# *NeroAPI*

# *v6.0.0.0*

**The *NeroAPI* will only work with**
**a fully installed Nero version!**



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USING THE SOFTWARE INDICATES YOUR ACKNOWLEDGMENT THAT YOU HAVE READ THE LICENSE AND AGREE TO ITS TERMS.

**The license agreement is contained in a text file, “NeroSDK_License.txt”, to be found in the root folder of the installation package.**

# 3. Introduction

## 3.1. Motivation

The *NeroSDK* is a tool for inclusion of *Nero* functionality in your own applications.

Since it became available we have provided documentation in form of source code comments and a readme-file.
That kind of documentation proved as being ample for seasoned professionals, though somewhat tedious.
Soon more and more people began to use this SDK. It became obvious that a "manual within the code" was not enough for programmers who are less familiar with getting the grip on somebody else's source code.
You asked for this documentation, we have created it. We hope this little manual, which describes the *NeroAPI* part of the *NeroSDK*, to be just what you need.

Unfortunately nothing is ever perfect. So the author would be grateful if you sent your suggestions or pointed out errors, both in our code and documentation.

## 3.2. Overview

This paper, the documentation of the *NeroAPI*, contains some practical guidelines on how to use the API (Application Programming Interface) that is implemented in the NeroAPI.dll with the help of *NeroSDK* (Nero Software Development Kit). The SDK is available for OEMs (Original Equipment Manufacturers) and registered users of *Nero*.

We believe that it will help you add CD- and DVD-burning capability to your own applications in less time. A detailed discussion of what the programming samples do, and how they do it, together with a list of all types and functions, should enable you to get your routines working in no time.

A brief description of *Nero's* Audio-, Video- and Super-Video-CD capabilities will ensure that you do not fail because of using the wrong file format.

## 3.3. Requirements

This documentation assumes that *Nero* 6.0.0.0 is already installed on your computer. The current *NeroSDK* version (*NeroSDK* 1.03) supports the commandset of *Nero* 6.0.0.0.

Depending on your individual needs, your *NeroAPI*-based application might work with an earlier version. Therefore, this documentation will indicate which *NeroAPI* version introduced a particular feature, function, or type.
For additional information please take a look at *3.5 Compatibility Between Different NeroAPI Versions*.

## 3.4. Required Skills

This documentation is directed towards Software developers who have gathered some experience in programming C or C++.
It is absolutely required that you know the basic concepts of the C programming language to use the *NeroAPI*.

If you have no or little experience with C/C++, you will find a list of books and Internet addresses that we regard as very useful for learning the language.
C and C++ are still the most commonly used programming languages, and once you've mastered them you will learn any other programming language with ease.

## 3.5. Compatibility Between Different NeroAPI Versions

Since several programs must access the same *NeroAPI* package, not all of them can be updated every time a new version of *Nero* is released.

*Nero* ensures both source and binary compatibility with its future versions.
Version 5.0.3.9 of *Nero* and the following versions meet that requirement, while older versions do not.

### 3.5.1. Source Compatibility

Applications written for one version of the *NeroAPI* will work with more recent versions of *Nero*, without having to change their source code.

### 3.5.2. Binary Compatibility

Applications written for one version of the *NeroAPI* will work with more recent versions of *Nero* without having to compile the application again.

## 3.6. Related Topics

Closely related to *NeroAPI* is *NeroCOM*, a Type Library for the Component Object Model. *NeroCOM* presents another approach for accessing the power of *Nero*.

*NeroCOM* will be installed as part of the *Nero* installation. The documentation for *NeroCOM* is available as part of the *NeroSDK*.

## 3.7. The NeroSDK Forum

We provide a forum for all users of the *NeroSDK* to get in dialog with each other at http://club.cdfreaks.com/forumdisplay.php?s=&forumid=73. We will also monitor the messages from time to time and try to help where possible.

# 4. Quick Start

## 4.1. Running Precompiled Sample Applications

### 4.1.1. NeroAPITest

This application can

- read information about a CD
- burn audio CDs
- burn ISO CDs
- burn UDF (Universal Disc Format) CDs
- burn ISO/UDF CDs
- burn DVDs
- burn mixed mode CDs
- burn Video and Super Video CD
- extract CDA tracks.

Open a command window (MS-DOS shell) and type “NeroAPITest “ followed by a command and in most cases a parameter list.

See the following table for valid parameters. Square brackets indicate that a parameter is optional. However, when writing an Audio/ISO CD, you have to supply at least one valid set of parameters.

| **Command** | **Function** | |
|---|---|---|
| *--listdrives* | List available drives | |
| | **Parameters** | **Description** |
| | None | |
| **Command** | **Function** | |
| *--cdinfo* | Get information about a CD | |
| | **Parameters** | **Description** |
| | *--drivename ‘x’* | Supply drive letter. |
| **Command** | **Function** | |
| *--write* | Write Audio/ISO/UDF/Mixed Mode CD or DVD | |
| | **Parameters** | **Description** |
| | *--drivename 'x'* | Supply drive letter. |
| | *[--real]* | Do not simulate burning process. |
| | *[--TAO]* | Track At Once. |
| | *[--bup]* | Burn with buffer underrun protection. |
| | *[--writebuffersize ‘x’]* | Set the size of the write buffer in KByte. |

| **Command** | **Function** | |
|---|---|---|
| | *[--artist 'artist']* | Supply artist's name for Audio CD. |
| | *[--title 'title']* | Supply Audio CD title. |
| | *[--speed 'x']* | Select desired speed. |
| | *[--pause x]* | Pause length in blocks. Valid pause lengths are 0 to 7500.<br>In TAO only default pause length is supported (150). |
| | *[--audioinindex0]* | Write audio data into index 0 to prevent silent pauses between tracks.<br>TAO and –audioinindex0 are mutually exclusive. |
| | *['audio file1'] ['audio file2'] ...* | List of Audio files to burn. |
| | *[--cdextra]* | Use the CDExtra feature. Two sessions will be created, the first containing Audio tracks, the second containing one ISO track. |
| | *[--iso 'volume name']* | Name the ISO-volume. |
| | *[--udf 'volume name']* | UDF |
| | *[--isoudf 'volume name']* | ISO and UDF |
| | *[--dvd]* | Burn ISO DVD |
| | *[--iso-no-joliet]* | No long filenames. |
| | *[--iso-mode2]* | Select ISO mode 2. |
| | *['dir/file1'] ['dir/file2'] ...* | List of files to burn. Can be directory tree or file. |
| *--write* | Write Video CD | |
| | **Parameters** | **Description** |
| | *--drivename 'xxx'* | Supply drive letter. |
| | *--videocd* | Selection of Video CD type |
| | *[--real]* | Do not simulate burning process. |
| | *[--TAO]* | Track At Once. |
| | *[--bup]* | Burn with buffer underrun protection. |
| | *[--writebuffersize 'x']* | Set the size of the write buffer in KByte. |
| | *[--speed 'x']* | Select desired speed. |
| | *['mpeg/jpeg file1']*<br>*['mpeg/jpeg file2']…* | List of Video files. |
| **Command** | **Function** | |
| *--write* | Write Super Video CD | |
| | **Parameters** | **Description** |
| | *--drivename 'xxx'* | Supply drive letter. |
| | *--svideocd* | Selection of Video CD type |
| | *[--real]* | Do not simulate burning process. |
| | *[--TAO]* | Track At Once. |
| | *[--bup]* | Burn with buffer underrun protection. |

| Command | Function | |
|---|---|---|
| | *[--writebuffersize 'x']* | Set the size of the write buffer in KByte. |
| | *[--speed 'x']* | Select desired speed. |
| | *'mpeg/jpeg file1'*<br>*['mpeg/jpeg file2']…* | List of Video files to burn. |
| **Command** | **Function** | |
| *--read* | Copy CD tracks to files | |
| | **Parameters** | **Description** |
| | *-- drivename 'x'* | Supply drive letter. |
| | *-- 'xy' 'file1' [-- 'xy' 'file2']…* | Read contents of track with number 'xy' into 'file 1'.<br>The file name has to include the suffix. Only ".pcm" and ".wav" will be accepted. |
| **Command** | **Function** | |
| *--erase* | Erase a CD-RW | |
| | **Parameters** | **Description** |
| | *[--entire]* | By default a quick erase is done, where the actual content of the CD is not erased.The "—entire" option sweeps the whole CD, insuring that no data can be retrieved by any means afterwards. |
| | *-- drivename 'x'* | Supply drive letter. |
| *--eject* | Ejects a CD from the drive | |
| | **Parameters** | **Description** |
| | *-- drivename 'x'* | Supply drive letter. |
| **Command** | **Function** | |
| *--load* | Loads a CD into the drive | |
| | **Parameters** | **Description** |
| | *-- drivename 'x'* | Supply drive letter. |

### 4.1.2. NeroAPITest Comand Line Examples

Simulate the burning of a mixed mode CD with one audio track and one file using the CD recorder with the drive letter "D":
*NeroAPITest --write --drivename d c:\media\audio\police01.wav --iso mycd c:\data\file.dat*

Burn the content of a folder:
*NeroAPITest --write --drivename d --real --iso mycd c:\data*

## 4.2. Compiling the Samples

- Start Visual C++.
- Select *Files* and *Open Workspace* from the menu.
  An *Open*-dialog will come up.
- Select *project files* as file type (".dsp"-suffix)
- Navigate to the samples directory and select the project you want to open.
- Click the *OK*-button.
- Open the *Build*-menu and then select *Build All*.

## 4.3. Accessing the *NeroAPI* in Your Applications

- Make the *.h files of the *NeroAPI*-include-directory accessible from your program
- Link your project with the NeroAPIGlue library
- Use the *NeroAPI* functions in proper order. Take the samples for reference.
- Implement the callback functions.

## 4.4. Points of Consideration

Make sure that the application will find the required DLLs, by installing *Nero*.

**The NeroInit and NeroDone functions must not be called from the destructor of a global object or from a DllMain function. If they are called like that, the result will be a deadlock.**

To burn WMA files onto CD, *Nero's* WMA Plug-in must be installed.

Users of *Nero* can download the WMA Plug-in free of charge from http://www.nero.com.

# 5. Detailed Discussion of the NeroAPITest Sample

NeroAPITest,cpp is the source file that defines what the application actually does. It contains the main function which is the application's entry point. Having a main function identifies it as console application (as opposed to a true Windows application that has a winmain function).

At the beginning of NeroAPITest.cpp, you will find a few include-directives. Those are references to other files that contain some required definitions:
NeroAPIGlue.h is responsible for attaching NeroAPITest to the NeroAPI.DLL.

The rest of the include files are required for communicating with your Operating System. They let you access device-Input/Output, handle special keystroke combinations like Ctrl-C (which will cause the current task to abort), display characters on your computer screen, and perform many other important background tasks.

**Line 43:** From line 43 on you will find function declarations. All listed functions are implemented within NeroAPITest.cpp. Most of them are callback-functions, and thus responsible for giving *NeroAPI* access to NeroAPITest whenever necessary, e.g. to display a progress bar or obtain user input.

**Line 64:** Beginning with line 64, types and variables are defined, and termination behaviour is implemented by a sequence of *NeroAPI* calls in the Exit function, starting in line 115. The order of those API calls is very important, and if some API functions that free memory were not called, the application would allocate memory and not free it when terminating.

**Line 133:** The function Usage will display a help-text, concerning the proper usage of program arguments or command line parameters.

**Line 158:** The function main starts by initializing variables and then parses command line parameters to determine what the user wants to do. According to those parameters variables are set, indicating what kind of device is to be used, whether the application should read or write data, what kind of data, and where the data comes from.

**Line 440:** The function signal  tells Windows to call our SigCtrlC function when Ctrl-C is pressed.

Then the application tries to load the NeroAPI.dll by calling NeroAPIGlueConnect. If it cannot be found, an error message is displayed, and the application is terminated by calling our Exit function, providing error code 10 as a parameter.
During NeroAPIGlueConnect the Windows registry is queried for the shared *NeroAPI*.

**Line 448:** A call to NeroGetAPIVersionEx retrieves the API's version number. The version number, contained in four WORD values,  is then printed on the screen.

**Line 456:** The *NeroAPI* is initialized. The *NeroAPI* will work in Demo mode if no Serial Number is found.

**Line 478:** If the write buffer size is not 0, NeroSetOption is called, setting in the *NeroAPI*. The actual value is calculated by taking the user-provided parameter and

multiplying it by 1024 (1 KByte), because the user is expected to give the buffer size in KBytes.

**Line 483:** The program then tries to get a list of all CD-ROM devices in the system by calling NeroGetAvailableDrivesEx. If no device is present, the application will terminate.

**Line 490:** If a drive name has been specfied by the *–drivename* command, the program searches for that device in the list of available devices. The program then tries to open it for further use by calling NeroOpenDevice. If no device handle is returned (e.g. if the drive letter given is not present in the system), the application will terminate with an error message.

If *–listdrives* was passed as a command line parameter, the list of available devices will be printed.

**Line 544:** If a device handle could not be retrieved, the application terminates.

**Line 549:** This code section retrieves and displays a list of allowed speeds for the selected drive.

**Line 557:** Loading a CD is handled after this line.

**Line 561:** Erase-behavior is implemented here. The application checks whether a CD is present in the drive, whether it is of the right type, and whether the CD should undergo a quick erase or a complete sweep, to make it ready for rewriting.

**Line 579:** The “Eject CD” part has been implemented here.

**Line 583:** Line 583 to 692 are dedicated to getting Information about a CD or reading tracks. The “read”-part after line 637 scans for all available tracks and tries to determine whether they are PCM or WAV. The respective format will be read from the CD.
If any error occurs, the application is stopped after displaying an error message.

**Line 694:** If the user requested to write a CD-ROM or DVD, the code after line 661 checks whether creation of ISO/Audio CD, ISO DVD, or VCD/SVCD was specified. The size of the CD/DVD directory is calculated, and the program tries to allocate memory for the NERO_WRITE_CD structure, that will be used for writing the information. If the free-memory-pool is not large enough, the application will terminate.

Then the application fills the NERO_WRITE_CD structure with the information the user provided.

**Line 770:** The burn process is started by calling NeroBurn, passing a pointer to the NERO_WRITE_CD structure, which has just been filled with content.

**Line 784:** Burning of VCD/SVCD is handled here. Basically this means filling a NERO_WRITE_VIDEO_CD structure and passing it to the NeroBurn function.

**Line 840:** This part of the code deals with burning an image. Allowed formats are NRG, ISO and CUE.

After the CD has been burnt, the log file is updated, the allocated memory is freed, and the application terminates without error.

**Line 910:** The implementation of the idle callback is empty, apart from an assertion that ensures that the *NeroAPI* actually returned the same pointer provided as user data. In a GUI application this function would probably do a little more than just to return control to the *NeroAPI* and passing the aborted-flag.

**Line 931:** Here the user can reply to a *NeroAPI* request by keyboard input. CharIO will take an array of mappings from character to NeroUserDlgInOut constants, and return the proper NeroUserDlgInOut constant depending on the user input.

**Line 953:** The UserDialog callback implementation displays a number of options, depending on the value of “type”. It then calls CharIO to get the user’s desired option. The corresponding NeroUserDlgInOut constant is then returned to the *NeroAPI*.

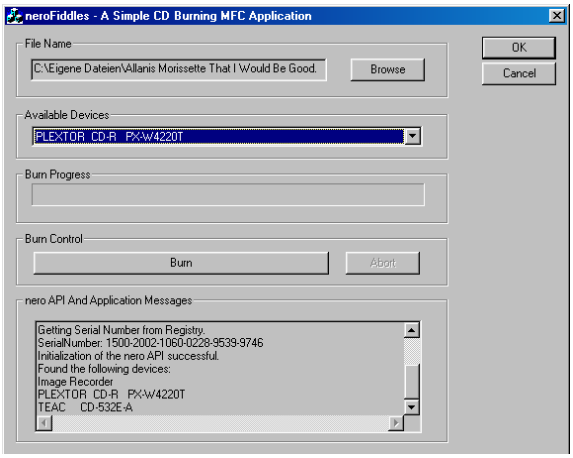
**Line 1172:** Here we can find the implementation of the various callback functions that the *NeroAPI* requires.

E. g. ProgressCallback, whenever called by the *NeroAPI*, will display the current progress of the burn progress in percent.

**Line 1271:** The NeroError function obtains the last error from the *NeroAPI*, prints some information about the action that failed, lets the *NeroAPI* free some memory and makes the application terminate with exit code 10.

# 6. Creating A Simple MFC Application

## 6.1. Nero Fiddled While Rome Burned!




It is quite obvious that the world has been waiting for an application that gives some tribute to important events of the past. So we will call this one “NeroFiddles”. Application names don’t come any better.

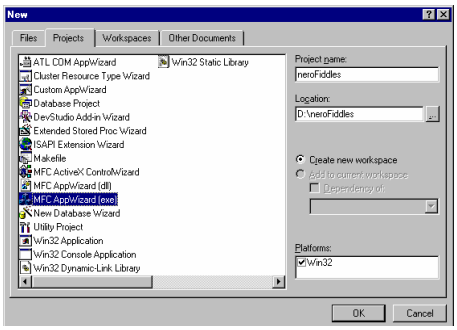
Our Nero - of course - has a lot more to do than just fiddle.

This simple application lists the available devices that can burn CDs. It lets the user choose a file and burns an ISO CD which contains this single file.
Nothing spectacular, and less powerful than the command line examples in the previous chapter.

But to prevent the application from becoming too cluttered and hard to understand we have to keep it simple. GUI applications have a much bigger overhead than console applications. So we’ll just provide minimum functionality to keep the program small and simple. Once it works it is not that complicated to provide additional functionality. Getting started is the hard part.

## 6.2. Creating The Framework

***This tutorial is based on Visual C++ 6.0. Visual Studio .NET screens may differ!***
***Also Nero has to be installed on your system to run this sample!***

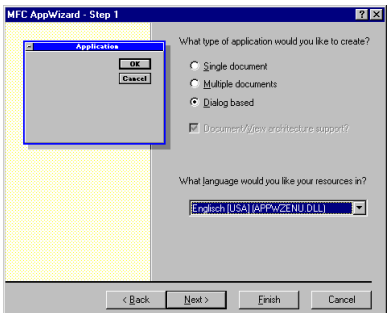



Open Microsoft Visual C++.

Select File/New from the menu. The “Projects” tab already should be selected when the “New” dialog opens.

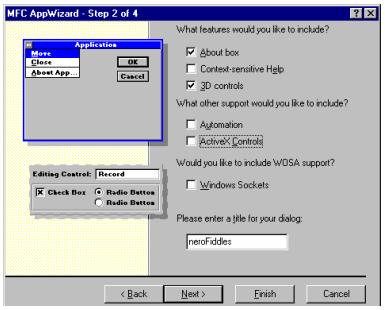
Select “MFC AppWizard (exe)” and type “NeroFiddles” into the “Project name” edit box. You may select your favorite project directory, but leave the rest of the settings as they are. Click on the “OK” button.

In the “MFC AppWizard Step 1” dialog select “Dialog based” and choose the preferred language for your resources. “English (USA) (APPWZENU.DLL)” should work fine, so let’s just pick this entry. Click “Next”.

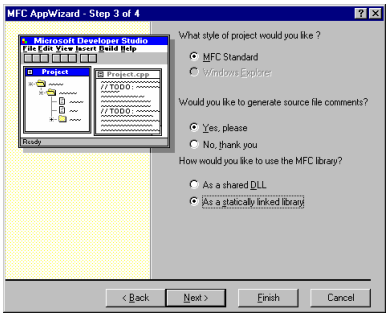



Uncheck “ActiveX Controls” in “MFC AppWizard Step 2” because we will not use any.

