you want to do now?** screen, where you can select the other options or close Nero Recode.

9.2.1 Defining video settings

The following information is listed in the columns on the **Video** tab:

Property	Shows the properties saved on the DVD, e.g. resolution, frames per second, pixel shape and video structure.
Source	Shows the original size.
Target	Shows the target sizes depending on the selected Nero Digital™ profile.

Click the **Settings** button to go to the **Nero Digital™ Video settings** window. In this window you can determine how the video is to be processed.

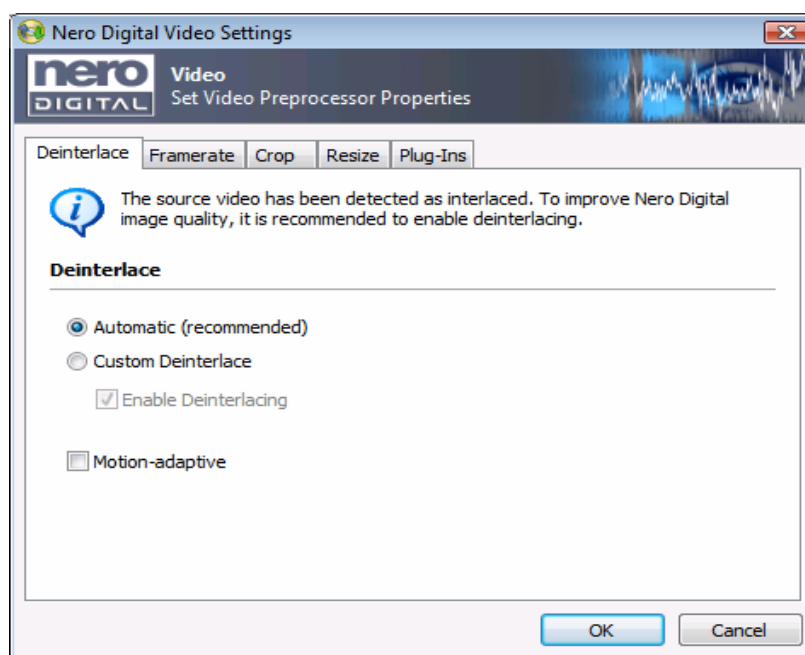


Fig. 13: Nero Digital™ settings window

9.2.1.1 Deinterlace tab

The following input options are available:

Deinterlace area:

Automatic (recommended) radio button	Automatically selects whether or not the video title should be encoded with deinterlace.
User-defined deinterlace radio button	Activates the Enable deinterlacing check box.
Enable deinterlacing check box	Enables deinterlacing for the current video title and the Motion-adaptive (slower, but higher quality) check box.
Motion-adaptive (slower, but higher quality) check box	Enables Motion-adaptive , allowing a better video quality to be achieved. Even quick motion sequences are extremely sharp and detailed with motion-adaptive. However, the burning process is slower.



The interlacing process, which is used to display a TV picture in PAL standard, displays two half frames in succession. As the frame is generated, only the odd lines from the output device are displayed for the first half frame and, once this is complete, the second half frame is generated from the even lines. The two frames are encoded separately. The relatively high refresh frequency means that the eye picks this up as a single frame. Modern screens (e.g. LCD, Plasma, DLP) can only reproduce the interlacing process with a restricted image quality. For this reason, the half frames of videos can be converted into full frames in the Nero Digital™ video settings.

9.2.1.2 Frames per second tab

Determines the rate for the selected Nero Digital™ file. Nero Recode uses the source frame rate as the default when the selected Nero Digital™ profile permits.

The following input options are available:

Frames per second area:

Automatic (recommended) radio button	Automatically selects how many frames per minute to show.
User-defined rate radio button	Enables the Target rate drop-down menu.
Target rate drop-down menu	Selects how many frames per second to show.
Motion-adaptive conversion (slower, but higher quality) check box	Enables Motion-adaptive conversion , which achieves a higher video quality. Even quick motion sequences are extremely sharp and detailed with motion-adaptive conversion. However, burning is slower.

9.2.1.3 Crop tab

If the DVD-Video has black borders at the sides, these can be cut off (cropped) automatically. This reduces the size of the video and thereby improves its quality. Nero Recode recognizes these borders automatically and edits them out as standard.