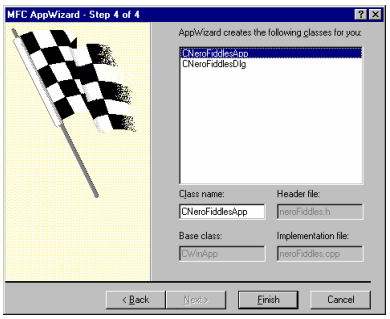
Click “Next”.




Select “As a statically linked library” in “MFC AppWizard Step 3 of 4”. The application becomes bigger, but we do not depend on the presence of the MFC DLLs on the target system. Leave the rest of the settings as they are. Click “Next”.

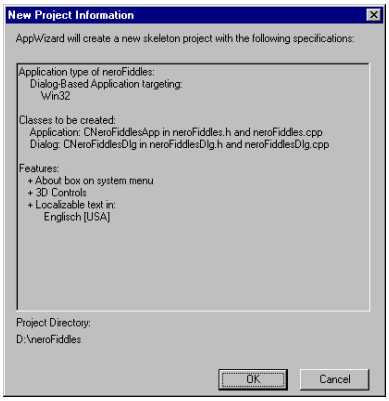



Click “Next”, do not make any changes and then click “Finish”.



A dialog pops up, telling you about what the AppWizard created for you. Click “OK”.

We now have a working MFC dialog based application that can be compiled and executed, though it doesn’t do much of what we need, yet.



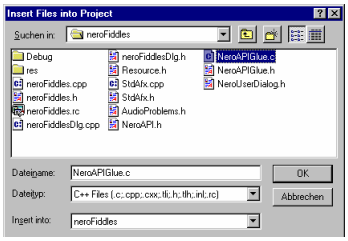

## 6.3. Adding NeroAPI files

Make sure that you can see the workspace window on the left side. If it is not there, activate it by selecting View/Workspace from the menu.

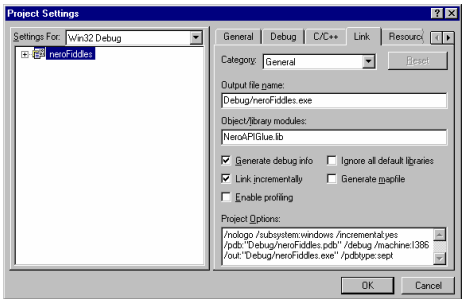
Before we do anything else we need to make sure that everything we need from the *NeroAPI* is in its place. Go to your *NeroAPI* folder and copy the contents of the “include” and “lib” subdirectories to your NeroFiddles-project directory. You will need to copy the following files:
NeroAPI.h, NeroAPIGlue.h, NeroUserDialog.h and NeroAPIGlue.lib.

The required *NeroAPI* files now are located as desired. Return to Visual Studio.

Select Project/Add To Project/Files from the menu. Select “NeroAPIGlue.h” from the “Insert Files Into Project” dialog that comes up. Hold down the <Ctrl> key and also select “NeroAPI.h” and “NeroUserDialog.h”. Click “OK”.




Go to Project/Settings. Select the “Link” tab, pick “Input” in the “Category” dropdown-listbox. Type “NeroAPIGlue.lib” in the “Object/library modules” edit field and “libcmt.lib” in the “Ignore libraries” edit field.



Select the FileView tab in the Workspace window. Open “NeroFiddles files”/ “Header Files”/ “StdAfx.h” by double clicking it. Within that file you should find something like this:

```
#include <afxwin.h>         // MFC core and standard components
#include <afxext.h>         // MFC extensions
#include <afxdtctl.h>           // MFC support for Internet Explorer 4
Common Controls
#ifndef _AFX_NO_AFXCMN_SUPPORT
#include <afxcmn.h>             // MFC support for Windows Common Controls
#endif // _AFX_NO_AFXCMN_SUPPORT
```

Right after that, add the following line:

```
#include "NeroAPIglue.h"
```

## 6.4. Adding Controls

Usually, the Resource View tab of the workspace window will already be selected and display a skeleton of our application. If you cannot see it, select the Resource View tab, and open NeroFiddles resources/Dialog/IDD_NEROFIDDLES_DIALOG.

You should see two buttons “OK”, “Cancel”, and a line of text that says “TODO: place your dialog controls here.”

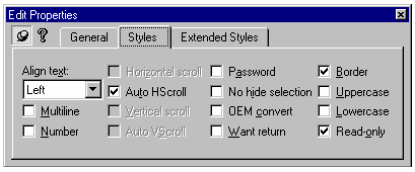
That’s what we intended to do anyway. So click on that line of text, and delete it by pressing the “del”-key.

Resize the dialog window a little bit, so that it becomes bigger. There’s no need to squeeze everything into the small amount of space Visual Studio initially offers us.

Now click on the “Edit Box” icon in the little “Controls” window. You should place a Edit box control in the upper left corner of the NeroFiddles dialog. Resize the control so that it can display a little more text.

Right click over the Edit box and select “Properties” from the context menu that pops up. You will now see a “Edit properties” dialog. Click the “Keep Visible” pinboard-style pin icon in the upper left corner of the property dialog – we will need this dialog more than once.

Rename IDC_EDIT1 to IDC_FILENAME. Select the "Styles" tab and make the control "Read only", it should now have a gray color. We want it to be "read only" because the user should rather browse for a file than type its name, which is error prone.




We need a button that will later open a FileOpen dialog. Click on the button icon in the "Controls" window. Place the button to the right of the Edit control that you just inserted.

Change the name from "IDC_BUTTON1" to "IDC_BROWSE" in the "Push Button Properties" window. Change the "Caption" from "Button1" to "Browse".

We also need a ComboBox that displays the available devices and lets the user select one for burning. Click on the "Combo Box" symbol of the "Control" window. Place the ComboBox under the Edit Box and and resize it. Rename it from "IDC_COMBO1" to "IDC_DEVICES". Select the "Styles" tab and change the type to "droplist" – the user then cannot enter any information, but has to choose from the options our application gives him, which is exactly what we want.

Now add a Progress Control and another button. Rename that button from "IDC_BUTTON2" to "IDC_BURN". Change the caption to "Burn". Make the button "disabled". It will be enabled after the user has selected a file for burning.

Place another button to the right of IDC_BURN. Rename that button to IDC_ABORT. Change the caption to "Abort". Make the button "disabled", this is the initial state when the application starts. The Abort button will be enabled when the user pushes the Burn button.

Add another Edit Box, Rename it from "IDC_EDIT2" to "IDC_MESSAGES". Select the "Styles" tab and make it "multiline" and "read only". Also check "Horizontal Scroll", "AutoHScroll", "Vertical Scroll" and "AutoVScroll". Now resize the Edit Box so that it can display about ten lines of text.

That completes our work with the Resource Editor. You can enhance the appearance by using some group boxes if you want.

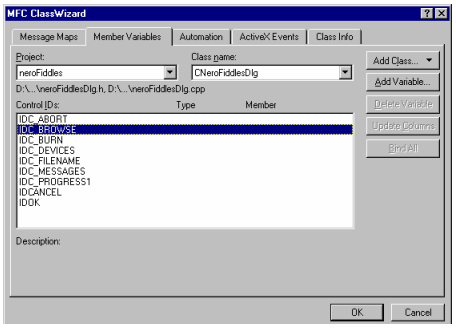
## 6.5. Adding Member Variables

If we build and run our application now, we see that it basically looks like what we wanted, but it doesn't do much so far. To include functionality we have to provide a few member variables, that map to controls and handle interchange with the NeroAPI.

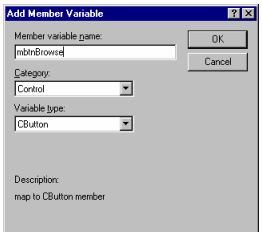
### 6.5.1. Variables For Controls

The controls we added need to be mapped to variables to provide easy access.

Open the ClassWizard (View/ClassWizard or Ctrl+W) and select the "Member Variables" tab. CNeroFiddlesDlg should already be selected as "Class name".




Click on "IDC_BROWSE" in the "Control IDs" list box. Click on "Add Variable", and in the following dialog provide the variable with the name "mbtnBrowse", make the Category "Control" and the variable type "CButton". Click "OK".




Now select "IDC_BURN", click on "Add Variable" and name it "mbtnBurn", category "Control", type "CButton".

IDC_ABORT gets a variable named "mbtnAbort", category Control, type CButton.

IDC_DEVICES becomes mcbxDevices, category Control (careful here: the default is value!), variable type CComboBox.

IDC_FILENAME is mapped to name medtFileName, Control, type CEdit.

IDC_MESSAGES becomes medtMessages, Control, CEdit.

IDC_PROGRESS1 maps to mpgsProgress, Control, CProgressCtrl.

IDCANCEL maps to mCancel, Control, CButton.

IDOK maps to mOK, Control, CButton.

The controls now have corresponding member variables and can be used quite easily.

### 6.5.2. Other Variables

We need to add numerous other variables to our dialog class.


Open the “ClassView” tab in the Workspace window. Right click on the “CNeroFiddlesDlg” class. Select “Add Member Variable” from the context menu. In the dialog that comes up enter “CString” for variable type and “mstrPathName” for variable name. Set “Access” to “private” and click “OK”.

Repeat this for CString mstrFileName, also private.

Enter “NERO_DEVICEHANDLE” as type and “ndhDeviceHandle” as variable name. Make it “private” and click on “OK”.

Repeat this with “NERO_SCSI_DEVICE_INFOS*” as type and “pndiDeviceInfos” as name. Make it “private”.

Do this for all of the following:

The name pncdCDInfo is of type NERO_CD_INFO*.

nsSettings is of type NERO_SETTINGS.

npProgress is of type NERO_PROGRESS.

writeCD is of type NERO_WRITE_CD.

mniiFile is of type NERO_ISO_ITEM.

dwVersion is of type DWORD.

pFile is of type FILE*.

pcDriveName [128] is of type char.

pcNeroFilesPath [128] is of type char.

pcVendor [128] is of type char.

pcSoftware [128] is of type char.

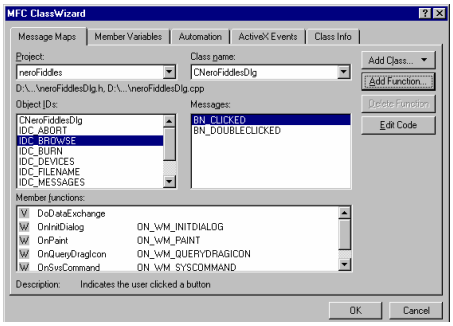
pcLanguageFile [128] is of type char.

mbAborted is of type bool.

## 6.6. Adding Message Handling Functions For Controls

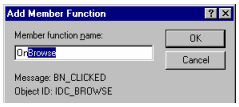
### 6.6.1. OnBrowse

The first “real” functionality we add is the selection of a file and the display of its name in IDC_FILENAME.




We need the ClassWizard again. If you closed it, reopen it and select the “Message Maps” tab. “ClassName” should still be CNeroFiddlesDlg. Select IDC_BROWSE from “Object IDs” and “BN_CLICKED” from “Messages”. Click “Add Function”.

Accept the proposed function name, which is “OnBrowse”, by clicking “OK”.




We have now added a message handler that calls the OnBrowse member function whenever the “Browse” button is clicked.

Click on “Edit Code”. The ClassWizard disappears and a source file window opens and displays the content of the OnBrowse function:

```
void CNeroFiddlesDlg::OnBrowse()
{
  // TODO: Add your control notification handler code here

}
```

Type the following after the line that starts with “TODO”. (To make things easier, you might as well copy it from here, if you obtained this document as a file.)

```
  static char BASED_CODE szFilter[] = "MP3 Files (*.mp3)|*.mp3|All Files
(*.*)|*.*||";
  CFileDialog dlgOpen(TRUE, NULL, NULL, OFN_FILEMUSTEXIST, szFilter,
this);
  if (dlgOpen.DoModal() == IDOK)
  {
    mstrPathName = dlgOpen.GetPathName();
    mstrFileName = dlgOpen.GetFileName();
    medtFileName.SetWindowText(mstrPathName);
    if (pndiDeviceInfos->nsdisNumDevInfos > 0)
    {
      mbtnBurn.EnableWindow(true);
    }
  }
```

This code defines a control string for our preferred file type, which is MP3. The string has to have a certain format so that it can be passed to the CFileDialog constructor. If the user clicks “OK” in the FileDialog, it will pass “IDOK” as return value. mstrPathName and mstrFileName now hold the selected file’s name, mstrPathName the full name, and mstrFileName the file name without path. Then the file name, including the path, is displayed in the Edit Box.

Afterwards, the functions checks whether any Devices have been enumerated during startup. If this is true, the Burn-button is enabled, otherwise it stays grayed.

(We could have mapped the Edit control to a string directly, but we are lazy and do not want to think too much. It is easier to keep track of everything, if we know that all controls map to control variables. Apart from that, we do not have to use the UpdateData function. But that is a completely different issue.)

### 6.6.2. OnBurn

This function is connected to the IDC_BURN button and is supposed to start the burn process later. We will now add it to our application.

Open the ClassWizard, select the “Message Maps” tab. “ClassName” should still be CNeroFiddlesDlg. Select IDC_BURN from “Object IDs” and “BN_CLICKED” from “Messages”. Click “Add Function” and accept the proposed function name, which is “OnBurn”, by clicking “OK”.

Click on “Edit Code”, and type the following after the line that starts with “TODO”. (The AppendString method will be introduced later.)

```
  if (mstrFileName == "")
  {
    AppendString("You have to choose a file before you can start
burning!");
  }
  else
  {
    strcpy(mniiFile.fileName, mstrFileName);
    strcpy(mniiFile.sourceFilePath, mstrPathName);
    mniiFile.isDirectory=FALSE;
    mniiFile.isReference=FALSE;
    mniiFile.nextItem=NULL;
    writeCD.nwcdpCDStamp=NULL;
    writeCD.nwcdArtist=NULL;
    writeCD.nwcdTitle=NULL;
    writeCD.nwcdCDExtra=FALSE;
    writeCD.nwcdNumTracks=0;
    writeCD.nwcdMediaType = MEDIA_CD;

    int i = mcbxDevices.GetCurSel();

    NERO_SCSI_DEVICE_INFO* nsdiDevice =
(NERO_SCSI_DEVICE_INFO*)mcbxDevices.GetItemDataPtr(i);
```

```
    ndhDeviceHandle = NeroOpenDevice(nsdiDevice);

    if (!ndhDeviceHandle)
    {
      AppendString("Device could not be opened: "+(CString)nsdiDevice-
>nsdiDeviceName);
    }
    else
    {
      mbtnAbort.EnableWindow(true);
      mCancel.EnableWindow(false);
      mOK.EnableWindow(false);
      mcbxDevices.EnableWindow(false);
      mbtnBrowse.EnableWindow(false);
      mbtnBurn.EnableWindow(false);
      mpgsProgress.SetRange(0,100);

      writeCD.nwcdIsoTrack = NeroCreateIsoTrackEx(&mniiFile,
"NeroFiddles", NCITEF_CREATE_ISO_FS|NCITEF_USE_JOLIET);

      int iRes = NeroBurn(ndhDeviceHandle, NERO_ISO_AUDIO_CD, &writeCD,
NBF_WRITE, 0, &npProgress);

      NeroFreeIsoTrack(writeCD.nwcdIsoTrack);
      NeroCloseDevice(ndhDeviceHandle);

      mbtnAbort.EnableWindow(false);
      mCancel.EnableWindow(true);
      mOK.EnableWindow(true);
      mcbxDevices.EnableWindow(true);
      mbtnBrowse.EnableWindow(true);
      mbtnBurn.EnableWindow(true);
      mpgsProgress.SetPos(0);
      mbAborted = false;

      char* Log = NeroGetErrorLog();
      AppendString(Log);
      NeroFreeMem(Log);

      switch(iRes)
      {
        case NEROAPI_BURN_OK:
          AppendString ("BurnCD() : burn successful");
          break;
        case NEROAPI_BURN_UNKNOWN_CD_FORMAT:
          AppendString ("BurnCD() : unknown CD format");
          break;
        case NEROAPI_BURN_INVALID_DRIVE:
          AppendString ("BurnCD() : invalid drive");
```

```
          break;
        case NEROAPI_BURN_FAILED:
          AppendString ("BurnCD() : burn failed");
          break;
        case NEROAPI_BURN_FUNCTION_NOT_ALLOWED:
          AppendString ("BurnCD() : function not allowed");
          break;
        case NEROAPI_BURN_DRIVE_NOT_ALLOWED:
          AppendString ("BurnCD() : drive not allowed");
          break;
            case NEROAPI_BURN_USER_ABORT:
          AppendString ("BurnCD() : user aborted");
          break;
            case NEROAPI_BURN_BAD_MESSAGE_FILE:
          AppendString ("BurnCD() : bad message file");
          break;
        default:
          AppendString ("BurnCD() : unknown error");
              break;
      }
    }
  }
}
```

You might have noticed that this code has few comments, to say the least. The author was not driven by laziness here, but rather wanted to prevent this tutorial from becoming monstrous. You will find source code comments in the NeroFiddles files that come with the *NeroAPI*. Here we will briefly explain what the code is supposed to do (and hopefully does).

First, the function checks whether or not the user had selected a file name by using the Browse button. If he did not, the function returns, doing nothing but adding an admonishing line to the message log.

If a file was selected, the NERO_ISO_ITEM structure mniiFile is filled and the NERO_WRITE_CD structure is initialized.

The index of the selected ComboBox entry is retrieved and used for getting a pointer to the respective NERO_SCSI_DEVICE_INFO, which is stored as a void-pointer. Therefore it needs to be casted.

Then the NERO_WRITE_CD structure is filled with the required information.

The function tries to open this device and store a handle in NeroDeviceHandle.

If the device handle is 0, meaning that the device could not be opened, a log line is added and the function returns.

If the device handle is valid, the nwcdIsoTrack member of NERO_WRITE_CD is assigned to a CNeroIsoTrack pointer.

The burn process is started. Burning is actually done and **not** simulated.

When the NeroBurn function returns, the ISO track is freed, and the device is closed.

The return value of the NeroBurn function is evaluated, and a corresponding line is added to the message log.

### 6.6.3. OnOK

When the application closes, we also need to properly disconnect from the NeroAPI.DLL. This means that we need to have handling-functions that intercept when the user clicks “OK” or “Cancel.

Open the ClassWizard and select the “Message Maps” tab. Select IDOK from “Object IDs” and “BN_CLICKED” from “Messages”. Click “Add Function” and accept the proposed function name, which is “OnOK”, by clicking “OK”.

Click on “Edit Code” and you will see this:

```
void CNeroFiddlesDlg::OnOK()
{
  // TODO: Add extra validation here

  CDialog::OnOK();
}
```

Type the following after the line that contains “TODO”.

```
NeroAPIFree();
```

### 6.6.4. OnCancel

Open the ClassWizard and select the “Message Maps” tab. Select IDCANCEL from “Object IDs” and “BN_CLICKED” from “Messages”. Click “Add Function” and accept the proposed function name, which is “OnCancel”, by clicking “OK”.

Change the function to look like this:

```
void CNeroFiddlesDlg::OnCancel()
{
  // TODO: Add extra cleanup here
  NeroAPIFree();

  CDialog::OnCancel();
}
```

### 6.6.5. OnAbort

If the “Abort” button is pressed while burning, the member variable “mbAborted” will be set to true. The value of mbAborted will be returned to the *NeroAPI* during Process- and Idle-callbacks. If it becomes “true”, the *NeroAPI* will stop the burn process.

Open the ClassWizard and select the “Message Maps” tab. Select IDC_ABORT from “Object IDs” and “BN_CLICKED” from “Messages”. Click “Add Function” and accept the proposed function name, which is “OnAbort”, by clicking “OK”.