The following input options are available:

Crop area:

Automatic (recommended) radio button	Detects black borders and edits these out. Default setting.
Custom Crop option button	Enables the four text boxes for cropping (top, bottom, right, left) and the Adjust button.
Adjust button	Opens a dialog box and displays a frame from the video. You can use the mouse to define the four cropping areas (top, bottom, left, right) by hand. The button is only enabled if the Custom Crop option is selected.
Disable option button	Allows the video to be converted without cropping the borders.

9.2.1.4 Resolution tab

Selecting a **Nero Digital™ profile** for converting the DVD-Video title to MPEG-4 format defines by default the size of the frame to be generated.

The following input options are available:

Resolution area

Automatic (recommended) radio button	Automatically adjusts the frame size to the Nero Digital™ profile so that the frame size generated matches the output medium.
Custom resize option button	Activates the two text boxes for the page format (width and height). The values to be entered must be multiples of 16 and must be in the range 16 to 720 pixels for width and 16 to 576

	pixels for height.
Disable option button	Allows the video to be converted without changing the frame size.
Square pixel / letter-boxing check box	Creates a Nero Digital™ file consisting of square pixels. This makes the file more compatible with some players. However, black bars may appear in the video file.
Resizing method drop-down menu	Selects the desired resizing method, e.g. bilinear, bicubic and Lanczos.

9.2.1.5 Plug-ins tab

You can access the **Nero Digital™ Video Plug-ins properties** window via the **Plug-ins** button. Plug-ins can be added and configured here.



A plug-in is a small extra program that adds features to a higher-order program.

The following input options are available:

Installed plug-ins selection list	Displays the installed plug-ins.
Selected plug-ins selection list	Displays the selected plug-ins.
Add button	Adds installed plug-ins to the Selected plug-ins selection list.
Remove button	Removes plug-ins from the Selected plug-ins selection list.
Upward/downward button	Sorts the items in the Selected plug-ins selection list.
Options button	Opens the Plug-in editor window, where you can define settings for the respective plug-ins. The possible settings are a factor of the selected plug-in.
OK button	Saves the changes in the Nero Digital™ Video plug-in properties dialog box.
Cancel button	Discards the changes in the Nero Digital™ Video plug-in properties dialog box.
Accept button	Accepts the changes in the Nero Digital™ Video plug-in properties dialog box.



The plug-ins **Color Correction** and **Denoise** are included standard in Nero Recode. You can adjust brightness, contrast and saturation of your video files with sliders in the **Color Correction** plug-in. Noise interference can be removed from video files with the sliders in the **Denoise** plug-in.

9.2.2 Defining Encoder Settings

Click the **Encoder** button to open the **Properties of Nero Digital™ Video** window. You can adjust the AVC encoding settings of your data here.

The following input options are available:

Load settings button	Loads existing encoder settings.
Save settings button	Saves newly created encoder settings.

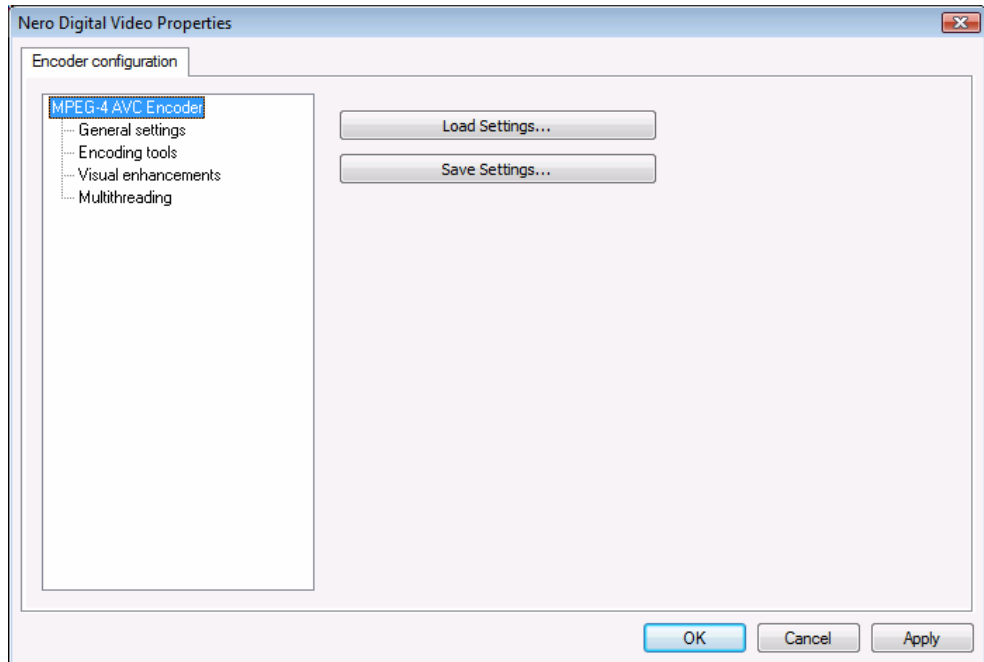


Fig. 14: Properties of Nero Digital™ Video window

9.2.2.1 General settings

Under **General settings**, you can adjust the **Decision quality** and the **Properties for video sequences**.

The following input options are available:

Decision quality area

Decision quality slider	Specifies the quality of the output file in relation to the time expended. High quality offers the best quality with the longest encoding period. High speed requires the shortest encoding time but offers the poorest quality. It is advisable to choose a middle value in the Best range.
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Properties for video sequences area

Maximum reference frames input field	Specifies how many frames from which a P-frame or B-frame may query information.
Maximum keyframe interval input field	Defines the range for the size of the GOP.

9.2.2.2 Encoding Tools

You can define settings for the encoding process under **Encoding tools**.

The following input options are available:

Baseline profile area

Deblocking check box	Operates like a soft focus on the sharp edges of the macroblocks. You can use the slider Deblocking strength to change the intensity of this effect.
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Main profile area

Bidirectional prediction check box	Enables encoding with the aid of B-VOPs.
Maximum consecutive B-frames input field	Specifies the maximum number of B-frames that can be used in a GOP. This input field is enabled only when the Bidirectional prediction check box is enabled.
CABAC check box	Enables CABAC (Context Adaptive Binary Arithmetic Coding). Refers to a process for arithmetically encoding digital video files as part of encoding standard MPEG-4 AVC or H264.
Weighted prediction check box	Allows reference frames to be weighted for motion prediction. This increases encoding efficiency, particularly in the case of cross-fading.
Interlaced encoding check box	Enables original interlaced-encoded material to be saved as interlaced again. This setting is possible only when the video title is interlaced.

High profile area

8x8 transform check box	Changes the standard 4x4 transformation of the encoder to an 8x8 transformation. With high definition resolutions, this allows better compression. This setting is a factor of the Nero Digital™ profile selected.
-----------------------------------	---

9.2.2.3 Visual Enhancement

The settings under **Psychovisual improvement** use human perception patterns to achieve better overall quality.

This means, for example, that the quality is better in the middle of the picture than at the outer edges because the eyes tend to focus on the middle and do not notice slight blurring at the edge. Because quality is "saved" at the edge, you can either improve overall quality or achieve greater compression.

This means that you can achieve greater compression without any appreciable loss of quality.

The following input options are available:

Psychovisual enhancement area

Focal plane	Takes into account human perception so as to achieve better
--------------------	---

check box	compression for individual images at particular points in the video.
Macroblock level check box	Takes into account the human perception so as to achieve better compression for macroblocks in particular areas of the picture.

9.2.2.4 Encoding method options

Under **Encoding method options** you can define settings for quantization and bit rate.

The following input options are available:

Encoding method options area

Automatically select maximum bit rate check box	Automatically sets the bit rate. The bit rate is the data transmission speed. It is stated as bit/s or bps.
Maximum bit rate input field	Specifies the bit rate. Enabled only when the Automatically select maximum bit rate check box is disabled.

9.2.2.5 Multithreading



Nero Recode supports multi-core processors. If you have one of these, you can distribute the encoding process over the desired number of threads.

The following input options are available:

Multithreading settings area

Number of threads/slices drop-down menu	Defines whether the encoding process should be performed by multiple threads. The number of processor cores used corresponds to the number of threads you have selected. This ensures optimal use of a multi-core processor system.
--	---

9.2.3 Defining audio settings

The following information is listed in the columns on the **Video** tab:

Property	Shows the properties saved on the DVD, e.g. resolution, frames per second, pixel shape and video structure.
Source	Shows the original size.
Target	Shows the target sizes depending on the selected Nero Digital™ profile.

Click the **Settings** button to open the **Properties of Nero Digital™ audio** window. Settings for the audio encoder can be defined here.