Click on “Edit Code” and change the function to look like this:

```
void CNeroFiddlesDlg::OnAbort()
{
  // TODO: Add your control notification handler code here
  mbAborted = true;
}
```

## 6.7. Adding Utility Functions

### 6.7.1. NeroAPIInit

The initialization of the *NeroAPI* will be performed during OnInitDialog. However, there is a lot to do, so we will not add the code there, but rather create a function that initializes the API.

This function will be named NeroAPIInit. The first thing we need to do is adding a line in OnInitDialog to calls this function.

Open the CNeroFiddlesDlg tree in ClassView and locate “OnInitDialog”. Double click “OnInitDialog”.

You will now see the body of this function. Go right to the end of it, where you should find some code that looks like this:

```
// Set the icon for this dialog.  The framework does this automatically
//  when the application's main window is not a dialog
SetIcon(m_hIcon, TRUE);            // Set big icon
SetIcon(m_hIcon, FALSE);           // Set small icon

// TODO: Add extra initialization here

return TRUE;  // return TRUE  unless you set the focus to a control
```

In the line after “TODO” type “NeroAPIInit;”. That will call the - still non existing - function NeroAPIInit during initialization.

We will provide this function now.

Right click on CNeroFiddlesDlg and choose “Add Member Function”. Set the Function Type to “void” and the Function Declaration to “NeroAPIInit”. Click “OK”.

Visual Studio will add the function declaration, create the function body, and get you right into the function body. Fill the function with the following code:

```
mbAborted = false;

AppendString("Opening NeroAPI.DLL");

if (!NeroAPIGlueConnect (NULL)) {
  AppendString("Cannot open NeroAPI.DLL");
  return;
}

AppendString("Retrieving version information.");

WORD majhi, majlo, minhi, minlo;

NeroGetAPIVersionEx(&majhi, &majlo, &minhi, &minlo, NULL);

CString strVersion;
strVersion.Format("Nero API version %d.%d.%d.%d",
                  majhi, majlo, minhi, minlo);

AppendString(strVersion);


AppendString("Filling NERO_SETTINGS structure");

strcpy(pcNeroFilesPath, "NeroFiles");
strcpy(pcVendor, "ahead");
strcpy(pcSoftware, "Nero - Burning Rom");
strcpy(pcLanguageFile, "Nero.txt");

memset(&nsSettings, 0, sizeof(nsSettings));
nsSettings.nstNeroFilesPath = pcNeroFilesPath;
nsSettings.nstVendor = pcVendor;
nsSettings.nstIdle.ncCallbackFunction = IdleCallback;
nsSettings.nstIdle.ncUserData = this;
nsSettings.nstSoftware = pcSoftware;
nsSettings.nstUserDialog.ncCallbackFunction = UserDialog;
nsSettings.nstUserDialog.ncUserData = this;
nsSettings.nstLanguageFile =pcLanguageFile;

memset(&npProgress, 0, sizeof(npProgress));
npProgress.npAbortedCallback = AbortedCallback;
npProgress.npAddLogLineCallback = AddLogLine;
npProgress.npDisableAbortCallback = NULL;
npProgress.npProgressCallback = ProgressCallback;
```

```
  npProgress.npSetPhaseCallback = SetPhaseCallback;
  npProgress.npSetMajorPhaseCallback=NULL;
  npProgress.npSubTaskProgressCallback=NULL;
  npProgress.npUserData = this;

  pndiDeviceInfos = NULL;

  NEROAPI_INIT_ERROR initErr;
  initErr = NeroInit (&nsSettings, NULL);

  switch (initErr)
  {
    case NEROAPI_INIT_OK:
      AppendString("Initialization of the NeroAPI successful.");
      break;
    case NEROAPI_INIT_INVALID_ARGS:
      AppendString("The arguments are not valid.");
      break;
    case NEROAPI_INIT_INVALID_SERIAL_NUM:
      AppendString("The Serial Number is not valid.");
      break;
    default:
      AppendString("An error occured. The type of error cannot be
determined.");
      break;
  }

  pndiDeviceInfos = NeroGetAvailableDrivesEx (MEDIA_CD, NULL);

  if (!pndiDeviceInfos) {
    AppendString("NeroGetAvailableDrives() returned no available
devices.");
  }
  else
  {
    if (pndiDeviceInfos->nsdisNumDevInfos > 0)
    {
      AppendString("Found the following devices:");
      for (DWORD dDeviceCounter = 0; dDeviceCounter < pndiDeviceInfos-
>nsdisNumDevInfos; dDeviceCounter++)
      {
        AppendString(pndiDeviceInfos-
>nsdisDevInfos[dDeviceCounter].nsdiDeviceName);

        int i = mcbxDevices.AddString(pndiDeviceInfos->
nsdisDevInfos[dDeviceCounter].nsdiDeviceName);

        mcbxDevices.SetItemDataPtr(i, &pndiDeviceInfos-
>nsdisDevInfos[dDeviceCounter]);
      }
```

```
      mcbxDevices.SelectString(-1, pndiDeviceInfos-
>nsdisDevInfos[0].nsdiDeviceName);
    }
    else
    {
      AppendString("The number of available devices is 0.");
    }
  }
```

The NERO_SETTINGS and NERO_PROGRESS structures are initialized and then filled with pointers to callback functions and the this-pointer.

The result of the call to NeroInit is evaluated and added to the message log.

Then the available drives are added to the Devices-ComboBox, linking each entry with a pointer to a NERO_SCSI_DEVICE_INFO.

### 6.7.2. NeroAPIFree

This function disconnects NeroFiddles from the *NeroAPI* and is called when our application closes.

Right click on CNeroFiddlesDlg and choose “Add Member Function”. Set the Function Type to “void” and the Function Declaration to “NeroAPIFree”. Click “OK”.

Visual Studio will add the function declaration, create the function body and set the cursor to the function body. Fill the function with the following code:

```
  if (pndiDeviceInfos)
  {
    NeroFreeMem(pndiDeviceInfos);
  }

  NeroClearErrors();
  if(NeroDone())
  {
        AfxMessageBox("Detected memory leaks in NeroFiddles");
  }

  NeroAPIGlueDone();

  return;
```

### 6.7.3. AppendString

Right click on CNeroFiddlesDlg and choose “Add Member Function”. Set the Function Type to “void” and the Function Declaration to “AppendString (CString str)”. Click “OK”.

Fill the function with the following code:

```
CString   strBuffer;

medtMessages.GetWindowText (strBuffer);
if (!strBuffer.IsEmpty())
{
   strBuffer += "\r\n";
}
strBuffer += str;
medtMessages.SetWindowText (strBuffer);

medtMessages.LineScroll (medtMessages.GetLineCount(), 0);
```

## 6.8. Adding Callback Functions

The one remarkable thing about the use of the callback functions is the this-pointer.

The ncUserData member of the NERO_CALLBACK structure is supposed to hold a pointer to the calling object in a C++ environment. We filled that pointer with a dummy value in the console applications, because there is no such pointer when you are not using classes and objects.

For NeroFiddles it is vital, though. If we do not hand over that pointer to the *NeroAPI* and retrieve it in our callback functions, we will not be able to access any non-static member of our CNeroFiddlesDlg class. This would mean that we could not update the progress bar or print messages, which is a must.

We set the this-pointer during NeroAPIInit:

```
nsSettings.nstUserDialog.ncUserData = this;
```

The *NeroAPI* stores the pointer, and what we need to do is retrieve it. It is handed over to our callback functions as void* pUserData. We have to cast it to a CNeroFiddlesDlg pointer. The usage looks like this:

```
bool bSomeBooleanVariable = ((CNeroFiddlesDlg*)pUserData)->mbAborted;
```

### 6.8.1. IdleCallback

IdleCallback will be called continuously during a burn process. If the user clicked the “Abort” button, mbAborted becomes true, and the API will be told to stop burning.

Use the known ClassView approach to add a member function. Set the Function Type to “BOOL NERO_CALLBACK_ATTR” and the Function Declaration to “ IdleCallback (void *pUserData)”. Activate the “static” Checkbox.

Now change the function body to this:

```
BOOL NERO_CALLBACK_ATTR CNeroFiddlesDlg::IdleCallback(void *pUserData)
{
  static MSG msg;
  while (!(((CNeroFiddlesDlg*)pUserData)->mbAborted) &&
::PeekMessage(&msg,NULL,NULL,NULL,PM_NOREMOVE))
  {
    if (!AfxGetThread()->PumpMessage())
    {
      break;
    }
  }
  return ((CNeroFiddlesDlg*)pUserData)->mbAborted;
}
```

The first part of the function ensures that, while Nero is burning, the application still can process messages.

### 6.8.2. UserDialog

The UserDialog callback function is designed to let the user make a choice, or tell the *NeroAPI* that the user had finished a task, which the *NeroAPI* required him to perform. To keep the sample as small as possible, we will only provide user-controlled handling where absolutely required.

Add a member function of Function Type “NeroUserDlgInOut NERO_CALLBACK_ATTR” and make the Function Declaration “ UserDialog (void *pUserData, NeroUserDlgInOut type, void *data)”. Activate the “static” Checkbox.

Make the function body look like this:

```
NeroUserDlgInOut NERO_CALLBACK_ATTR CNeroFiddlesDlg::UserDialog(void
*pUserData, NeroUserDlgInOut type, void *data)
{
  switch (type)
  {
    case DLG_AUTO_INSERT:
      return DLG_RETURN_CONTINUE;
      break;
    case DLG_DISCONNECT_RESTART:
      return DLG_RETURN_ON_RESTART;
      break;
    case DLG_DISCONNECT:
      return DLG_RETURN_CONTINUE;
      break;
    case DLG_AUTO_INSERT_RESTART:
      return DLG_RETURN_EXIT;
      break;
```

```
    case DLG_RESTART:
      return DLG_RETURN_EXIT;
      break;
    case DLG_SETTINGS_RESTART:
      return DLG_RETURN_CONTINUE;
      break;
    case DLG_OVERBURN:
      return DLG_RETURN_TRUE;
      break;
    case DLG_AUDIO_PROBLEMS:
      return DLG_RETURN_EXIT;
      break;
    case DLG_FILESEL_IMAGE:
      {
        static char BASED_CODE szFilter[] = "Image Files
(*.nrg)|*.nrg|All Files (*.*)|*.*||";

        CFileDialog dlgOpen(TRUE, NULL, "test.nrg", OFN_OVERWRITEPROMPT,
szFilter, ((CNeroFiddlesDlg*)pUserData));

        if (dlgOpen.DoModal() == IDOK)
        {
          strcpy((char*)data,dlgOpen.GetPathName());
          return DLG_RETURN_TRUE;
        }
        else
        {
          return DLG_BURNIMAGE_CANCEL;
        }
      }
      break;
    case DLG_WAITCD:
    {
      NERO_WAITCD_TYPE waitcdType = (NERO_WAITCD_TYPE) (int)data;
        char *waitcdString = NeroGetLocalizedWaitCDTexts (waitcdType);
      ((CNeroFiddlesDlg*)pUserData)->AppendString(waitcdString);
        NeroFreeMem(waitcdString);
      return DLG_RETURN_EXIT;
      break;
    }
    default:
      break;
  }
  return DLG_RETURN_EXIT;
}
```

### 6.8.3. ProgressCallback

The ProgressCallback function will provide information on how much of the current process has been completed. We use this information for display in a progress bar.

Add a member function of Function Type “BOOL NERO_CALLBACK_ATTR” and make the Function Declaration “ProgressCallback (void *pUserData, DWORD dwProgressInPercent)”. Activate the “static” Checkbox.

Make the function body look like this:

```
BOOL NERO_CALLBACK_ATTR CNeroFiddlesDlg::ProgressCallback(void
*pUserData, DWORD dwProgressInPercent)
{
  ((CNeroFiddlesDlg*)pUserData)->
mpgsProgress.SetPos(dwProgressInPercent);
  return ((CNeroFiddlesDlg*)pUserData)->mbAborted;
}
```

### 6.8.4. AbortedCallback

This function is used by the *NeroAPI* to check whether the current process is supposed to be terminated.

Add a member function of Function Type “BOOL NERO_CALLBACK_ATTR” and make the Function Declaration “AbortedCallback(void *pUserData)”. Activate the “static” Checkbox.

Make the function body look like this:

```
BOOL NERO_CALLBACK_ATTR CNeroFiddlesDlg::AbortedCallback(void*
                                                          pUserData)
{
  return ((CNeroFiddlesDlg*)pUserData)->mbAborted;
}
```

### 6.8.5. AddLogLine

This function provides textual information about certain states that might be important for the application.

Add a member function of Function Type “void NERO_CALLBACK_ATTR” and make the Function Declaration “AddLogLine(void *pUserData, NERO_TEXT_TYPE type, const char *text)”. Activate the “static” Checkbox.

Make the function body look like this:

```
void NERO_CALLBACK_ATTR CNeroFiddlesDlg::AddLogLine(void *pUserData,
NERO_TEXT_TYPE type, const char *text)
{
  CString csTemp(text);
  ((CNeroFiddlesDlg*)pUserData)->AppendString("Log line:" + csTemp);
  return;
}
```

### 6.8.6. SetPhaseCallback

This function provides textual information about the current phase of the burning process.

Add a member function of Function Type “void NERO_CALLBACK_ATTR ” and make the Function Declaration “ SetPhaseCallback(void *pUserData, const char *text)”. Activate the “static” Checkbox.

Make the function body look like this:

```
void NERO_CALLBACK_ATTR CNeroFiddlesDlg::SetPhaseCallback(void
*pUserData, const char *text)
{
  CString csTemp(text);
  ((CNeroFiddlesDlg*)pUserData)->AppendString("Phase: " + csTemp);
  return;
}
```

## 6.9. Build And Run NeroFiddles

We’re almost done. We have added everything that is required; now choose “Build/Rebuild All” from the menu and then “Build/Execute NeroFiddles.exe”.

If we did everything right, NeroFiddles should now be running.

NeroFiddles is almost screaming for additional functionality. You should check the command line examples, and get ideas there. E.g. you could enable it to burn more than one file or complete folders. You could complete the user-interaction part and provide burning of different formats.

You could provide RadioButtons to toggle between simulation of the burn process and actual burning. Also, you could add the “continue session” feature.

# 7. API Types and Functions

This paragraph describes the interface to the *NeroAPI* DLL.

## 7.1. Types

### 7.1.1. NERO_ABORTED_CALLBACK

TRUE indicates that the user wants to abort.

```
typedef BOOL  (NERO_CALLBACK_ATTR *NERO_ABORTED_CALLBACK)
(void *pUserData);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_ABORTED_CALLBACK | 5.0.3.9 |

### 7.1.2. NERO_ACCESSTYPE

This type is used when querying the available speeds for reading or writing with the NeroGetAvailableSpeeds function.

```
typedef enum
{
   ACCESSTYPE_WRITE,
   ACCESSTYPE_READ
} NERO_ACCESSTYPE;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_ACCESSTYPE | 5.5.9.14 |

### 7.1.3. NERO_ADD_LOG_LINE_CALLBACK

A one-line text to be displayed. The text pointer becomes invalid after returning from this function.

```
typedef void  (NERO_CALLBACK_ATTR *NERO_ADD_LOG_LINE_CALLBACK)
(void *pUserData, NERO_TEXT_TYPE type, const char *text);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_ADD_LOG_LINE_CALLBACK | 5.0.3.9 |

### 7.1.4. NERO_AUDIO_FORMAT_INFO

A pointer to a variable of this type is returned by the NeroAudioGetFormatInfo function.

```
typedef struct tagNERO_AUDIO_FORMAT_INFO
{
      char  nafiDescription[256],
            nafiExtList[256];
      BOOL  nafiTgt,
            nafiConfigurable;
}     NERO_AUDIO_FORMAT_INFO;
```

| Description of structure members | |
|---|---|
| nafiDescription[256] | A description, e.g. "RIFF PCM WAV format". |
| nafiExtList[256]; | A list, e.g. "wav,wave,riff" |
| nafiTgt | Contains TRUE if this is a target plug-in. |
| nafiConfigurable | ConfigureItem will fail on items of this type if this member equals to false. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_AUDIO_FORMAT_INFO | 5.5.9.8 |

### 7.1.5. NERO_AUDIO_ITEM_INFO

This type is used as a member of the NERO_DATA_EXCHANGE struct.

```
typedef struct tagNERO_AUDIO_ITEM_INFO
{
  NERO_AUDIO_ITEM_HANDLE     naiiAudioItem;
  const char                 *naiiFileName;
} NERO_AUDIO_ITEM_INFO;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_AUDIO_ITEM_INFO | 5.5.9.14 |

### 7.1.6. NERO_AUDIO_ITEM_HANDLE

This handle is returned by the NeroAudioCreateTargetItem helper function. NERO_AUDIO_ITEM_INFO contains a NERO_AUDIO_ITEM_HANDLE member.

```
typedef void * NERO_AUDIO_ITEM_HANDLE;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_AUDIO_ITEM_HANDLE | 5.5.9.14 |

### 7.1.7. NERO_AUDIO_TRACK

NERO_AUDIO_TRACK is used as member of the NERO_WRITE_CD struct.

```
typedef struct tag_NERO_AUDIO_TRACK
{
      DWORD natPauseInBlksBeforeThisTrack;
      DWORD natNumIndexPositions;
      DWORD natRelativeIndexBlkPositions[98];
      const char *natTitle, *natArtist;
      NERO_DATA_EXCHANGE natSourceDataExchg;
      DWORD natLengthInBlocks;
      BOOL  natIndex0ContainsData;
      DWORD natReserved[31];
} NERO_AUDIO_TRACK;
```

| Description of structure members | |
|---|---|
| natPauseInBlksBeforeThisTrack | Pause in blocks before this track. |
| natNumIndexPositions | Number of index positions. |
| natRelativeIndexBlkPositions | Offsets between one index position and the next one. |
| natTitle | Set to NULL if unknown or to be taken from source. |
| natArtist | Set to NULL if unknown or to be taken from source. |
| natSourceDataExchg | Contains information about the type of data exchange (file, callback, audio item). |
| natLengthInBlocks | Only used for NERO_IO_CALLBACK. |
| natReserved | Should be zero. |
| natIndex0ContainsData | TRUE, if audio data shall be written into index 0. Data for index 0 must be provided. This can be used to prevent silent pauses between tracks. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_AUDIO_TRACK | 5.0.3.9 |
| natIndex0ContainsData | 5.5.9.8 |
| natReserved | 5.5.9.8:<br>Size decreased from 32 to 31 |

### 7.1.8. NERO_CALLBACK

Actually, this is a pointer to one of several different callback functions defined below. ncUserdata will be passed to the function as first parameter when it is called by the *NeroAPI*.

A callback function is an interface to another software to notify your application of changes. Windows makes extensive use of callback functions.

Data exchange between an application and *NeroAPI* is done with a function that gets a pointer to its own structure, a buffer pointer, and the amount of bytes to be read or written. It shall return the actual amount of bytes transferred. Other functions indicate that the end of the file has been reached (EOF) when reading, or that a serious error occurred.