The following input options are available:

Nero Digital™ audio profiles area

Automatic settings (recommended) radio button	Automatically adapts the audio profiles to the Nero Digital™ profile , so that the quality of the audio track best corresponds to the output medium.
Custom profile option button	Activates the combo boxes Audio channels , Mode , Scan rate and Bit rate .

Audio channels drop-down menu	Selects the audio channels. Depending on the Nero Digital™ profile selected, Stereo , Mono and 5.1 are available.
Mode drop-down menu	Selects the mode with which the audio channels are processed. Depending on the Nero Digital™ profile selected, Low complexity and High efficiency are available. The selection affects the scan and bit rate.
Scan rate drop-down menu	Selects the scan rate. The scan rate is the frequency that a signal is scanned per time interval. The default is 44100 Hz.
Bit rate drop-down menu	Selects the bit rate. The bit rate is the quantity of data transmitted during a time unit.

Audio volume area

Volume drop-down menu	Sets the required volume.
---------------------------------	---------------------------

9.2.4 Creating your own subtitle track

The **Secondary subtitle track** drop-down menu on the **Subtitle** tab allows you to create a subtitle track. This option is only available if you are converting titles into Nero Digital™.

You can also import an existing subtitle track. For an import of this kind, the file must be saved in the following format: .SUB, SRT, SMI, SSA, ASS, PSB.

The individual subtitles in files in SUB (preSub) format consist of a single line. The lines are separated from each other by paragraph marks and must have the following form:

{0}{50}Sample subtitle text	The start and end frames in which the text is to appear, in curled brackets. Followed - without a blank - by the subtitle text.
------------------------------------	---

Files in SRT (**SubRip**) format consist of blocks of 3 lines. They are separated from each other by blank lines and must have the following form:

1	Continuous number, beginning with one, increases by one per block.
00:01:36,480 --> 00:01:38,360	Precise time in hours, minutes, and seconds after which the text is to be displayed. The thousandths of a second are separated by a comma. Blank. Arrow, consisting of two hyphens and an angled bracket. Blank. Precise time in hours, minutes, and seconds after which the text should no longer be displayed. The thousandths of a second are separated by a comma.
Sample subtitle text	The text of the subtitle.

The subtitle format SMI (**SAMI**) is based on HTML. Time is specified in milliseconds. This format is a standard developed by Microsoft® and is intended primarily for use in video subti-

files. SMI can be played back only with Windows® Media Player® and other Microsoft® products.

The subtitle format SSA (**S**ub **S**tation **A**lpha) has the widest range of functionality. The syntax consists of sections and the included code lines. The sections begin with a bracket (e.g. "[Script Info]"), followed by predefined code lines (e.g. Title, Original timing), containing the respective information. This allows the use of colors, fonts, font sizes and similar.

The subtitle format ASS (**A**dvanced **S**ub **S**tation **A**lpha) is an enhanced version of SSA and offers all the features of SSA. It also allows subtitles to be graphically edited, e.g. for Karaoke.

The subtitle format PSB (**M**P**s**ub) was developed for the Mplayer®, a Movie Player for Linux®. The main feature is the use of dynamic time dependencies. The code consists of numbers and text from the subtitles. The first number in the code is the time in seconds between consecutive subtitles. The second number indicates how long the current subtitle is displayed.



You can only insert your own subtitle if you either select the Nero Digital™ category **Nero Digital™** or **AVC** and the Nero Digital™ profiles **Standard**, **Cinema** or **HDTV** for encoding.