```
typedef struct tag_NERO_CALLBACK
{
  void *ncCallbackFunction;
  void *ncUserData
} NERO_CALLBACK;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_CALLBACK | 5.0.3.9 |

### 7.1.9. NERO_CD_FORMAT

Used in the NeroBurn function to determine the format that will be written on the media.

```
typedef enum
{
  NERO_ISO_AUDIO_MEDIA             =0,
  NERO_VIDEO_CD                    =1,
  NERO_BURN_IMAGE_MEDIA            =2,
  NERO_FREESTYLE_CD                =3,
  NERO_FILE_SYSTEM_CONTAINER_MEDIA =4,

  NERO_ISO_AUDIO_CD                =0,
  NERO_BURN_IMAGE_CD               =2
} NERO_CD_FORMAT;
```

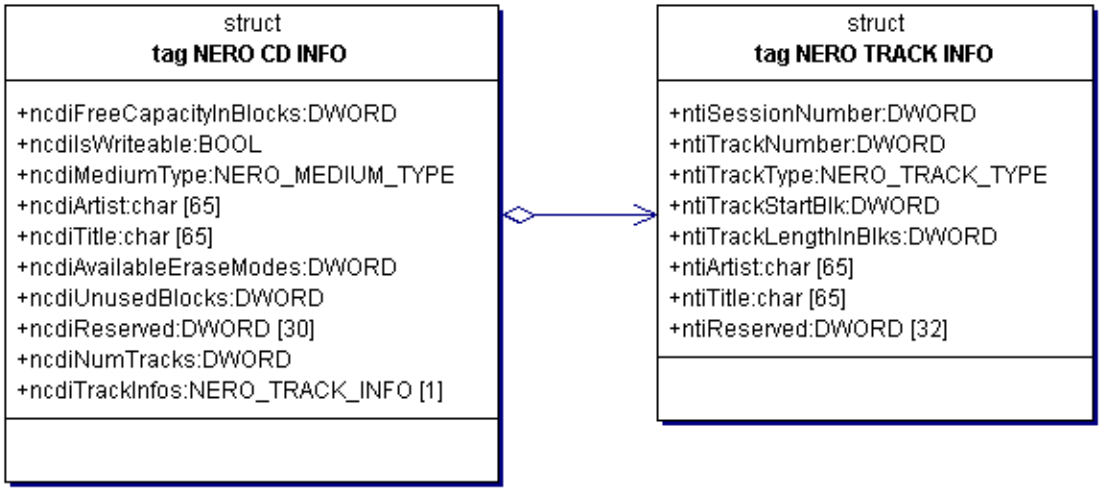
| Description of enumerators | |
|---|---|
| NERO_ISO_AUDIO_MEDIA | Burn either a CD or a DVD, depending on the nwcdMediaType member. |
| NERO_VIDEO_CD | |
| NERO_BURN_IMAGE_MEDIA | Burn either a CD or a DVD from an image. |
| NERO_FREESTYLE_CD | For a Freestyle compilation. |

| Description of enumerators | |
|---|---|
| NERO_FILE_SYSTEM_ CONTAINER_MEDIA | Burn an IfileSystemDescContainer. |
| NERO_ISO_AUDIO_CD | Audio or ISO CD. Available only for compatibility reasons. |
| NERO_BURN_IMAGE_CD | CD Type determined by content of CD Image. Available only for compatibility reasons. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_CD_FORMAT | 5.0.3.9 |
| NERO_FILE_SYSTEM_CONTAINER_MEDIA | 5.5.6.0 |

### 7.1.10. NERO_CD_INFO

This type is returned by the NeroGetCDInfo function and provides detailed information about the current media.




```
typedef struct tag_NERO_CD_INFO
{
      DWORD              ncdiFreeCapacityInBlocks;
      BOOL               ncdiIsWriteable;
      NERO_MEDIUM_TYPE   ncdiMediumType;
      char               ncdiArtist[65];
      char               ncdiTitle[65];
      DWORD              ncdiAvailableEraseModes;
      DWORD              ncdiUnusedBlocks;
      NERO_MEDIA_TYPE    ncdiMediaType;
      DWORD              ncdiReserved[29];
      DWORD              ncdiNumTracks;
      NERO_TRACK_INFO    ncdiTrackInfos[1];
} NERO_CD_INFO;
```

| Description of structure members | |
|---|---|
| ncdiFreeCapacityInBlocks | Number of unused blocks on CD. |
| ncdiIsWriteable | A disc can be non-writeable. |
| ncdiMediumType | Old media type description, ncdiMediaType should be used instead. |
| ncdiArtist | Artist name. |
| ncdiTitle | CD Title. |
| ncdiAvailableEraseModes | This bitfield can be decoded using the NCDI_IS_ERASE_MODE_AVAILABLE macro. |
| ncdiUnusedBlocks | Difference beetween Lead-Out position and last possible Lead-Out position. |
| ncdiMediaType | Type of media. |
| ncdiReserved | Should be zero. |
| ncdiNumTracks | Number of tracks. |
| ncdiTrackInfos | A List of NERO_TRACK_INFO structures. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_CD_INFO | 5.0.3.9 |
| ncdiAvailableEraseModes | 5.5.4.7 |
| ncdiUnusedBlocks | 5.5.5.8 |
| ncdiMediaType | 5.5.9.4 |
| ncdiReserved | 5.5.9.4:<br>Reduced size from 30 to 29. |

### 7.1.11. NERO_CITE_ARGS

This struct can be used to pass additional parameters to NeroCreateIsoTrackEx, in certain cases, e.g.

- if a CD shall have two different filesystems (e.g. HFS+ CDs), you can provide the second filesystem with firstRootItem_wrapper.
- if you intend to pass information to be written to the volume descriptor

```
typedef struct tag_NERO_CITE_ARGS {
      int size;
      NERO_ISO_ITEM *firstRootItem;
      NERO_ISO_ITEM *firstRootItem_wrapper;
      const char    *name;
      DWORD          dwBurnOptions;

      const char    *systemIdentifier;
      const char    *volumeSet;
      const char    *publisher;
      const char    *dataPreparer;
      const char    *application;
      const char    *copyright;
      const char    *abstract;
      const char    *bibliographic;
} NeroCITEArgs;
```

| Description of structure members | |
|---|---|
| Size | This parameter will be ignored. Initialise the whole struct with 0. The version of the struct will be taken from the expected version of NeroAPI. |
| firstRootItem | If firstRootItem_wrapper is NULL, then firstRootItem is identical to NeroCreateIsoTrackEx's rootItem. |
| firstRootItem_wrapper | Used to create a wrapper file system. One file system can be embedded in another. Depending on the capabilities of a particular system, the one that can be read will be visible.<br>Unlike the UDF/ISO bridge, both file systems can contain different files, so two pointers to root items are required. |
| Name | Name of the IsoTrack (volume name). |
| dwBurnOptions | The same options as used by the NeroCreateIsoTrackEx function. |
| systemIdentifier | System identifier. |
| volumeSet | This name is used when multiple media are part of one logical unit. |
| Publisher | The publisher of this track. |
| dataPreparer | The preparer of this track. |
| application | The application, that created this track. |
| Copyright | Copyright file. |
| Abstract | Abstract file. |
| bibliographic | Bibliographic file. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCITEArgs | 5.5.9.0 |
| systemIdentifier | 5.5.9.26 |
| volumeSet | 5.5.9.26 |
| Publisher | 5.5.9.26 |
| dataPreparer | 5.5.9.26 |
| application | 5.5.9.26 |
| Copyright | 5.5.9.26 |
| Abstract | 5.5.9.26 |
| bibliographic | 5.5.9.26 |
| NERO_CITE_ARGS | 6.0.0.0<br>NeroCITEArgs was renamed to NERO_CITE_ARGS. |

### 7.1.12. NERO_CONFIG_RESULT

This is the return type for the NeroAudioGUIConfigureItem function.

```
typedef enum
{
  NCR_CANNOT_CONFIGURE,
  NCR_CHANGED,
  NCR_NOT_CHANGED
} NERO_CONFIG_RESULT;
```

| Description of enumerators | |
|---|---|
| NCR_CANNOT_CONFIGURE | The item cannot be configured. |
| NCR_CHANGED | The configuration has been changed. |
| NCR_NOT_CHANGED | The configuration has not been changed. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_CONFIG_RESULT | 5.5.9.8 |

### 7.1.13. NERO_DATA_EXCHANGE

Use PCM, 44.1kHz, Stereo (left channel first), 16 bits per channel, Little Endian Word (LSB first), when exchanging data with the *NeroAPI*.

```
typedef struct tag_NERO_DATA_EXCHANGE
{
  NERO_DATA_EXCHANGE_TYPE ndeType;
  union
  {
    char      ndeFileName[256];
    struct
    {
       DWORD       reserved;
       const char  *ptr;
    } ndeLongFileName;

    NERO_IO   ndeIO;
    NERO_AUDIO_ITEM_INFO     ndeAudioItemInfo;
  } ndeData;
} NERO_DATA_EXCHANGE;
```

| Description of structure members | |
|---|---|
| ndeFileName | Deprecated, use ndeLongFileName.ptr instead. |
| ndeLongFileName.reserved | Must be 0. |
| ndeIO | NERO_IO/EOF/ERROR_CALLBACK, data is exchanged with the application directly. |
| ndeAudioItemInfo | NERO_ET_AUDIO_FILE, data is exchange through audio items, using the plug-in manager. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DATA_EXCHANGE | 5.0.3.9 |
| ndeAudioItemInfo | 5.5.9.8 |
| ndeLongFileName | 6.0.0.0 |

### 7.1.14. NERO_DATA_EXCHANGE_TYPE

This enum is used as a member of the NERO_DATA_EXCHANGE struct.

```
typedef enum
{
  NERO_ET_FILE,
  NERO_ET_IO_CALLBACK,
  NERO_ET_MP3,
  NERO_ET_FILE_RAW,
  NERO_ET_AUDIO_FILE
} NERO_DATA_EXCHANGE_TYPE;
```

| Description of enumerators | |
|---|---|
| NERO_ET_FILE | Read/write to/from WAV file. |
| NERO_ET_IO_CALLBACK | Exchange data with application directly. |
| NERO_ET_MP3 | Read from MP3 file (not for DAE). |
| NERO_ET_WMA | Read from MS audio file (not for DAE). |
| NERO_ET_FILE_RAW | For a Freestyle compilation, this and NERO_ET_IO_CALLBACK are the only types allowed at the moment. It will expect files to be in the format as to be written to the disc. This exchange type is valid for freestyle compilations only. |
| NERO_ET_AUDIO_FILE | Audio file created with the plug-in manager. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DATA_EXCHANGE_TYPE | 5.0.3.9 |
| NERO_ET_AUDIO_FILE | 5.5.9.8 |

### 7.1.15. NERO_DEVICEHANDLE

Is defined as a class pointer for C++ or a void pointer for standard C.

The __cplusplus preprocessor macro determines whether C++ or C is being compiled. This macro is predefined and gives the programmer the opportunity to use more sophisticated C++ constructs where possible, or substitute them with standard C where not.

```
#ifdef  __cplusplus
class CRecorderInfo;
typedef CRecorderInfo *NERO_DEVICEHANDLE;
#else
typedef void *NERO_DEVICEHANDLE;
#endif
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DEVICEHANDLE | 5.0.3.9 |

### 7.1.16. NERO_DISABLE_ABORT_CALLBACK

Tells the main program whether the burn process can be interrupted or not.

```
typedef void (NERO_CALLBACK_ATTR *NERO_DISABLE_ABORT_CALLBACK)(void
*pUserData,BOOL abortEnabled);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DISABLE_ABORT_CALLBACK | 5.0.3.9 |

### 7.1.17. NERO_DEVICEOPTION

Used to get and set special low level options of devices.

```
typedef enum
{
  NERO_DEVICEOPTION_BOOKTYPE_DVDROM = 0
} NERO_DEVICEOPTION;
```

| Description of enumerators | |
|---|---|
| NERO_DEVICEOPTION_ BOOKTYPE_DVDROM | Change the booktype of a DVD+R and DVD+RW for subsequent writes until next power cycle to DVD-ROM. When used in NeroGetDeviceOption or NeroSetDeviceOption void* is a pointer to BOOL.<br>For setting the booktype to DVD-ROM, set the parameter to TRUE, to reset make it FALSE.<br>In NeroGetDeviceOption, TRUE is returned if changing the booktype to DVD-ROM is enabled for both DVD+R and DVD+RW, FALSE otherwise. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DEVICEOPTION | 5.5.10.7 |

### 7.1.18. NERO_DLG_WAITCD_MEDIA_INFO

A pointer to this structure will be passed with the DLG_WAITCD_MEDIA_INFO user dialog callback.

```
typedef struct
{
      DWORD ndwmiSize;
      NERO_MEDIA_TYPE   ndwmiLastDetectedMedia;
      NERO_MEDIA_SET    ndwmiRequestedMedia;
      const char *ndwmiLastDetectedMediaName;
      const char *ndwmiRequestedMediaName;
} NERO_DLG_WAITCD_MEDIA_INFO;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DLG_WAITCD_MEDIA_INFO | 5.5.9.4 |

### 7.1.19. NERO_DRIVE_ERROR

Error code describing an error happened during communication with a drive.

This error code is returned by NeroIsDeviceReady. Other functions set an internal error variable to one of these codes if an error occured. This error can be received with NeroGetLastDriveError.

```
typedef enum
{
   NDE_NO_ERROR  = 0,
   NDE_GENERIC_ERROR = 1,
   NDE_DRIVE_IN_USE = 2,
   NDE_DRIVE_NOT_READY = 3,
   NDE_NO_DRIVE = 4,
   NDE_DISC_NOT_PRESENT = 5,
   NDE_DISC_NOT_PRESENT_TRAY_OPEN = 6,
   NDE_DISC_NOT_PRESENT_TRAY_CLOSED = 7
} NERO_DRIVE_ERROR;
```

| Description of structure members | |
|---|---|
| NDE_NO_ERROR | No error occured/ drive is ready. |
| NDE_GENERIC_ERROR | Error, not handled with other enums. |
| NDE_DRIVE_IN_USE | Drive cannot be locked, maybe a other application uses this drive at the moment. |
| NDE_DRIVE_NOT_READY | Drive is not ready. |
| NDE_NO_DRIVE | The given device is not available. Probably removed by the user (USB/Firewire). |
| NDE_DISC_NOT_PRESENT | No medium in drive, status of tray unknown. |
| NDE_DISC_NOT_PRESENT_ TRAY_ | No medium - tray open. |
| NDE_DISC_NOT_PRESENT_ TRAY_CLOSED | No medium - tray closed. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DRIVE_ERROR | 6.0.0.0 |

### 7.1.20. NERO_DRIVESTATUS_CALLBACK

This callback informs the application about a drive's status change.

Note: The callback needs to be thread safe, since it might be called from a different thread.

```
typedef void  (NERO_CALLBACK_ATTR *NERO_DRIVESTATUS_CALLBACK)(
                                        int hostID,
                                        int targetID,
                                        NERO_DRIVESTATUS_RESULT result,
                                        void *pUserData);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DRIVESTATUS_CALLBACK | 6.0.0.0 |

### 7.1.21. NERO_DRIVESTATUS_TYPE

This enum is used by the NeroRegisterDriveStatusCallback callback.

```
typedef enum
{
   NDT_DISC_CHANGE,
   NDT_IN_USE_CHANGE
} NERO_DRIVESTATUS_TYPE;
```

| Description of enumerators | |
|---|---|
| NDT_DISC_CHANGE | The disc in the drive has been changed.<br>Warning: This change notification is based on Windows notifying about medium changes. If an application has disabled this notification, the callback will not be called. If you want to be sure to recognize all medium changes, you should use timer events and use NeroIsDeviceReady to ask for the drive status. |
| NDT_IN_USE_CHANGE | The in-use status of the drive has been changed. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DRIVESTATUS_TYPE | 6.0.0.0 |

### 7.1.22. NERO_DRIVESTATUS_RESULT

This enumeration is used by NERO_DRIVESTATUS_CALLBACK.

```
typedef enum
{
   NDR_DRIVE_IN_USE=0,
   NDR_DRIVE_NOT_IN_USE,
   NDR_DISC_REMOVED,
   NDR_DISC_INSERTED,
   NDR_DRIVE_REMOVED,
   NDR_DRIVE_ADDED
} NERO_DRIVESTATUS_RESULT;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_DRIVESTATUS_RESULT | 6.0.0.0 |

### 7.1.23. NERO_FREESTYLE_TRACK

This type is used as a member of NERO_WRITE_FREESTYLE_CD.

```
typedef struct tag_NERO_FREESTYLE_TRACK
{
  DWORD nftStructureSize;
  DWORD nftPauseInBlksBeforeThisTrack;
  DWORD nftNumIndexPositions;
  DWORD nftRelativeIndexBlkPositions[98];
  const char *nftTitle, *nftArtist;
  NERO_DATA_EXCHANGE nftSourceDataExchg;
  DWORD nftLengthInBlocks;
  NERO_TRACKMODE_TYPE nftTracktype;
} NERO_FREESTYLE_TRACK;
```

| Description of structure members | |
|---|---|
| nftStructureSize | Size of this structure, to ensure binary compatibility. |
| nftPauseInBlksBeforeThisTrack | Pause in blocks before this track. |
| nftNumIndexPositions | Number of index positions. |
| nftRelativeIndexBlkPositions[98] | Offsets between one index position and the next one. |
| nftTitle | Set to NULL if unknown or to be taken from source. |
| nftArtist | Set to NULL if unknown or to be taken from source. |
| nftSourceDataExchg | Source for raw track data. |
| nftLengthInBlocks | Only used for NERO_IO_CALLBACK. |
| nftTracktype | Specifies track type to be written. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_FREESTYLE_TRACK | 5.0.3.9 |

### 7.1.24. NERO_IDLE_CALLBACK

During writing, or in several long running functions, control is transferred to the DLL. The application has to provide services and interact with the user via callback functions.

NERO_CALLBACK_ATTR is defined in "NeroUserDialog.h" and ensures that the same conventions are used for passing of parameters. NERO_IDLE_CALLBACK is called regularly during long running activities. Return TRUE if this activity shall be aborted.

```
typedef BOOL (NERO_CALLBACK_ATTR *NERO_IDLE_CALLBACK) (void *pUserData);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_IDLE_CALLBACK | 5.0.3.9 |

### 7.1.25. NERO_IMPORT_DATA_TRACK_INFO

This structure is used as a parameter for the NeroImportDataTrack function.

```
typedef struct tag_NERO_IMPORT_DATA_TRACK_INFO
{
  DWORD nidtiSize;
  char *nidtipVolumeName;
} NERO_IMPORT_DATA_TRACK_INFO;
```

| Description of structure members | |
|---|---|
| nidtiSize | Must contain the size of the structure. |
| nidtipVolumeName | This must be released using NeroFreeMem. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_IMPORT_DATA_TRACK_INFO | 6.0.0.0 |

### 7.1.26. NERO_IMPORT_DATA_TRACK_RESULT

This enum is used as result parameter for the NeroImportDataTrack function.

```
typedef enum
{
      NIDTR_NO_ERROR=0,
      NIDTR_GENERIC_ERROR,
      NIDTR_DRIVE_ERROR,
      NIDTR_READ_ERROR,
      NIDTR_INVALID_FS
} NERO_IMPORT_DATA_TRACK_RESULT;
```

| Description of enumerators | |
|---|---|
| NIDTR_NO_ERROR | No error. |
| NIDTR_GENERIC_ERROR | Undefined error. |
| NIDTR_DRIVE_ERROR | Get more details with NeroGetLastDriveError. |
| NIDTR_READ_ERROR | Error while reading from the disc. Parts of the filesystem may have been imported nevertheless. |
| NIDTR_INVALID_FS | Errors in the filesystem on the disc. Parts of the filessystem may have been imported nevertheless. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_IMPORT_DATA_TRACK_RESULT | 6.0.0.0 |

### 7.1.27. NERO_IO

NERO_IO is requrired when the *NeroAPI* exchanges data with the application directly. NERO_IO is used as member of the NERO_DATA_EXCHANGE struct.

```
typedef struct tag_NERO_IO
{
  void  *nioUserData;
  NERO_IO_CALLBACK  nioIOCallback;
  NERO_STATUS_CALLBACK  nioEOFCallback;
  NERO_STATUS_CALLBACK  nioErrorCallback;
} NERO_IO;
```

| Description of structure members | |
|---|---|
| nioUserData | Provide the this-pointer here. |
| nioIOCallback | See declaration of NERO_IO_CALLBACK. |
| nioEOFCallback | Shall return TRUE if further IO calls will always fail to transfer any data, i.e. EOF reached. |
| nioErrorCallback | Shall return TRUE if an error occurred during an IO call. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_IO | 5.0.3.9 |

### 7.1.28. NERO_IO_CALLBACK

Data exchange between an application and the *NeroAPI* is done with a function that gets a pointer to its own structure, a buffer pointer and the amount in bytes to be read or written. It shall return the actual amount of bytes transferred. Other functions indicate that EOF has been reached when reading, or a serious error occured.

```
typedef DWORD (NERO_CALLBACK_ATTR *NERO_IO_CALLBACK)
(void *pUserData, BYTE *pBuffer, DWORD dwLen);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_IO_CALLBACK | 5.0.3.9 |

### 7.1.29. NERO_ISO_ITEM

This type is used for ISO track generation. The *NeroAPI* offers functions to create ISO items, copy them, free space used by an item, and create tracks based on an ISO root item.

```
typedef struct tag_NERO_ISO_ITEM
{
  char fileName[252];
  char *longFileName;
  BOOL isDirectory;
  BOOL isReference;
  char sourceFilePath[252];
  const char *longSourceFilePath;
  char sourceFilePath[256];
  struct tag_NERO_ISO_ITEM *subDirFirstItem;
  struct tag_NERO_ISO_ITEM *nextItem;
  void *userData;
  long dataStartSec;
  __int64 dataLength;
  struct tm entryTime;
  int itemSize;
  struct CImportInfo *importinfo;
} NERO_ISO_ITEM;
```

| Description of structure members | |
|---|---|
| fileName | Deprecated, use longFileName instead. |
| longFileName | File name on the burnt CD. It will be freed in NeroFreeIsoItem if this item is a reference. |
| isDirectory | Is this item a directory? |
| isReference | Is this item a reference to a file/directory of a previous session. |
| sourceFilePath | Deprecated, use longSourceFilePath instead |

| Description of structure members | |
|---|---|
| longSourceFilePath | Path to the file, including file name (ignored for a directory). When recording RockRidge, you can set the name of a directory to be used for retrieving rockridge informations here. |
| subDirFirstItem | Point on the first item of the sub directory if the item is a directory. Can be NULL if the directory is empty. (ignored for a file) |
| nextItem | Next item in the current directory |
| userData | Can be used to store additional information |
| dataStartSec | Used to reference a file from a previous session |
| dataLength | Used to reference a file from a previous session |
| entryTime | Used to reference a file from a previous session |
| itemSize | Size of the structure |
| importinfo | Optional pointer to an object with import information. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_ISO_ITEM | 5.0.3.9 |
| itemSize | 5.5.0.6 |
| Importinfo | 5.5.0.6<br>5.5.7.5: “rockridge” is renamed to “importinfo” |
| filename | 6.0.0.0<br>Size changed from 256 to 252. |
| longFileName | 6.0.0.0 |
| sourceFilePath | 6.0.0.0<br>Size changed from 256 to 252. |
| longSourceFilePath | 6.0.0.0 |

### 7.1.30. NERO_MAJOR_PHASE

This enum is used by NERO_SET_MAJOR_PHASE_CALLBACK. It indicates what major phase the burn process is currently in.

```
typedef enum
{
      NERO_PHASE_UNSPECIFIED                  =-1,
      NERO_PHASE_START_CACHE                  =24,
      NERO_PHASE_DONE_CACHE                   =25,
      NERO_PHASE_FAIL_CACHE                   =26,
      NERO_PHASE_ABORT_CACHE                  =27,
      NERO_PHASE_START_TEST                   =28,
      NERO_PHASE_DONE_TEST                    =29,
      NERO_PHASE_FAIL_TEST                    =30,
      NERO_PHASE_ABORT_TEST                   =31,
      NERO_PHASE_START_SIMULATE               =32,
      NERO_PHASE_DONE_SIMULATE                =33,
      NERO_PHASE_FAIL_SIMULATE                =34,
      NERO_PHASE_ABORT_SIMULATE               =35,
      NERO_PHASE_START_WRITE                  =36,
```

```
      NERO_PHASE_DONE_WRITE                    =37,
      NERO_PHASE_FAIL_WRITE                    =38,
      NERO_PHASE_ABORT_WRITE                   =39,
      NERO_PHASE_START_SIMULATE_NOSPD          =61,
      NERO_PHASE_DONE_SIMULATE_NOSPD           =62,
      NERO_PHASE_FAIL_SIMULATE_NOSPD           =63,
      NERO_PHASE_ABORT_SIMULATE_NOSPD          =64,
      NERO_PHASE_START_WRITE_NOSPD             =65,
      NERO_PHASE_DONE_WRITE_NOSPD              =66,
      NERO_PHASE_FAIL_WRITE_NOSPD              =67,
      NERO_PHASE_ABORT_WRITE_NOSPD             =68,
      NERO_PHASE_PREPARE_ITEMS                 =73,
      NERO_PHASE_VERIFY_COMPILATION            =78,
      NERO_PHASE_VERIFY_ABORTED                =79,
      NERO_PHASE_VERIFY_END_OK                 =80,
      NERO_PHASE_VERIFY_END_FAIL               =81,
      NERO_PHASE_ENCODE_VIDEO                  =82,
      NERO_PHASE_SEAMLESSLINK_ACTIVATED        =87,
      NERO_PHASE_BUP_ACTIVATED                 =90,
      NERO_PHASE_CONTINUE_FORMATTING           =99,
      NERO_PHASE_FORMATTING_SUCCESSFUL         =100,
      NERO_PHASE_FORMATTING_FAILED             =101,
      NERO_PHASE_PREPARE_CD                    =105,
      NERO_PHASE_DONE_PREPARE_CD               =106,
      NERO_PHASE_FAIL_PREPARE_CD               =107,
      NERO_PHASE_ABORT_PREPARE_CD              =108,
      NERO_PHASE_DVDVIDEO_DETECTED             =111,
      NERO_PHASE_DVDVIDEO_REALLOC_STARTED      =112,
      NERO_PHASE_DVDVIDEO_REALLOC_COMPLETED    =113
      NERO_PHASE_DVDVIDEO_REALLOC_NOTNEEDED    =114,
      NERO_PHASE_DVDVIDEO_REALLOC_FAILED       =115
} NERO_MAJOR_PHASE;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_MAJOR_PHASE | 5.0.3.9 |
| NERO_PHASE_BUP_ACTIVATED | 5.5.7.8 |
| NERO_PHASE_DVDVIDEO_DETECTED | 5.5.7.8 |
| NERO_PHASE_DVDVIDEO_REALLOC_STARTED | 5.5.7.8 |
| NERO_PHASE_DVDVIDEO_REALLOC_COMPLETED | 5.5.7.8 |
| NERO_PHASE_CONTINUE_FORMATTING | 5.5.8.0 |
| NERO_PHASE_SEAMLESSLINK_ACTIVATED | 5.5.8.2 |
| NERO_PHASE_FORMATTING_SUCCESSFUL | 5.5.8.2 |
| NERO_PHASE_DVDVIDEO_REALLOC_NOTNEEDED | 5.5.9.3 |
| NERO_PHASE_DVDVIDEO_REALLOC_FAILED | 5.5.9.3 |
| NERO_PHASE_FAIL_CACHE | 6.0.0.0 |
| NERO_PHASE_ABORT_CACHE | 6.0.0.0 |
| NERO_PHASE_FAIL_TEST | 6.0.0.0 |
| NERO_PHASE_ABORT_TEST | 6.0.0.0 |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_PHASE_FAIL_SIMULATE | 6.0.0.0 |
| NERO_PHASE_ABORT_SIMULATE | 6.0.0.0 |
| NERO_PHASE_FAIL_WRITE | 6.0.0.0 |
| NERO_PHASE_ABORT_WRITE | 6.0.0.0 |
| NERO_PHASE_FAIL_SIMULATE_NOSPD | 6.0.0.0 |
| NERO_PHASE_ABORT_SIMULATE_NOSPD | 6.0.0.0 |
| NERO_PHASE_FAIL_WRITE_NOSPD | 6.0.0.0 |
| NERO_PHASE_ABORT_WRITE_NOSPD | 6.0.0.0 |
| NERO_PHASE_ABORT_WRITE_NOSPD | 6.0.0.0 |
| NERO_PHASE_PREPARE_ITEMS | 6.0.0.0 |
| NERO_PHASE_VERIFY_COMPILATION | 6.0.0.0 |
| NERO_PHASE_VERIFY_ABORTED | 6.0.0.0 |
| NERO_PHASE_VERIFY_END_OK | 6.0.0.0 |
| NERO_PHASE_VERIFY_END_FAIL | 6.0.0.0 |
| NERO_PHASE_FORMATTING_FAILED | 6.0.0.0 |
| NERO_PHASE_PREPARE_CD | 6.0.0.0 |
| NERO_PHASE_DONE_PREPARE_CD | 6.0.0.0 |
| NERO_PHASE_FAIL_PREPARE_CD | 6.0.0.0 |
| NERO_PHASE_ABORT_PREPARE_CD | 6.0.0.0 |

### 7.1.31. NERO_MAJOR_PHASE_CALLBACK

This callback tells the application which phase of the burn process *NeroAPI* is currently in.

```
typedef void (NERO CALLBACK ATTR *NERO SET MAJOR PHASE CALLBACK)(void
*pUserData,NERO_MAJOR_PHASE phase,void *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_MAJOR_PHASE_CALLBACK | 5.0.3.9 |

### 7.1.32. NERO_MEDIA_SET

NERO_MEDIA_SET represents a set of several media.

```
typedef DWORD NERO_MEDIA_SET;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_MEDIA_SET | 5.5.8.0 |

### 7.1.33. NERO_MEDIA_TYPE

The bit combination of NERO_MEDIA_TYPE have a relatively uncommon format to ensure binary compatibility.

This might lead to unexpected behavior. For example when checking (mediaType & MEDIA_CDRW) the result will be true, even if mediaType=MEDIA_CDR.

So it is better to test for (mediaType&MEDIA_CDRW) == MEDIA_CDRW.

```
typedef enum tag_NERO_MEDIA_TYPE
{
      MEDIA_NONE                    =     0,
      MEDIA_CD                      =     0x00001,
      MEDIA_DDCD                    =     0x00002,
      MEDIA_DVD_M                   =     0x00004,
      MEDIA_DVD_P                   =     0x00008,
      MEDIA_DVD_ANY                 =     MEDIA_DVD_M|MEDIA_DVD_P,
      MEDIA_DVD_RAM                 =     0x00010,
      MEDIA_ML                      =     0x00020,
      MEDIA_MRW                     =     0x00040,

      MEDIA_NO_CDR                  =     0x00080,
      MEDIA_NO_CDRW                 =     0x00100,
      MEDIA_CDRW                    =     MEDIA_CD|MEDIA_NO_CDR,
      MEDIA_CDR                     =     MEDIA_CD|MEDIA_NO_CDRW,
      MEDIA_DVD_ROM                 =     0x00200,
      MEDIA_CDROM                   =     0x00400,

      MEDIA_NO_DVD_M_RW             =     0x00800,
      MEDIA_NO_DVD_M_R              =     0x01000,
      MEDIA_NO_DVD_P_RW             =     0x02000,
      MEDIA_NO_DVD_P_R              =     0x04000,
      MEDIA_DVD_M_R                 =     MEDIA_DVD_M|MEDIA_NO_DVD_M_RW,
      MEDIA_DVD_M_RW                =     MEDIA_DVD_M|MEDIA_NO_DVD_M_R,
      MEDIA_DVD_P_R                 =     MEDIA_DVD_P|MEDIA_NO_DVD_P_RW,
      MEDIA_DVD_P_RW                =     MEDIA_DVD_P|MEDIA_NO_DVD_P_R,
      MEDIA_FPACKET                 =     0x08000,
      MEDIA_VPACKET                 =     0x10000,
      MEDIA_PACKETW                 =     MEDIA_MRW|MEDIA_FPACKET
                                                |MEDIA_VPACKET
      MEDIA_HDB                     =     0x20000
} NERO_MEDIA_TYPE;
```

| Description of enumerators | |
|---|---|
| MEDIA_NONE | No media present. |
| MEDIA_CD | CD-R/RW |
| MEDIA_DDCD | DDCD-R/RW |
| MEDIA_DVD_M | DVD-R/RW |
| MEDIA_DVD_P | DVD+RW |
| MEDIA_DVD_ANY | Any DVD-Recorder |
| MEDIA_DVD_RAM | DVD-RAM |
| MEDIA_ML | ML (Multi Level disc) |
| MEDIA_MRW | Mt. Rainier |
| MEDIA_NO_CDR | Exclude CD-R |
| MEDIA_NO_CDRW | Exclude CD-RW |
| MEDIA_CDRW | CD-RW |
| MEDIA_CDR | CD-R |
| MEDIA_DVD_ROM | DVD-ROM (non writable) |

| Description of enumerators | |
|---|---|
| MEDIA_CDROM | CD-ROM (non writable) |
| MEDIA_NO_DVD_M_RW | Exclude DVD-RW |
| MEDIA_NO_DVD_M_R | Exclude DVD-R |
| MEDIA_NO_DVD_P_RW | Exclude DVD+RW |
| MEDIA_NO_DVD_P_R | Exclude DVD+R |
| MEDIA_DVD_M_R | DVD-R |
| MEDIA_DVD_M_RW | DVD-RW |
| MEDIA_DVD_P_R | DVD+R |
| MEDIA_DVD_P_RW | DVD+RW |
| MEDIA_FPACKET | Fixed Packetwriting |
| MEDIA_VPACKET | Variable Packetwriting |
| MEDIA_PACKETW | A bit mask for packetwriting |
| MEDIA_HDB | HD-Burn |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_MEDIA_TYPE | 5.5.4.3 |
| MEDIA_NONE | 5.5.9.4 |
| MEDIA_NO_CDR | 5.5.9.4 |
| MEDIA_NO_CDRW | 5.5.9.4 |
| MEDIA_CDRW | 5.5.9.4 |
| MEDIA_CDR | 5.5.9.4 |
| MEDIA_DVD_ROM | 5.5.9.4 |
| MEDIA_CDROM | 5.5.9.4 |
| MEDIA_NO_DVD_M_RW | 5.5.9.10 |
| MEDIA_NO_DVD_M_R | 5.5.9.10 |
| MEDIA_NO_DVD_P_RW | 5.5.9.10 |
| MEDIA_NO_DVD_P_R | 5.5.9.10 |
| MEDIA_DVD_M_R | 5.5.9.10 |
| MEDIA_DVD_M_RW | 5.5.9.10 |
| MEDIA_DVD_P_R | 5.5.9.10 |
| MEDIA_DVD_P_RW | 5.5.9.10 |
| MEDIA_FPACKET | 5.5.9.10 |
| MEDIA_VPACKET | 5.5.9.10 |
| MEDIA_PACKETW | 5.5.9.10 |
| MEDIA_HDB | 5.5.10.4 |

### 7.1.34. NERO_MEDIUM_TYPE

This type is obsolete and **should not be used anymore**. Please use NERO_MEDIA_TYPE instead.

```
typedef enum
{
  NMT_UNKNOWN,
  NMT_CD_ROM,
  NMT_CD_RECORDABLE,
```

```
  NMT_CD_REWRITEABLE
} NERO_MEDIUM_TYPE;
```

| Description of enumerators | |
|---|---|
| NMT_UNKNOWN | Unknown medium |
| NMT_CD_ROM | CD ROM |
| NMT_CD_RECORDABLE | CD Recordable (CDR) |
| NMT_CD_REWRITEABLE | CD Rewritable (CDRW) |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_MEDIUM_TYPE | 5.0.3.9 |

### 7.1.35. NERO_PROGRESS

Is used for passing required callback function pointers to the NeroBurn function. npDisableAbortCallback will be called only if the NBF_DISABLE_ABORT flag is given to the NeroBurn function.
npSubTaskProgressCallback provides the write buffer fill level.

```
typedef struct tag_NERO_PROGRESS
{
  NERO_PROGRESS_CALLBACK  npProgressCallback;
  NERO_ABORTED_CALLBACK  npAbortedCallback;
  NERO_ADD_LOG_LINE_CALLBACK  npAddLogLineCallback;
  NERO_SET_PHASE_CALLBACK  npSetPhaseCallback;
  NERO_DISABLE_ABORT_CALLBACK npDisableAbortCallback;
  NERO_SET_MAJOR_PHASE_CALLBACK npSetMajorPhaseCallback;
  NERO_PROGRESS_CALLBACK npSubTaskProgressCallback;
} NERO_PROGRESS;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_PROGRESS | 5.0.3.9 |
| npSetMajorPhaseCallback | 5.5.5.8 |
| npSubTaskProgressCallback | 5.5.6.6 |

### 7.1.36. NERO_PROGRESS_CALLBACK

This function needs to return TRUE if the user wants to abort.

The application may provide callback functions to set the different parts of this display. All of them may be NULL.