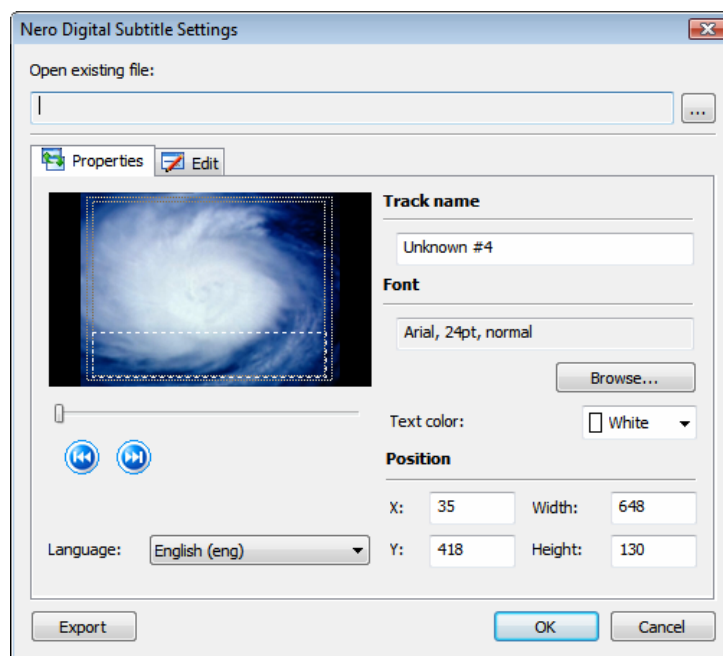





Fig. 15: Nero Digital™ Subtitle Settings window

The following input options are available:

Open existing file button	Opens the Open dialog box. Existing subtitle files can be selected there.
Export button	Opens the Save As dialog box. You can save a subtitle file that you created in a folder of your choice.
OK button	Saves the changes in the Nero Digital™ Subtitle Settings dialog box.
Cancel button	Discards the changes in the Nero Digital™ Subtitle Settings dialog box.
Properties tab	

Track name text box	Allocates a name to a subtitle track you have created.
Font text box	Displays the settings from the Font dialog box.
Browse button	Opens the Font dialog box. Make the settings for the font of your subtitle track here.
Text color drop-down menu	Specifies the color of your subtitle track.
Position area	Specifies the coordinates of the text box where the subtitle track is displayed.
Language drop-down menu	Specifies the subtitle track language to be declared.
	Goes to the end of the current subtitle line or the beginning of the next.
	Goes to the beginning of the current subtitle line or the end of the next.
	The control can be used to skip the required frame.
Edit tab	
Append button	Adds a new line to the end of the frame. In the standard setting the interval between the start and end of the time code is 4 seconds.
Edit button	Opens the Edit Subtitle Line dialog box. This button can be used to enter the subtitle text for every interval in the Text column.
Delete button	Deletes a previously highlighted line.

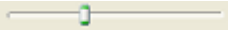
9.2.5 Setting chapter markers







The **Set Chapter Markers** function allows you to add your own chapter markers to those already on the DVD.

The advantage of chapter markers is that they can be selected by a DVD player at the press of a button.

Chapter markers divide the content of a DVD. You can use the DVD player to skip to these directly.

The following input options are available in the **Chapter** window:

Current frame display field	Shows the current playing time of the video displayed in the preview window.
Chapter display field	Shows the chapter markers already set and the starting time for every chapter marker.
Add button	Adds a chapter marker at the selected point in the video.
Delete button	Deletes the selected chapter marker.
	Jumps to the desired frame.

	Starts playback.
	Pauses playback.
	Skips 6 seconds back.
	Skips a few frames back.
	Skips forwards a few frames.
	Skips forwards 6 frames.

10 Recoding a main movie to Nero Digital™

Nero Recode allows you to encode DVD-Video files as Nero Digital™ files. The Nero Digital™ codec is MPEG-4-compatible. This option allows you to encode just the main movie on a DVD without the extras. You can then play this back, for example in Nero ShowTime.