```
typedef BOOL  (NERO_CALLBACK_ATTR *NERO_PROGRESS_CALLBACK)
                        (void*pUserData, DWORD dwProgressInPercent);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_PROGRESS_CALLBACK | 5.0.3.9 |

### 7.1.37. NERO_SCSI_DEVICE_INFO

This struct provides information about a device. It is used in NERO_SCSI_DEVICE_INFOS, the return type of NeroGetAvailableDrivesEx. Apart from that, it is a required parameter when opening a device by a call to NeroOpenDevice.

```
typedef struct tag_NERO_SCSI_DEVICE_INFO
{
  char    nsdiDeviceName[32];
  char    nsdiHostAdapterName[8];
  DWORD   nsdiHostAdapterNo;
  DWORD   nsdiDeviceID;
  NEROAPI_SCSI_DEVTYPE   nsdiDevType;
  char    nsdiDriveLetter;
  DWORD   nsdiCapabilities;
  NERO_SPEED_INFOS  nsdiReadSpeeds;
  NERO_SPEED_INFOS  nsdiWriteSpeeds;
  const void       *nsdiDriver;
  char*   NsdiBufUnderrunProtName[64];
  DWORD   nsdiMandatoryBUPSpeed;
  NERO_MEDIA_SET   nsdiMediaSupport;
  DWORD   nsdiDriveBufferSize;
  DWORD   nsdiDriveError;
  DWORD   nsdiReserved[62];
 } NERO_SCSI_DEVICE_INFO;
```

| Description of structure members | | |
|---|---|---|
| nsdiDeviceName | | |
| nsdiHostAdapterName | | |
| nsdiHostAdapterNo | | |
| nsdiDeviceID | | |
| nsdiDevType | | |
| nsdiDriveLetter | Windows drive letter or 0 if not available. | |
| nsdiCapabilities | drive capabilities: | |
| | NSDI_ALLOWED | The drive can only be used if this bit is set. |
| | NSDI_DAO | Can write in DAO. |
| | NSDI_READ_CD_TEXT | Can read CD text. |
| | NSDI_VARIABLE_PAUSES_IN_TAO | See natPauseInBlksBeforeThisTrack below. |
| | NSDI_DAO_WRITE_CD_TEXT | Writes CD text in DAO (see natArtist/Title); never supported in TAO. |

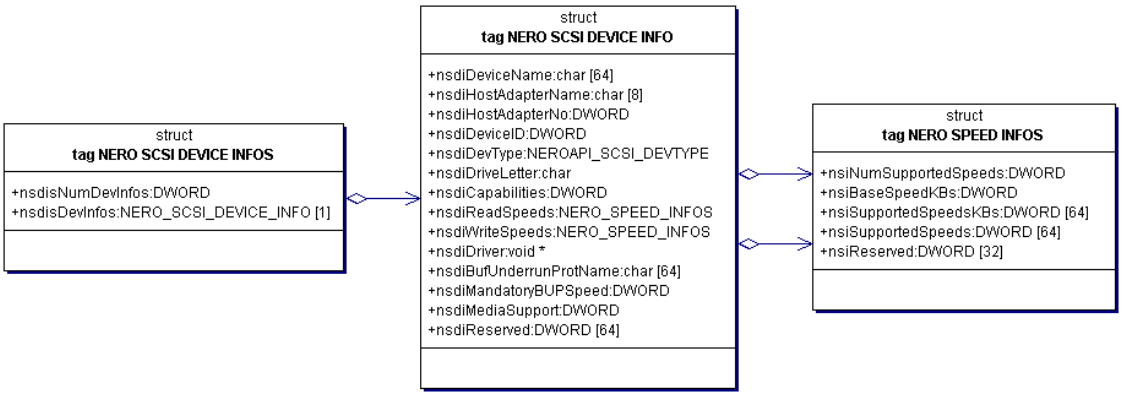
| **Description of structure members** | | |
|---|---|---|
| | NSDI_BURN_PROOF | Drive can use the burn proof mode.<br>This flag is present for compatibility, better use the NSDI_BUF_UNDERRUN _PROT flag to support other technologies too |
| | NSDI_IMAGE_RECORDER | Drive is the image recorder. |
| | NSDI_UNDETECTED | |
| | NSDI_IDE_BUS | |
| | NSDI_SCSI_BUS | |
| | NSDI_BUF_UNDERRUN_PROT | Drive has a buffer underrun protection feature (not necessary Burn Proof) |
| | NSDI_RESERVED | Must not be used. |
| | NSDI_RESERVED2 | Must not be used. |
| | NSDI_ALLOW_CHANGE_ BOOKTYPE | DVD recorder can change booktype of burned medium. |
| | NSDI_DVDPLUSVR_SUPPORTED | This recorder can write DVD+VR. |
| nsdiReadSpeeds | See declaration of NERO_SPEED_INFOS. | |
| nsdiWriteSpeeds | See declaration of NERO_SPEED_INFOS. | |
| nsdiDriver | Opaque identifier of the internal driver, required by NeroOpenDevice. | |
| nsdiBufUnderrunProt Name | Buffer underrun protection technology name<br>The string will be empty if the technology has no name | |
| nsdiMandatoryBUPSp eed | It is highly recommended to enable buffer underrun protection when burning at this speed or faster. Contains 0 if there is no recommendation. | |
| nsdiMediaSupport | Bit field of supported media (constructed with the NERO_MEDIA_TYPE enum). | |
| nsdiDriveBufferSize | Drive buffer size (internal) in KB. | |
| nsdiDriveError | Contains a NERO_DRIVE_ERROR that occured during generating the information.<br>If it differs from NDE_NO_ERROR, some information like the drive capabilities or the speeds might be wrong.<br>NeroIsDeviceReady can be used to check if the drive is ready later and update the device information with NeroUpdateDeviceInfo.<br>NDE_DISC_NOT_PRESENT* errors can be ignored. | |
| nsdiReserved | Should be zero. | |

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| NERO_SCSI_DEVICE_INFO | 5.0.3.9 |
| NSDI_BUF_UNDERRUN_PROT | 5.5.0.6 |
| nsdiBufUnderrunProtName | 5.5.0.6 |
| nsdiMandatoryBUPSpeed | 5.5.3.2 |
| nsdiMediaSupport | 5.5.4.1<br>5.5.8.0: changed type from DWORD to NERO_MEDIA_SET |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| nsdiDriver | 5.5.9.4 changed from void* to const void* |
| nsdiDriveBufferSize | 5.5.9.4 |
| NSDI_RESERVED2 | 5.5.10.7 |
| NSDI_ALLOW_CHANGE_BOOKTYPE | 5.5.10.7 |
| NSDI_DVDPLUSVR_SUPPORTED | 6.0.0.0 |
| nsdiDriveError | 6.0.0.0 |

### 7.1.38. NERO_SCSI_DEVICE_INFOS

Used to create a list of NERO_SCSI_DEVICE_INFO structures. It is the return type of NeroGetAvailableDrivesEx.




```
typedef struct tag_NERO_SCSI_DEVICE_INFOS
{
  DWORD   nsdisNumDevInfos;
  NERO_SCSI_DEVICE_INFO   nsdisDevInfos[1];
} NERO_SCSI_DEVICE_INFOS;
```

| Description of structure members | |
|---|---|
| nsdisNumDevInfos | Number of entries in nsdisDevInfos. |
| nsdisDevInfos | See declaration of NERO_SCSI_DEVICE_INFO. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_SCSI_DEVICE_INFOS | 5.0.3.9 |

### 7.1.39. NERO_SET_PHASE_CALLBACK

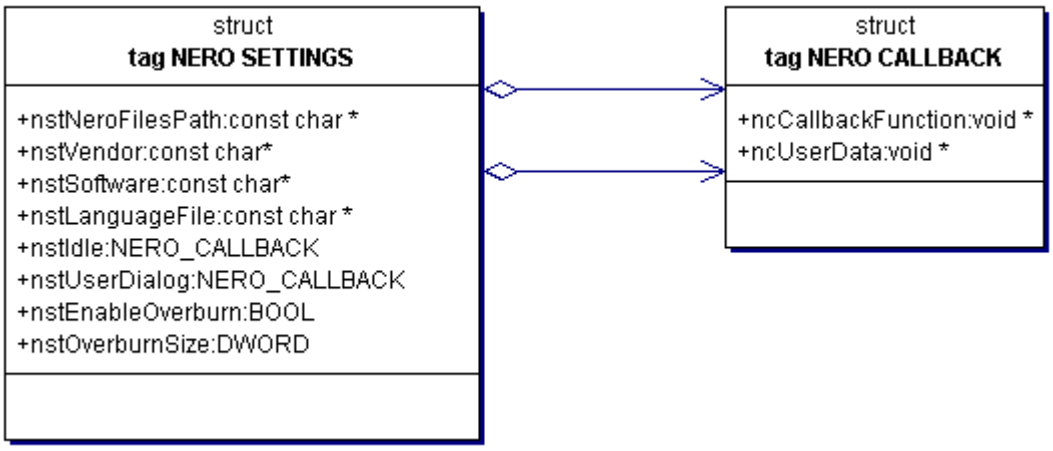
Set the phase line. The text pointer becomes invalid after returning from this function.

```
typedef void  (NERO_CALLBACK_ATTR *NERO_SET_PHASE_CALLBACK)(void
*pUserData, const char *text);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_SET_PHASE_CALLBACK | 5.0.3.9 |

### 7.1.40. NERO_SETTINGS

This struct needs to be passed when calling the NeroInit function.




```
typedef struct tag_NERO_SETTINGS
{
  const char  *nstNeroFilesPath;
  const char  *nstVendor, *nstSoftware;
  const char   *nstLanguageFile;
  NERO_CALLBACK   nstIdle;
  NERO_CALLBACK   nstUserDialog;
  BOOL    nstEnableOverburn;
  DWORD   nstOverburnSize;
} NERO_SETTINGS;
```

| Description of structure members | |
|---|---|
| nstNeroFilesPath | Directory name with trailing '\' of where to find the additional Nero DLL and text files. |
| nstVendor | Path for registry setting. Use “ahead”. |
| nstSoftware | Path for registry settings. Use "Nero - Burning Rom" for Nero application's settings. |

| **Description of structure members** | |
|---|---|
| nstLanguageFile | Name of the Nero language file;<br>relative to nstNeroFilesPath (e.g. "Nero.txt") |
| nstIdle | NERO_IDLE_CALLBACK, may be NULL |
| nstUserDialog | NERO_USER_DIALOG, must not be NULL, see "NeroUserDialog.h" for details |
| nstEnableOverburn | Overburn settings:<br>Overburning (writing more than the nominal capacity of a disc) is allowed if all of this is true:<br>NstEnableOverburn == TRUE<br>NstOverburnSize >= amount of required blocks for compilation<br>The drive supports it<br>DAO is used.<br>Even then, overburning has to be acknowledged via callback (see DLG_OVERBURN in "NeroUserDialog.h"). |
| nstOverburnSize | In blocks |

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| NERO_SETTINGS | 5.0.3.9 |

### 7.1.41. NERO_SPEED_INFOS

This struct will be returned by NeroGetAvailableSpeeds. Two instances of it are used in the NERO_SCSI_DEVICE_INFO struct, for read and write speeds that a particular device supports.

```
typedef struct tag_NERO_SPEED_INFOS
{
  DWORD  nsiNumSupportedSpeeds;
  DWORD nsiBaseSpeedKBs;
  DWORD nsiSupportedSpeedsKBs[64];
  DWORD nsiSupportedSpeeds[64];
  DWORD nsiReserved[32];
} NERO_SPEED_INFOS;
```

| Description of structure members | |
|---|---|
| nsiNumSupportedSpeeds | 1 if the speed cannot be changed. |
| nsiBaseSpeedKBs | Speed corresponding to 1X for the selected media in KB/s. |
| nsiSupportedSpeedsKBs | List of possible speeds in KB/s |
| nsiSupportedSpeeds | List of possible speeds in multiple of 150KB/s (1X for CD) (present for compatibility) |
| nsiReserved | Reserved for future use. |

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| NERO_SPEED_INFOS | 5.0.3.9 |

### 7.1.42. NERO_STATUS_CALLBACK

This callback is used as a part of the data exchange between the *NeroAPI* and an application.

```
typedef BOOL (NERO_CALLBACK_ATTR *NERO_STATUS_CALLBACK)
(void *pUserData);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_STATUS_CALLBACK | 5.0.3.9 |

### 7.1.43. NERO_TEXT_TYPE

This type is used by the NERO_ADD_LOG_LINE_CALLBACK to indicate the nature the textual information.

```
typedef enum
{
  NERO_TEXT_INFO,
  NERO_TEXT_STOP,
  NERO_TEXT_EXCLAMATION,
  NERO_TEXT_QUESTION,
  NERO_TEXT_DRIVE,
  NERO_TEXT_FILE,
  NERO_TEXT_UNSPECIFIED
} NERO_TEXT_TYPE;
```

| Description of enumerators | |
|---|---|
| NERO_TEXT_INFO | Informative text. |
| NERO_TEXT_STOP | Some operation stopped prematurely |
| NERO_TEXT_EXCLAMATION | Important information. |
| NERO_TEXT_QUESTION | A question which requires an answer. |
| NERO_TEXT_DRIVE | A message concerning a CD-ROM drive or recorder. |
| NERO_TEXT_FILE | A message concerning a file. |
| NERO_TEXT_UNSPECIFIED | No type specified. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_TEXT_TYPE | 5.0.3.9 |

### 7.1.44. NERO_TRACK_INFO

A list of this type is contained in NERO_CD_INFO to provide details about every track.

```
typedef struct tag_NERO_TRACK_INFO
{
  DWORD  ntiSessionNumber;
  DWORD   ntiTrackNumber;
  NERO_TRACK_TYPE  ntiTrackType;
  DWORD  ntiTrackStartBlk;
  DWORD  ntiTrackLengthInBlks;
  char  ntiArtist[65];
  char  ntiTitle[65];
  char  ntiISRC[13];
  DWORD  ntiBlockSize;
  DWORD  ntiReserved[28];
} NERO_TRACK_INFO;
```

| Description of structure members | |
|---|---|
| ntiSessionNumber | Session Number. |
| ntiTrackNumber | Track Number. |
| ntiTrackType | Track Type (Audio, Data, Unknown). |
| ntiTrackStartBlk | Start Block of Track. |
| ntiTrackLengthInBlks | Length of Track in Blocks. |
| ntiArtist[65] | Name of Artist for Audio Tracks. |
| ntiTitle[65] | Title of Song for Audio Tracks. |
| ntiISRC[13] | If NGCDI_READ_ISRC is present: 12 chars ISRC (International Standard Recording Code) + terminator. |
| ntiBlockSize | Size of one block in bytes. |
| ntiReserved[28] | Should be zero. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_TRACK_INFO | 5.5.8.3 |
| ntiISRC | 5.5.8.4 |
| ntiBlockSize | 6.0.0.0 |

### 7.1.45. NERO_TRACK_TYPE

This enum is a member of the NERO_TRACK_INFO struct.

```
typedef enum
{
  NTT_UNKNOWN,
  NTT_DATA,
  NTT_AUDIO
} NERO_TRACK_TYPE;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_TRACK_TYPE | 5.0.3.9 |

### 7.1.46. NERO_TRACKMODE_TYPE

This type is contained in NERO_FREESTYLE_TRACK to specify the track type that will be written.

```
typedef enum
{
  NERO_TRACKMODE_MODE1,
  NERO_TRACKMODE_MODE2_FORM1,
  NERO_TRACKMODE_AUDIO
} NERO_TRACKMODE_TYPE;
```

| Description of enumerators | |
|---|---|
| NERO_TRACKMODE_MODE1 | 2048 Bytes per sector data track |
| NERO_TRACKMODE_MODE2_FORM1 | 2048 Bytes per sector, used for multisession |
| NERO_TRACKMODE_AUDIO | 2352 Bytes per sector, standard audio track |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_TRACKMODE_TYPE | 5.0.3.9 |

### 7.1.47. NERO_VIDEO_ITEM_TYPE

This enum is used in NERO_VIDEO_ITEM to determine the format of the video data.

```
typedef enum
{
  NERO_MPEG_ITEM,
  NERO_JPEG_ITEM,
  NERO_NONENCODED_VIDEO_ITEM,
  NERO_DIB_ITEM
} NERO_VIDEO_ITEM_TYPE;
```

| Description of enumerators | |
|---|---|
| NERO_MPEG_ITEM | Item is of MPEG type. |
| NERO_JPEG_ITEM | Item is of JPEG type. |
| NERO_NONENCODED_VIDEO_ITEM | The source file name will be an AVI file which will be encoded into MPG by NeroAPI. |
| NERO_DIB_ITEM | The source is a DIB picture. Informations about it must be given in nviData.nviDIB. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_VIDEO_ITEM_TYPE | 5.0.3.9 |
| NERO_NONENCODED_VIDEO_ITEM | 5.5.7.8 |
| NERO_DIB_ITEM | 5.5.7.6 |

### 7.1.48. NERO_VIDEO_ITEM

A list of NERO_VIDEO_ITEM structs is contained in NERO_WRITE_VIDEO_CD.

```
typedef struct tag_NERO_VIDEO_ITEM
{
  DWORD nviPauseAfterItem;
  char nviSourceFileName[250];
  const char *nviLongSourceFileName;
  NERO_VIDEO_ITEM_TYPE nviItemType;
} NERO_VIDEO_ITEM;
```

| Description of structure members | |
|---|---|
| nviPauseAfterItem | |
| nviSourceFileName | Deprecated, use nviLongSourceFileName instead. |
| nviLongSourceFileName | MPG, JPG or AVI file. |
| nviItemType | Callback functions can only be used for MPG files. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_VIDEO_ITEM | 5.0.3.9 |
| nviData | 6.0.0.0<br>Removed. |
| nviSourceFileName | 6.0.0.0<br>Size changed from 236 to 250. |

### 7.1.49. NERO_WAITCD_TYPE

This enum is used by the NERO_USER_DIALOG callback and the NeroGetLocalizedWaitCDTexts function.

```
typedef enum
{
    NERO_WAITCD_WRITE,
    NERO_WAITCD_SIMULATION,
    NERO_WAITCD_AUTOEJECTLOAD,
    NERO_WAITCD_REINSERT,
    NERO_WAITCD_NEXTCD,
    NERO_WAITCD_ORIGINAL,
    NERO_WAITCD_WRITEPROTECTED,
    NERO_WAITCD_NOTENOUGHSPACE,
    NERO_WAITCD_NEWORIGINAL,
    NERO_WAITCD_EMPTYCD,
    NERO_WAITCD_WRITE_EMPTY,
    NERO_WAITCD_SIMULATION_EMPTY,
    NERO_WAITCD_WRITEWAVE,
    NERO_WAITCD_MULTISESSION,
    NERO_WAITCD_MULTISESSION_SIM,
    NERO_WAITCD_MULTI_REINSERT,
      NERO_WAITCD_DISCINFOS_FAILED,
      NERO_WAITCD_MEDIUM_UNSUPPORTED,
      NERO_WAITCD_AUTOEJECTLOAD_VER,
      NERO_WAITCD_REINSERT_VER,
      NERO_WAITCD_NOFORMAT,
      NERO_WAITCD_WRONG_MEDIUM,
      NERO_WAITCD_WAITING,
      NERO_WAITCD_MAX
} NERO_WAITCD_TYPE;
```

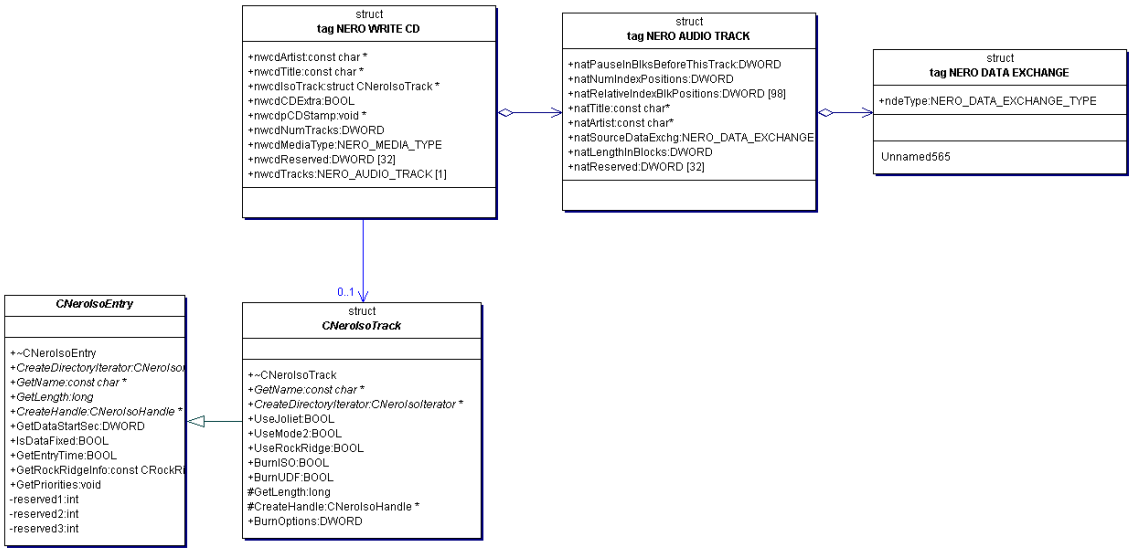
| Description of enumerators | |
|---|---|
| NERO_WAITCD_WRITE | "Please insert the disc to write to..." |
| NERO_WAITCD_SIMULATION | "Please insert a disc to use during simulation...(Nothing will be written on the disc.)" |
| NERO_WAITCD_ AUTOEJECTLOAD | "Please do not remove the disc!\n\nYour recorder requires this eject between simulation and burning. The disc will be reloaded automatically before continuing with burning..." |
| NERO_WAITCD_REINSERT | "Please do not remove the disc!<br>Your recorder requires this eject between simulation and burning. Please reinsert the disc..." |
| NERO_WAITCD_NEXTCD | "Please remove the disc and insert the next recordable disc to write to..." |
| NERO_WAITCD_ORIGINAL | "Please insert the original disc." |
| NERO_WAITCD_ WRITEPROTECTED | "This disc is not writable.<br>Please insert a writable disc..." |

| Description of enumerators | |
|---|---|
| NERO_WAITCD_ NOTENOUGHSPACE | "There is not enough space to burn this compilation onto this disc.<br>Please insert another disc that provides more space..." |
| NERO_WAITCD_ NEWORIGINAL | "The disc is blank, invalid nor a multisession disc.<br>Please insert original disc." |
| NERO_WAITCD_EMPTYCD | "The disc is not empty.<br>Please insert an empty disc." |
| NERO_WAITCD_WRITE_ EMPTY | "Please insert an empty disc to write to..." |
| NERO_WAITCD_SIMULATION_ EMPTY | "Please insert an empty disc to use during simulation...<br>(Nothing will be written on the disc)." |
| NERO_WAITCD_WRITEWAVE | "The disc is blank.\n\nPlease insert original disc…" |
| NERO_WAITCD_ MULTISESSION | "Nero is checking for the disc, please wait ...<br>To burn this multisession compilation you need the disc, that contains the previous backup sessions. Please insert this disc if you haven't done it before." |
| NERO_WAITCD_ MULTISESSION_SIM | "To simulate this multisession compilation you need the disc, that contains the previous backup sessions. Please insert this disc. (Nothing will be written on disc)." |
| NERO_WAITCD_MULTI_ REINSERT | "Please do not remove the disc!\n\nYour recorder requires this eject between simulation and burning. Please reinsert the\n same Multisession disc..." |
| NERO_WAITCD_DISCINFOS_ FAILED | "Disc analysis failed. The error log\ncontains more information about the reason." |
| NERO_WAITCD_MEDIUM_ UNSUPPORTED | "The recorder does not support this type of media!<br>Please insert a correct disc to write to..." |
| NERO_WAITCD_ AUTOEJECTLOAD_VER | "Please do not remove the disc!<br>Your recorder requires that the disc be ejected between burning and verification. The disc will be reloaded automatically when burning is to continue..." |
| NERO_WAITCD_REINSERT_ VER | "Please do not remove the disc!<br>Your recorder requires that the disc be ejected between burning and verification. Please reinsert the disc..." |
| NERO_WAITCD_NOFORMAT | "Disc is not formatted. Please insert a formatted disc." |
| NERO_WAITCD_WRONG_ MEDIUM | "Sorry, your compilation cannot be written on this kind of disc. Please insert a disc of the correct type or modify the settings of your compilation to make them compatible with the current disc." |
| NERO_WAITCD_WAITING | "--- Accessing disc, please wait ---" |
| NERO_WAITCD_MAX | "unknown NERO_WAITCD_TYPE" |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_WAITCD_WRONG_MEDIUM | 5.5.5.6 |
| NERO_WAITCD_WAITING | 5.5.10.26 |

## 7.1.50. NERO_WRITE_CD

NERO_WRITE_CD is passed to the NeroBurn function in the pWriteCD parameter, when burning ISO/Audio media.




```
typedef struct tag_NERO_WRITE_CD
{
  const char *nwcdArtist;
  const char *nwcdTitle;
  struct CNeroIsoTrack *nwcdIsoTrack;
  BOOL nwcdCDExtra;
  void *nwcdpCDStamp;
  DWORD nwcdNumTracks;
  NERO_MEDIA_TYPE nwcdMediaType;
  BOOL nwcdAudioMaster;
  DWORD nwcdReserved[31];
  NERO_AUDIO_TRACK nwcdTracks[1];
} NERO_WRITE_CD;
```

| Description of structure members | |
|---|---|
| nwcdArtist | May be NULL. |
| nwcdTitle | May be NULL. |
| nwcdIsoTrack | If not NULL, then the disc will have an ISO track - please refer to "NeroIsoTrack.h". |
| nwCDExtra | If TRUE and nwcdIsoTrack not NULL, then the resulting CD will have audio in the first session and the data track in the second, however, currently the *NeroAPI* does not add any of the special CD Extra files to the data track. |
| nwcdpCDStamp | Point on a CDStamp object if a particular CD is requested, otherwise NULL. |

| Description of structure members | |
|---|---|
| nwcdNumTracks | Number of Tracks. |
| nwcdMediaType | Media on which the data should be written. |
| nwcdAudioMaster | Create an Audio Master CD (if the recorder supports it). |
| nwcdReserved[31] | |
| nwcdTracks | See declaration of NERO_AUDIO_TRACK. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_WRITE_CD | 5.0.3.9 |
| nwcdMediaType | 5.5.4.3 |

### 7.1.51. NERO_WRITE_FILE_SYSTEM_CONTENT

This type is used when burning an IFileSystemDescContainer.

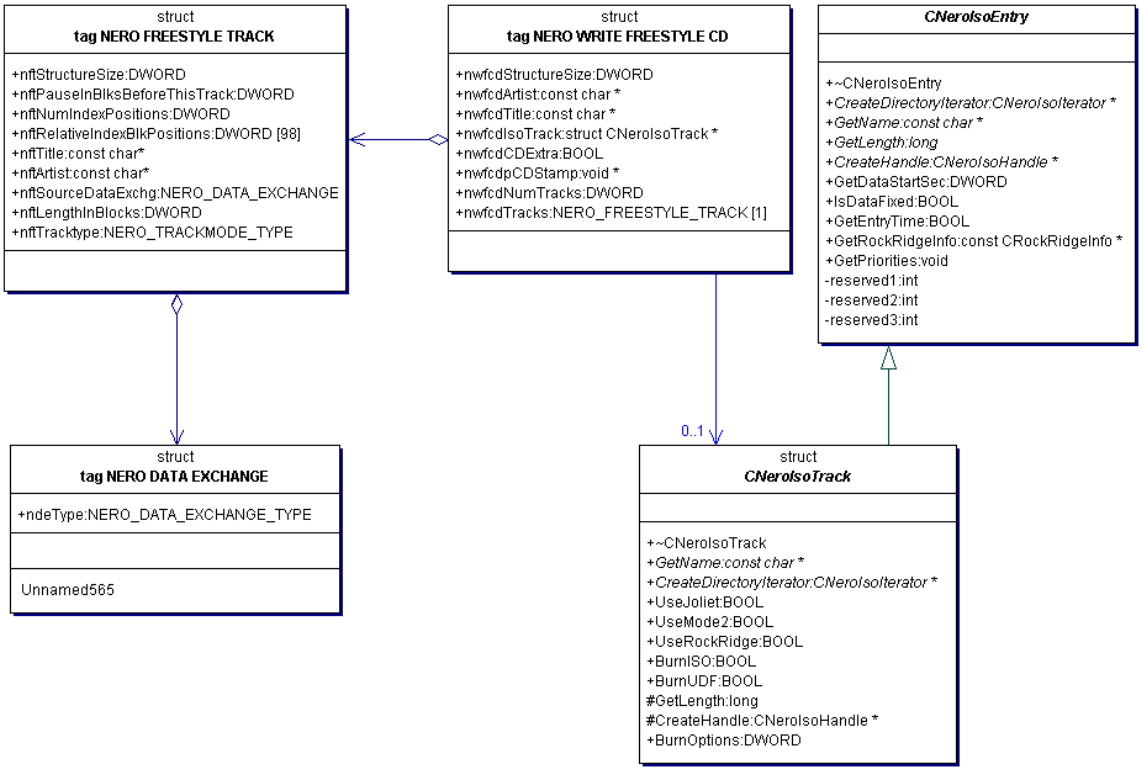
```
typedef struct tag_NERO_WRITE_FILE_SYSTEM_CONTAINER
{
      DWORD nwfscSize;
#ifdef __cplusplus
FileSystemContent::
#else
struct
#endif
      IFileSystemDescContainer *nwfscFSContainer;
      NERO_MEDIA_TYPE   nwfscMediaType;
      DWORD nwfscBurnOptions;
      DWORD nwfscReserved[32];
} NERO_WRITE_FILE_SYSTEM_CONTENT;
```

| Description of structure members | |
|---|---|
| nwfscSize | fill this with sizeof(NERO_WRITE_FILE_SYSTEM_CONTENT) |
| nwfscFSContainer | A pointer to the IFileSystemDescContainer object. |
| nwfscMediaType | Media on which the data should be written |
| nwfscBurnOptions | Combination of NCITEF flags |
| nwfscReserved | Should be zero |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_WRITE_FILE_SYSTEM_CONTENT | 5.5.6.0 |

### 7.1.52. NERO_WRITE_FREESTYLE_CD

This structure will allow you to write any type of CD Layout, e.g. containing a raw data track at the beginning of the disc instead of a self-made ISO/UDF filesystem. This is good for writing .iso images as can be downloaded everywhere on the net.




```
typedef struct
{
  DWORD nwfcdStructureSize;
  const char *nwfcdArtist;
  const char *nwfcdTitle;
  struct CNeroIsoTrack *nwfcdIsoTrack;
  BOOL nwfcdCDExtra;
  void *nwfcdpCDStamp;
  DWORD nwfcdNumTracks;
  DWORD nwfcdBurnOptions;

#ifdef __cplusplus
FileSystemContent::
#else //__cplusplus
struct
#endif//__cplusplus

  IFileSystemDescContainer *nwfcdFSContainer
  NERO_MEDIA_TYPE nwfcdMediaType;
```

```
  DWORD nwfcdReserved[32];
  NERO_FREESTYLE_TRACK nwfcdTracks[1];
} NERO_WRITE_FREESTYLE_CD;
```

| Description of structure members | |
|---|---|
| nwfcdStructureSize | Fill this with sizeof(NERO_WRITE_FREESTYLE_CD). |
| nwfcdArtist | may be NULL. |
| nwfcdTitle | may be NULL. |
| nwfcdIsoTrack | If not NULL, then the disc will have an ISO track - please refer to the “ISO Track Classes” description. |
| nwfcdCDExtra | If TRUE and nwfcdIsoTrack not NULL, then the resulting CD will have audio in the first session and the data track in the second, however, currently the *NeroAPI* does not add any of the special CD Extra files to the data track. |
| nwfcdpCDStamp | Point to a CDStamp object if a particular CD is requested, otherwise NULL. |
| nwfcdNumTracks | Number of tracks. |
| nwfcdBurnOptions | Combination of NCITEF flags. Ignored if nwfcdFSContainer is NULL. |
| nwfcdFSContainer | If not NULL, then the disc will have an ISO track described by this container. nwfcdIsoTrack must be NULL, otherwise the container will be ignored. |
| nwfcdMediaType | Media on which the data should be written. |
| nwfcdTracks[1] | List of NERO_FREESTYLE_TRACKs. |
| nwfcdReserved[32] | Should be zero. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_WRITE_FREESTYLE_CD | 5.0.3.9 |
| nwfcdBurnOptions | 5.5.9.1 |
| nwfcdFSContainer | 5.5.9.1 |
| nwfcdMediaType | 5.5.9.1 |
| nwfcdReserved | 5.5.9.1 |

### 7.1.53. NERO_WRITE_IMAGE

Used when burning an image.

nwiImageLongFileName contains the name of the image file to burn. Supported formats are NRG, ISO and CUE.

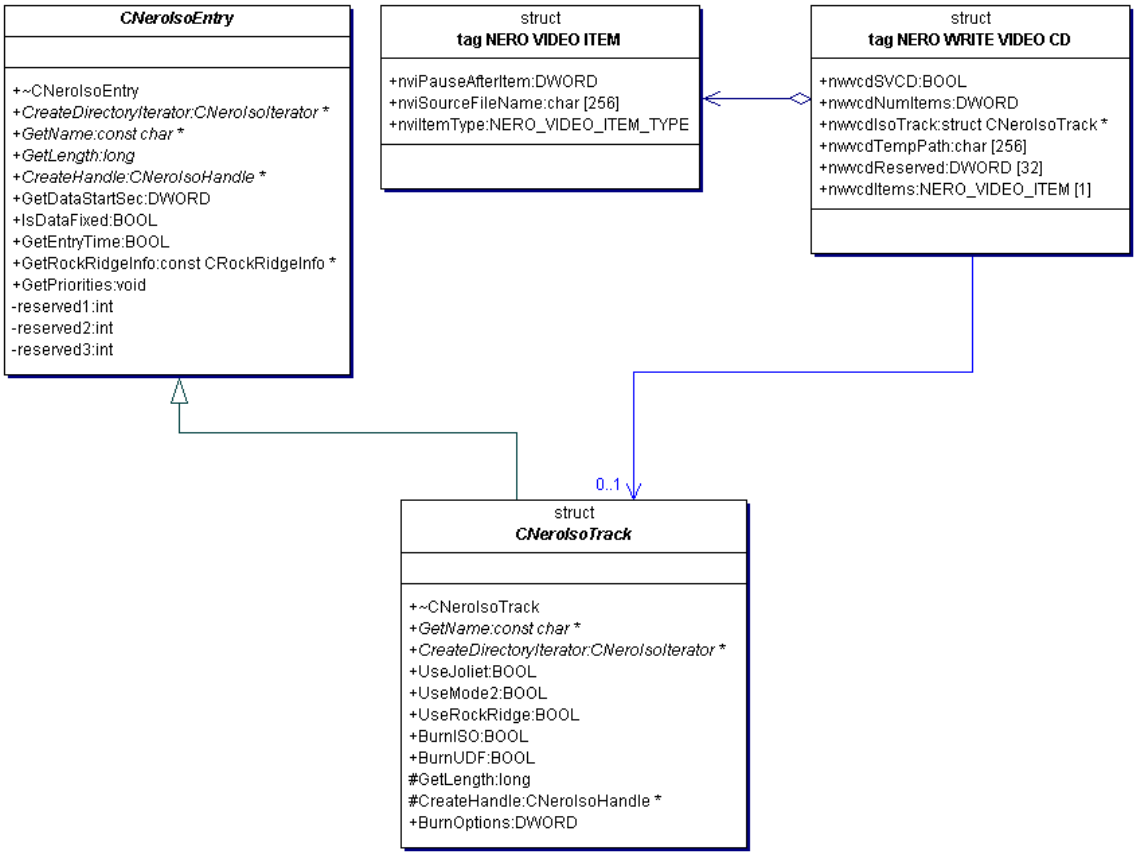
```
typedef struct tag_NERO_WRITE_IMAGE
{
  char nwiImageFileName[252];
  const char *nwiLongImageFileName;
} NERO_WRITE_IMAGE;
```

| Description of structure members | |
|---|---|
| nwiImageFileName | Deprecated, use nwiLongImageFileName instead. |
| nwiLongImageFileName | Name of the NRG file to burn. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_WRITE_IMAGE | 5.0.3.9 |
| nwiImageFileName | 5.5.6.8<br>ISO and CUE possible<br>6.0.0.0<br>Size reduced from 256 to 252 |
| nwiLongImageFileName | 6.0.0.0 |

### 7.1.54. NERO_WRITE_VIDEO_CD

NERO_WRITE_VIDEO_CD is passed to the NeroBurn function in the pWriteCD parameter, when burning video content.



```
typedef struct tag_NERO_WRITE_VIDEO_CD
{
  BOOL  nwvcdSVCD;
  DWORD  nwvcdNumItems;
  struct CNeroIsoTrack  *nwvcdIsoTrack;
  char nwvcdTempPath[252];
  const char *nwvcdLongTempPath;
#ifdef __cplusplus
      VCDEngine::IVCDFSContentGenerator *(*nwvcdCustomVCDEngine)
                (VCDEngine::IVCDMediaDescription*desc,
                 FileSystemContent::IFileSystemDescContainer *pFSDC);
#else
      void *nwvcdCustomVCDEngine;
#endif
  DWORD nwvcdReserved[32];
  NERO_VIDEO_ITEM nwvcdItems[1];
} NERO_WRITE_VIDEO_CD;
```

| Description of structure members | |
|---|---|
| nvcdSVCD | If TRUE, write a SVCD. |
| nwvcdNumItems | Number of Video/Super Video Items. |
| nwvcdIsoTrack | Pointer to an ISO Track. |
| nwvcdTempPath | Deprecated, use nwvcdLongTempPath instead . |
| nwvcdLongTempPath | Where the encoded files will be temporary stored. |
| nwvcdCustomVCDEngine | |
| nwvcdReserved | Should be zero. |
| nwvcdItems | List of Video/Super Video Items. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_WRITE_VIDEO_CD | 5.0.3.9 |
| nwvcdTempPath | 5.5.5.3 |
| nwvcdCustomVCDEngine | 5.5.7.6 |
| nwvcdTempPath | 5.5.5.3<br>Size reduced from 256 to 252. |
| nwvcdLongTempPath | 5.5.5.3 |

### 7.1.55. NEROAPI_BURN_ERROR

This is the return type of the NeroBurn function. It indicates whether the burn process was successful or not, and provides a reason if it failed.

```
typedef enum
{
      NEROAPI_BURN_OK=0,
      NEROAPI_BURN_UNKNOWN_CD_FORMAT,
      NEROAPI_BURN_INVALID_DRIVE,
      NEROAPI_BURN_FAILED,
      NEROAPI_BURN_FUNCTION_NOT_ALLOWED,
      NEROAPI_BURN_DRIVE_NOT_ALLOWED,
      NEROAPI_BURN_USER_ABORT,
      NEROAPI_BURN_BAD_MESSAGE_FILE
} NEROAPI_BURN_ERROR;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NEROAPI_BURN_ERROR | 5.0.3.9 |
| NEROAPI_BURN_BAD_MESSAGE_FILE | 6.0.0.0 |

### 7.1.56. NEROAPI_OPTION

Possible global *Nero* options. Used when calling NeroSetOption.

```
typedef enum
{
  NEROAPI_OPTION_MSG_FILE_NAME,
  NEROAPI_OPTION_WRITE_BUFFER_SIZE ,
  NEROAPI_OPTION_USER_DLG_CALLBACK,
  NEROAPI_OPTION_IDLE_CALLBACK
} NEROAPI_OPTION;
```

| Description of enumerators | |
|---|---|
| NEROAPI_OPTION_MSG_FILE_NAME | Used for changing the file name for the Nero error messages. |
| NEROAPI_OPTION_WRITE_BUFFER_SIZE | Set write buffer size. Value points onto an integer containing the size in byte. |
| NEROAPI_OPTION_USER_DLG_ CALLBACK | Set the user dialog callback, overwriting nstUserDialog of the settings structure passed to NeroInit.<br>Pass a pointer to a NERO_CALLBACK structure as value. After returning, the struct will contain the previous user callback. |
| NEROAPI_OPTION_IDLE_CALLBACK | Set the idle callback, overwriting nstIdle of the settings structure passed to NeroInit.<br>Pass a pointer to a NERO_CALLBACK structure as value. After returning, the struct will contain the previous idle callback. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NEROAPI_OPTION | 5.0.3.9 |
| NEROAPI_OPTION_WRITE_BUFFER_SIZE | 5.5.5.0 |
| NEROAPI_OPTION_USER_DLG_CALLBACK | 6.0.0.0 |
| NEROAPI_OPTION_IDLE_CALLBACK | 6.0.0.0 |

### 7.1.57. NEROAPI_INIT_ERROR

Used when informing the user about the result of a call to NeroInit. Provides some additional information in case of failed initialization.

```
typedef enum
{
  NEROAPI_INIT_OK=0,
  NEROAPI_INIT_INVALID_ARGS,
  NEROAPI_INIT_UNSPECIFIED_ERROR,
  NEROAPI_INIT_INVALID_SERIAL_NUM,
  NEROAPI_INIT_DEMOVERSION_EXPIRED,
  NEROAPI_INIT_ALREADY_INITIALISED,
  NEROAPI_INIT_CANNOT_LOCK
} NEROAPI_INIT_ERROR;
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NERO_INIT_ERROR | 5.0.3.9 |
| NEROAPI_INIT_DEMOVERSION_EXPIRED | 5.5.1.1 |
| NEROAPI_INIT_ALREADY_INITIALISED | 5.5.2.4 |
| NEROAPI_INIT_CANNOT_LOCK | 5.5.5.2 |

### 7.1.58. NEROAPI_SCSI_DEVTYPE

Code to scan the SCSI/IDE bus and get information about the available WORM/CD-ROM drives.