10.1 Task-specific input options

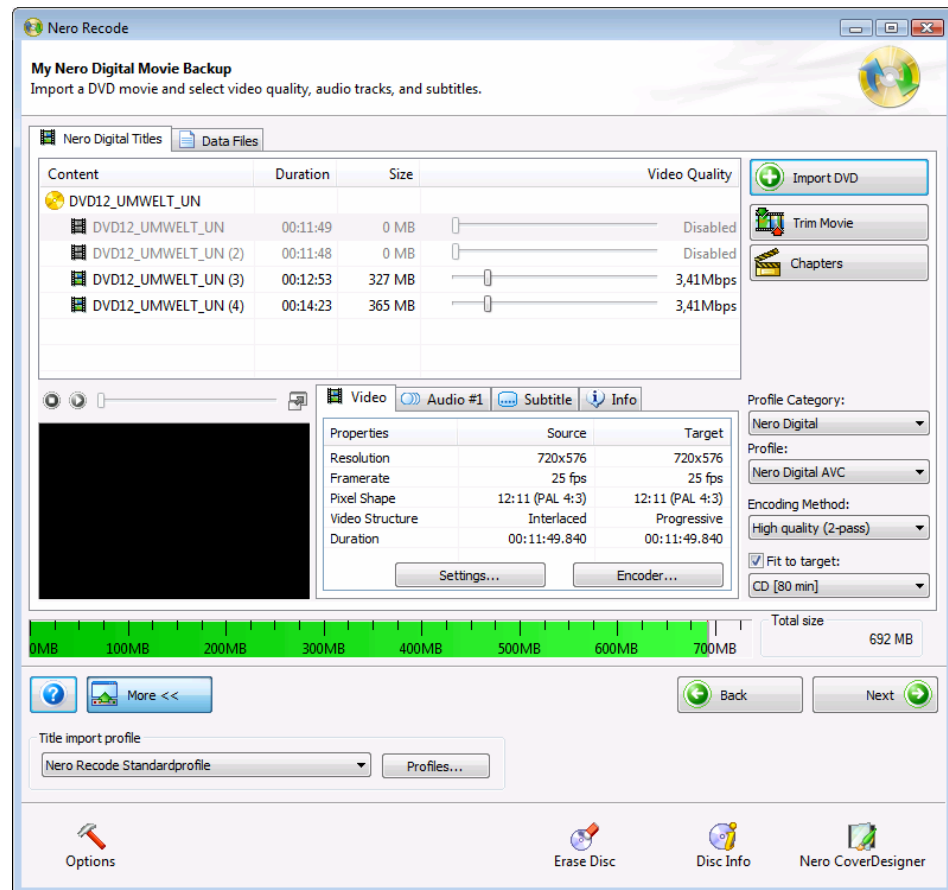




Fig. 16: My Nero Digital™ Movie Backup screen with files already imported

In addition to the input options described under [Import Files screen](#), the following input options are available in the **My Nero Digital™ Movie Backup** screen for the **Recode Main Movie to Nero Digital™** task:

 Trim Movie	Opens a window where the selected video title can be trimmed. The button is only active if a DVD-Video title has been imported.
 Chapters	Opens a window where chapter markers can be set (Setting chapter markers). This button is only enabled if a DVD-Video title has been imported and selected.
Nero Digital™ Category	Changes the Nero Digital™ category . The setting relates to the target medium for which encoding is being carried out. The size of the result varies, depending on the selection.
Nero Digital™ Profile	Changes the Nero Digital™ profile. The setting relates to the target medium for which encoding is being carried out.

Encoding method	<p>Selects the method to be used to encode the MPEG-4 file. With Fast (1-pass) Nero Recode performs one conversion step. This method takes less time, but the quality is lower than 2-step encoding.</p> <p>With High quality (2-pass) Nero Recode performs two conversion steps. The quality is better, but the process takes longer.</p>
------------------------	--

The following information is listed in the columns in the upper section of the **Nero Digital™ Titles** tab.

Content	Shows the structure contained on the DVD.
Duration	Shows the length of the relevant area.
Size	Shows the size of the relevant area.
Video Quality	Shows the quality. The higher the number, the better the quality of the file recoded with Nero Recode.

10.2 Recoding

To recode a main movie to Nero Digital™, proceed as follows:

1. Start Nero Recode (see [Launching Nero Recode via Nero StartSmart](#)).
2. Select the **Recode Main Movie to Nero Digital™** task in the **Nero Recode** start screen.
 - The **My Nero Digital™ Movie Backup** screen is displayed.
3. Insert the DVD you want to recode in the DVD drive on your PC.
4. Check the **Fit to target** box.
 - The contents of the source DVD are then recoded to fit the target format selected in the drop-down menu **Fit to target**.



If the **Fit to target** box is not checked, the DVD-Video is imported in its original size. In this case the volume of data can be so great that it can only be burned onto a double-layer DVD or saved on the hard drive.

5. Select the required import profile in the **Title import profile** area (see [Title import profile area](#)).
6. Click the **Import DVD** button.
 - The **Find Folder** dialog box opens.
7. Select the drive or hard drive folder containing the DVD that you want to recode and click the **OK** button.
 - You have imported the main movie on the DVD. The capacity bar at the bottom of the screen shows how much memory the imported files use. If the imported files are larger than the target medium, the central area of the **Nero Digital™ Titles** tab shows how the files will be recoded in line with the selected profile.
8. If you wish to modify the video settings, click the **Settings** button on the **Video** tab (see [Defining video settings](#)).

If you wish to modify the encoder settings, click the **Encoder** button on the **Video** tab (see [Defining Encoder Settings](#)).

9. Select the audio tracks in Dolby Digital format that you want to copy on the **Audio #1** and **#2** tabs and specify the format to which the audio files are to be converted.
10. If you want to change the audio settings, click the **Settings** button (see [Defining audio settings](#)).
11. Select the subtitle tracks you want to copy on the **Subtitle** tab.
12. Create your own subtitle track as required (see [Creating your own subtitle track](#)).
13. If you want to trim a video title:
 1. Select the video title you want to trim on the **Nero Digital™ Titles** tab.
 2. Click the **Trim Movie** button.
 - The **Trim Movie** window opens.
 3. Trim the video title by defining the start and end frames (see [Trimming titles](#)).
 4. Confirm your selection by clicking the **OK** button.
 - The video title is trimmed.
14. If you want to add additional chapters to individual video titles:
 1. Select the video title to which you want to add additional chapters on the **Nero Digital™ Titles** tab.
 2. Click the **Chapters** button.
 - The **Chapter** window opens.
 3. Add more chapters to the video title (see [Setting chapter markers](#)).
 4. Click the **OK** button.
 - The video title now contains new chapters.
15. Select the required Nero Digital™ category in the **Nero Digital™ category** drop-down menu.
16. Select the required Nero Digital™ profile in the **Nero Digital™ profile** drop-down menu.
17. Select the desired encoding method in the **Encoding method** drop-down menu.
18. Move the slider for an area in the **Video Quality** column until the required video title quality is reached.



The quality of the rest of the content of the DVD will deteriorate proportionately to the improvement in the quality of an individual video title.
The slider in the **Video quality** area works only if the **Fit to target** check box is disabled.

19. Click the **Next** button to define the burn settings.
 - The **Burn Settings** screen appears.
20. Make the required settings for the burn process (see [Burn Settings screen](#)).
21. Click the **Burn** button to start the burn process.
 - The burn process is started.
The **Recoding and Burning** screen is displayed and you can follow the progress of the burn process on the progress bar.

22. To cancel burning, click the **Stop** button. To pause/resume burning, click the **Pause/Resume** button.
23. If you have chosen the CD/DVD drive of your computer as the target of the compilation, you will be prompted to insert an empty writable disc in the drive.
 - ➔ The burn process is complete when the relevant message appears in the information window.
You can now return to the burn settings and burn the compilation again. The **Next** button takes you to the **What do you want to do now?** screen, where you can select the other options or close Nero Recode.

11 Glossary

1-pass

With the 1-pass method, only one conversion run is performed. The movie is analyzed and, at the same time, converted with the available bit rate.

2-pass

With the 2-pass method, the file goes through several conversion runs. The first step analyzes the movie and creates a temporary file (*.log). The second step converts the file. The bit rate data stored on the temporary files is used.

AAC

AAC stands for **A**dvanced **A**udio **C**oding and is an audio encoding method defined under MPEG-4. AAC has a higher compression rate than comparable formats (e.g. MP3) and achieves high audio quality even at 64 kBit/s. This encoding method is used e.g. by online music businesses and online radios.

AC3

AC3, better known as Dolby® Digital, is a multi-channel sound system used on DVDs and in cinemas and television. It supports bit rates of 32 kbit/s to 640 kbit/s and enables high quality sound playback without detracting from the video quality.

AVC

AVC (also known as H.264) stands for **A**dvanced **V**ideo **C**oding and is a standard for video compression. AVC was developed for maximum encoding efficiency and enables video compression in good quality at low bit rates. It is an obligatory video compression method for high resolution television transmissions as well as mobile devices (e.g. cell phones, PDAs).

B-Frame

A "frame" is a single image from a video file. The "B" stands for bidirectional, which means that B-frames use image data from two directions to calculate the image content. Previous frames as well as subsequent frames are considered.

Bilinear Interpolation

Bilinear interpolation is a method in which new pixel values are based on the average of the four adjacent pixels. So a new pixel is calculated from the four adjacent dots. This method is inferior to bicubic interpolation.

Focal plane

A focal plane contains all of the information needed to decode an image.

Bicubic interpolation

Bicubic interpolation is a method in which calculation of new pixel values is based not only on the adjacent pixels but also on other nearby pixels. So a new pixel is calculated from eight nearby points. This method offers the best results. However, calculation takes longer.

Bit rate

The bit rate is the quantity of data transmitted within a time unit. The higher the bit rate, the better the image quality.

Book type

The Book type defines the specification (e.g. DVD-, DVD+, DVD-ROM) of a DVD. Self-burned DVDs are sometimes not played back by DVD players. This may be due to the fact that the players either cannot read or have difficulty in reading DVD-, DVD+ or DVD-RW. With Nero Recode you can set the book type of the self-burned DVD to DVD-ROM to guarantee playback.

CABAC

Context **A**daptive **B**inary **A**rithmetic **C**oding is a method for arithmetic encoding of digital video files. CABAC is a component of the encoding standards MPEG-4 AVC and H264. Instead of bit sequences of variable length, arithmetic encoding is used, which saves 10% to 20% of the bit rate.

Deinterlace

With the deinterlacing feature, video files with interlacing are converted to full-screen. Modern televisions do not work with interlacing but with full-screen images.

Decoding

Decoding refers to the conversion of computer-readable audio files (e.g. mp3) into Audio CD format. Decoding takes place at the same time as the burn process.

Encoding

Encoding is the conversion of audio files that are located on an audio CD into an audio format that the computer can read.

GOP

GOP stands for **G**roup of **P**ictures and describes a group of sequential single images in a stream of images in a video file. Every movie or video stream consists of sequential GOPs. It is from there that the visible images are generated.

I-Frame

Intra frames (also called key frames) are complete single frames. No information from other images is needed to decode these single images. I-frames require the most storage space, but they offer the highest quality picture.

Image file

An individual file on the hard drive that contains an image of a complete disc. An image can be used if problems occur during the burn process or if there is no burner connected to the PC. You will need free space on your hard drive to create an image.

Interlace

The interlacing process, which is used to display a TV picture in PAL standard, displays two half frames in succession. As the frame is generated, only the odd lines from the output device are displayed for the first half frame. When this is complete, the second half frame is generated from the even lines. The two frames are encoded separately. The relatively high refresh frequency means that the eye picks this up as a single frame.

Interpolation

Interpolation is a calculation process in which intermediate values are calculated from two or more known values. When the size of screened images is calculated anew, the number of

existing pixels is converted to a smaller or greater quantity, depending on the magnification ratio. Suitable median values are formed from the color transitions between the original pixels.

The quality of the interpolation process determines the resulting image quality.

Lanczos interpolation

Lanczos interpolation is an alternative to bicubic interpolation, but it is very similar. With this method new pixel values are calculated based on a weighted sum of the relative position of the the original pixels. Weighting is determined with the aid of an iterative algorithm developed by Cornelius Lanczos.

This interpolation method generates relatively strong sharpening and offers higher quality.

Letterbox

Letterbox is a process for adapting a format by e.g. compressing a video file from 16:9 format to the television format 4:3. The picture is limited at the top and bottom of the screen with black bars.

Macroblock

A macroblock describes 16 x 16 pixels and is the elementary unit in the MPEG standard on which motion coding is also based.

Macroblock level

The macroblock level describes the type and position of a macroblock in the image.

MPEG

MPEG stands for **M**otion **P**ictures **E**xperts **G**roup and is a way to compress video and audio files.

Multithreading

The capability of a process to work through several editing threads at the same time. In the software area, calculation of a process can be distributed amongst multiple system processors.

P-Frame

P-frames (predicted frames) are predicted images in the MPEG compression. They are based on predictions and suppositions from previous intra frames (I-frames) and predicted frames (P-frames). They contain only the modification information on the previous image. Since P-frames have a higher compression rate than I-frames, the compressed data volume is less.

Plug-ins

A plug-in is a small extra program that adds features to a higher-order program.

Quantization

Quantization is part of the digitalization of analog signals. The analog signals are scanned at regular intervals, and at each of the scan times their voltage values are converted to digital values. This conversion to numbers and measurable quantities is referred to as quantization.

Recoding

Recoding means the conversion of an existing video with certain properties (e.g. bit rate 2500 kbps) into the same format with different properties (e.g. bit rate 1990 kbps).

Stream or Streaming

Continuous transmission of data, whereby with media streaming the audio and video data is played back directly upon reception. In computer science streams are continuous sequences of data records for which the end can not be determined in advance.

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