```
typedef enum
{
  NEA_SCSI_DEVTYPE_UNKNOWN,
  NEA_SCSI_DEVTYPE_WORM,
  NEA_SCSI_DEVTYPE_CDROM,
  NEA_SCSI_DEVTYPE_UNSUPPORTED_WORM
} NEROAPI_SCSI_DEVTYPE;
```

| Description of enumerators | |
|---|---|
| NEA_SCSI_DEVTYPE_UNKNOWN | Type information not available |
| NEA_SCSI_DEVTYPE_WORM | Write once. A CD-burner. |
| NEA_SCSI_DEVTYPE_CDROM | Read only. A CD-ROM drive. |
| NEA_SCSI_DEVTYPE_ UNSUPPORTED_WORM | Can write but is not supported by NeroAPI. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NEROAPI_SCSI_DEVTYPE | 5.0.3.9 |
| NEA_SCSI_DEVTYPE_UNSUPPORTED_WORM | 5.5.6.5 |

### 7.1.59. NeroUserDlgInOutEnum

Ask how to proceed by offering the user some choices.

```
typedef enum NeroUserDlgInOutEnum {
      DLG_RETURN_EXIT = 0,
      DLG_RETURN_FALSE = 0,
      DLG_RETURN_TRUE = 1,
      DLG_DISCONNECT,
      DLG_RETURN_ON_RESTART,
      DLG_RETURN_RESTART,
      DLG_RETURN_CONTINUE,
      DLG_DISCONNECT_RESTART,
      DLG_AUTO_INSERT,
      DLG_RETURN_INSTALL_DRIVER,
      DLG_RETURN_OFF_RESTART,
      DLG_RESTART,
      DLG_AUTO_INSERT_RESTART,
      DLG_SETTINGS_RESTART,
      DLG_OVERBURN,
      DLG_AUDIO_PROBLEMS,
      DLG_WAITCD,
      DLG_WAITCD_REMINDER,
      DLG_WAITCD_DONE,
      DLG_COPY_QUALITY_LOSS,
      DLG_COPY_FULLRISK,
      DLG_FILESEL_IMAGE,
      DLG_BURNIMAGE_CANCEL,
      DLG_NON_EMPTY_CDRW,
      DLG_COMP_REC_CONFLICT,
      DLG_WRONG_MEDIUM,
      DLG_ROBO_MOVECD,
      DLG_ROBO_MOVECD_DONE,
      DLG_ROBO_USERMESSAGE,
      DLG_WAITCD_MEDIA_INFO,
      DLG_MAX
} NeroUserDlgInOut;
```

| Description of enumerators | |
|---|---|
| DLG_RETURN_EXIT | Exit application / stop writing. |
| DLG_RETURN_FALSE | False/no. |
| DLG_RETURN_TRUE | True/yes. |
| DLG_DISCONNECT | "Disconnect is turned off in the system |

| Description of enumerators | |
|---|---|
| | configuration.<br>This may cause serious problems while burning: your CD might be damaged, or the system might hang up." |
| DLG_RETURN_ON_RESTART | Turn on disconnect and restart windows. |
| DLG_RETURN_RESTART | Don't change disconnect option and restart windows. |
| DLG_RETURN_CONTINUE | Continue at your own risk.<br>(Use DLG_RETURN_EXIT instead to terminate the process.) |
| DLG_DISCONNECT_RESTART | Same as DLG_DISCONNECT, but restarting has been selected already and must not be canceled, so valid return codes are only DLG_RETURN_ON_RESTART and DLG_RETURN_RESTART. |
| DLG_AUTO_INSERT | "Auto Insert Notification is turned on in the system configuration.<br>This may cause serious problems while burning: your CD might be damaged, or the system might hang up.<br>Nero is able to burn CDs with Auto Insert Notification turned on if all necessary drivers are installed." |
| DLG_RETURN_INSTALL_DRIVER | Install IO driver which temporarily disables auto insert.<br>Note: this only works if the additional argument for the callback is not NULL, otherwise it should not be offered to the user. |
| DLG_RETURN_OFF_RESTART | Change autoinsert and restart Windows. |
| DLG_AUTO_INSERT_RESTART | "Auto Insert Notification is now OFF. You should restart Windows."<br>(displayed after rebooting within program failed and user has to do it manually).<br>The return code is irrelevant. |
| DLG_SETTINGS_RESTART | "Nero detected some modifications of your PC system configuration and needs to modify some settings. Please restart your PC to make<br>the changes become effective."<br>Allowed return values:<br>DLG_RETURN_RESTART<br>DLG_RETURN_CONTINUE |
| DLG_OVERBURN | "Sorry, this compilation contains too much data to fit on the CD with respect to the normal CD capacity. Do you want to try overburn writing at your own risk (this might cause read errors at the end of the CD or might even damage your recorder)?"<br>Note: It is also possible, that SCSI/Atapi errors occur at the end of the simulation or burning. Even in this case there is a certain chance, that the CD is readable. |

| Description of enumerators | |
|---|---|
| | Allowed return values:<br>DLG_RETURN_TRUE<br>DLG_RETURN_FALSE |
| DLG_AUDIO_PROBLEMS | The tracks cannot be written as requested. A detailed description of the problem is found in the "data" parameter.<br>It is a DWORD with bits set according to the AUP (Audio Problem) constants.<br>Return DLG_RETURN_TRUE to fix the problems by adapting the track settings.<br>Return DLG_RETURN_FALSE to stop writing. |
| DLG_WAITCD | This dialog type differs slightly from the other ones:<br>It should pop up a message and return immediately while still showing the message, so that the API can test for the expected CD in the meantime.<br><br>During this time, the NERO_IDLE_CALLBACK will be called to give the application a chance to update its display and to test for user abort.<br>The API might call call DLG_WAITCD several times to change the text.<br><br>The text depends on the "data" argument that is passed to the NERO_USER_DIALOG callback. It is the enumeration NERO_WAITCD_TYPE specified below. |
| DLG_WAITCD_REMINDER | It is time to remind the user of inserting the CD: play a jingle, flash the screen, etc.<br>Called only once after a certain amount of time of no CD being inserted. |
| DLG_WAITCD_DONE | Close the message box again, we are done. |
| DLG_COPY_QUALITY_LOSS | Tell the user that there will be quality loss during the copy and ask if he wants to continue anyway. |
| DLG_COPY_FULLRISK | PROCEED AT YOUR OWN RISK message. |
| DLG_FILESEL_IMAGE | Ask the user the path of the file which will be generated by the Image Recorder.<br>The "data" argument points on a 256 bytes buffer that has to be filled with the image path.<br>Returning DLG_RETURN_EXIT will stop the burn process. |
| DLG_BURNIMAGE_CANCEL | Tell that there is not enough space on disk to produce this image. |
| DLG_NON_EMPTY_CDRW | Tell the user that the CDRW is not empty.<br>Starting from NeroAPI 5.5.3.0, the "data" argument contains the device handle of the recorder.<br>It will only be called if the NBF_DETECT_EMPTY_CDRW flag is given to |

| **Description of enumerators** | |
|---|---|
| | the NeroBurn function.<br>Returning DLG_RETURN_EXIT will stop the burn process.<br>Returning DLG_RETURN_CONTINUE will continue the burn process.<br>Returning DLG_RETURN_RESTART will ask the user for an other CD. |
| DLG_COMP_REC_CONFLICT | Tell the user that the compilation cannot be written on that particular recorder and that the user shoud modify his compilation settings or burn the CD on another recorder, that supports the required medium type. |
| DLG_WRONG_MEDIUM | Another type of medium must be used to burn this compilation. |
| DLG_ROBO_MOVECD | Implementation of the DLG_ROBO_MOVECD dialog types must behave like the DLG_WAITCD type, that is, operate in a non-blocking way.<br>The data structure passed to this callback is specified as * ROBOMOVEMESSAGE below. |
| DLG_ROBO_MOVECD_DONE | Destroy a MoveCD dialog. (void*)data cast to an int will contain the * id of the MoveCD dialog to be removed. |
| DLG_ROBO_USERMESSAGE | Show dialog message transmitted by the Robo driver.<br>Must return one of the constants below.<br>The data structure passed as the data pointer is specified as ROBOUSERMESSAGE below.<br>Return DLG_RETURN_FALSE or DLG_RETURN_TRUE. |
| DLG_WAITCD_MEDIA_INFO | Provide information about which media is expected and which media is currently present in the recorder.<br>The data pointer passed is a pointer on the NERO_DLG_WAITCD_MEDIA_INFO structure.<br>The value returned is ignored. |
| DLG_MAX | Not used. |

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| DLG_COMP_REC_CONFLICT | 5.5.3.2 |
| DLG_WRONG_MEDIUM | 5.5.3.2 |

### 7.1.60. ROBOMOVEMESSAGE

This struct is used in the context of the NeroUserDlgInOut callback.

```
typedef struct
{
   int id;
   ROBOMOVENODE source;
   ROBOMOVENODE destination;
} ROBOMOVEMESSAGE;
```

| Description of structure members | |
|---|---|
| id | In future versions, we may have more than one Robo moving at a time. So this ID identifies the movement action and will be used to remove it with DLG_ROBO_MOVECD_DONE. |
| source | Source position. |
| destination | Destination position. |

### 7.1.61. ROBOMOVENODE

Enumeration of node types.

```
typedef enum
{
   RMN_INPUT,
   RMN_RECORDER,
   RMN_OUTPUT,
   RMN_PRINTER,
   RMN_WASTEBIN
} ROBOMOVENODE;
```

### 7.1.62. ROBOUSERMESSAGE

This struct is used as data parameter when the NeroUserDlgInOut callback is called with the type DLG_ROBO_USERMESSAGE.

```
typedef struct
{
   ROBOUSERMESSAGETYPE message_type;
   const char *message;
} ROBOUSERMESSAGE;
```

| Description of structure members | |
|---|---|
| message_type | The type of message, see ROBOUSERMESSAGETYPE description. |
| message | Message text. |

### 7.1.63. ROBOUSERMESSAGETYPE

This enum type is used by the ROBOUSERMESSAGE struct.

```
typedef enum
{
   RUMT_ERROR,
   RUMT_WARNING,
   RUMT_QUESTION,
   RUMT_HINT
} ROBOUSERMESSAGETYPE;
```

## 7.2. Functions

### 7.2.1. NeroAudioCreateTargetItem

This helper function creates a target item and returns a handle.

```
NEROAPI_API NERO_AUDIO_ITEM_HANDLE NeroAudioCreateTargetItem(int
                                                    iFormatNumber);
```

| Description of parameters | |
|---|---|
| iFormatNumber | The format index number as used with the NeroAudioGetFormatInfo function. |

### 7.2.2. NeroAudioCloseItem

This is a helper function to close an audio target item.

```
NEROAPI_API BOOL  NeroAudioCloseItem(NERO_AUDIO_ITEM_HANDLE hItem);
```

| Description of parameters | |
|---|---|
| hItem | The handle of the item that will be closed. |

### 7.2.3. NeroAudioGetFormatInfo

This helper function retrieves information about audio formats. When it returns false, there are no further formats available.

```
NEROAPI_API BOOL  NeroAudioGetFormatInfo (int iNum,
                                          NERO_AUDIO_FORMAT_INFO *pFI);
```

| Description of parameters | |
|---|---|
| iNum | Format index number, use 0 to retrieve the first available format. |
| pFI | Pass a pointer to a NERO_AUDIO_FORMAT_INFO object, it will be filled with information about the format. |

### 7.2.4. NeroAudioGUIConfigureItem

This function will open a configuration dialog for audio items. Instead of phItem, a value of NULL can be passed to configure the whole plug-in manager.

NeroAudioGUIConfigureItem can only be used from GUI applications.

```
NEROAPI_API NERO_CONFIG_RESULT NeroAudioGUIConfigureItem(
                               NERO_AUDIO_ITEM_HANDLE *phItem, int iNum);
```

| Description of parameters | |
|---|---|
| phItem | An array of handles that belong to configurable items. |
| iNum | The number of configurable items in phItem. |

### 7.2.5. NeroBurn

Burns a media.

```
NEROAPI_BURN_ERROR NADLL_ATTR NeroBurn
(
 NERO_DEVICEHANDLE  aDeviceHandle,
 NERO_CD_FORMAT  CDFormat,
 const void*  pWriteCD,
 DWORD  dwFlags,
 DWORD  dwSpeed,
 NERO_PROGRESS*  pNeroProgress
);
```

| Description of parameters | | |
|---|---|---|
| pwriteCD | Must point on a NERO_WRITE_CD or a NERO_WRITE_VIDEO_CD structure. | |
| dwFlags | Some options for burning: | |
| | NBF_SPEED_TEST | Test speed of source first. |
| | NBF_SIMULATE | Simulate writing before actually writing. |
| | NBF_WRITE | Really write at the end. |
| | NBF_DAO | Write in DAO. |
| | NBF_CLOSE_SESSION | Only close the session, not the whole disc. |
| | NBF_CD_TEXT | Write CD text - will be ignored if not supported by drive. |
| | NBF_BURN_PROOF | Present for compatibility: will enable any buffer underrun protection feature even if it is not "burn proof" |
| | NBF_BUF_UNDERRUN_PROT | Enable safer burn mode. |
| | NBF_DISABLE_ABORT | The abort callback will be called. |
| | NBF_DETECT_NON_EMPTY_CDRW | The DLG_NON_EMPTY_CDRW user callback will be called when trying to burn onto a non empty CDRW. |
| | NBF_DISABLE_EJECT | CD will not be ejected at the end of the burn process. |
| | NBF_VERIFY | Verify Filesystem after writing. Works for ISO only. |
| | NBF_SPEED_IN_KBS | Interpret the dwSpeed as KB/s instead of multiple of 150 KB/s. |
| | NBF_DVDP_BURN_30MM_AT_LEAST | DVD+R/RW high compability mode (at least 1GB will be written) |
| | NBF_CD_TEXT_IS_JAPANESE | If NBF_CD_TEXT and NBF_CD_TEXT_IS_JAPANESE are set, then the CD Text is treated as japanese CD Text. |
| | NBF_BOOKTYPE_DVDROM | If NBF_BOOKTYPE_DVDROM is set, the booktype of a burned DVD will be set to DVDROM |
| dwSpeed | In KB/s if NBF_SPEED_IN_KBS is present, in multiple of 150 KB/s otherwise. | |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroBurn | 5.0.3.9 |
| NBF_DISABLE_EJECT | 5.5.1.1 |
| NBF_SPEED_IN_KBS | 5.5.5.5 |
| NBF_DVDP_BURN_30MM_AT_LEAST | 5.5.8.0 |
| NBF_CD_TEXT_IS_JAPANESE | 5.5.9.17 |
| NBF_BOOKTYPE_DVDROM | 5.5.10.7 |

### 7.2.6. NeroClearErrors

Clear errors and log (done automatically for every read or write function, but can be used to avoid false memory leak warnings).

```
NEROAPI_API void NADLL_ATTR NeroClearErrors ();
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroClearErrors | 5.0.3.9 |

### 7.2.7. NeroCloseDevice

Close a device.

```
NEROAPI_API void NADLL_ATTR NeroCloseDevice(NERO_DEVICEHANDLE
aDeviceHandle);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCloseDevice | 5.0.3.9 |

### 7.2.8. NeroCopyIsoItem

Create a copy of an existing NERO_ISO_ITEM object.

This is a safe way to obtain an exact copy of NERO_ISO_ITEM objects imported from a previous session. Note that the new NERO_ISO_ITEM's extItem, userData and subDirFirstItem members are set to NULL.

```
NEROAPI_API NERO_ISO_ITEM * NADLL_ATTR
NeroCopyIsoItem (const NERO_ISO_ITEM *iso_item);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCopyIsoItem | 5.5.9.9 |

### 7.2.9. NeroCreateIsoItem

Macro for automatically filling the size_t member of NeroCreateIsoItemOfSize.

```
#define NeroCreateIsoItem()  NeroCreateIsoItemOfSize(sizeof(struct
NERO_ISO_ITEM))
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCreateIsoItem | 5.0.3.9 |

### 7.2.10. NeroCreateIsoItemOfSize

Allocates an instance of the NERO_ISO_ITEM structure of size size_t.

```
NEROAPI_API struct NERO_ISO_ITEM * NADLL_ATTR
NeroCreateIsoItemOfSize(size_t);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCreateIsoItemOfSize | 5.0.3.9 |

### 7.2.11. NeroCreateIsoTrackEx

Create an ISO track from a NERO_ISO_ITEM tree.

```
NEROAPI_API struct CNeroIsoTrack * NADLL_ATTR NeroCreateIsoTrackEx(
                                        struct NERO_ISO_ITEM *root,
                                        const char *name,
                                        DWORD flags);
```

| Description of parameters | | |
|---|---|---|
| Root | First item of the root directory. | |
| Name | Name of the CD. | |
| Flags | available constants : | |
| | NCITEF_USE_JOLIET | Create a Joliet Track |
| | NCITEF_USE_MODE2 | Create a Mode 2 Track |
| | NCITEF_USE_ROCKRIDGE | Create a RockRidge Track |
| | NCITEF_CREATE_ISO_FS | Create an ISO File System Track |
| | NCITEF_CREATE_UDF_FS | Create an Universal Disk Format File System Track |
| | NCITEF_CREATE_HFS_FS | Not yet available. |
| | NCITEF_DVDVIDEO_ REALLOC | Perform reallocation of files in the VIDEO_TS directory. |

| Description of parameters | | |
|---|---|---|
| | NCITEF_USE_STRUCT | 'name' points to an argument struct instead of name.<br>For special needs you have to give a pointer to NeroCITEArgs instead of a name, e.g when burning a CD with two different file systems.<br>Set this flag to tell NeroCreateIsoTrackEx that the name is a NeroCITEArgs struct and set the flags for the burn options with NeroCITEArgs::dwBurnOptions.<br>'root' should also be NULL in this case. |
| | NCITEF_RESERVED1 | Reserved for future use. |
| | NCITEF_USE_ALLSPACE | Use all space available on the medium for the volume to be created. Supported for DVD+-RW only. |
| | NCITEF_RESERVED2 | Reserved for future use. |
| | NCITEF_RESERVED3 | Reserved for future use. |
| | NCITEF_RESERVED4 | Reserved for future use. |
| | NCITEF_RELAX_JOLIET | Relax joliet filename length limitations and allow a maximum of 109 characters per filename. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCreateIsoTrackEx | 5.0.3.9 |
| NCITEF_DVDVIDEO_REALLOC | 5.5.7.8 |
| NCITEF_USE_STRUCT | 5.5.9.0 |
| NCITEF_USE_ALLSPACE | 5.5.9.17 |
| NCITEF_RELAX_JOLIET | 5.9.10.17 |

### 7.2.12. NeroCreateProgress

Creates a correctly initialized NERO_PROGRESS structure.

The memory used by the structure must be freed with NeroFreeMem when no longer needed.

```
NEROAPI_API NERO_PROGRESS* NADLL_ATTR NeroCreateProgress();
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroCreateProgress | 6.0.0.0 |

### 7.2.13. NeroDAE

Digital Audio Extraction. Aborting will not be reported by NeroGetLastError. Incomplete target files are not deleted.

```
int NADLL_ATTR NeroDAE
(
 NERO_DEVICEHANDLE  aDeviceHandle,
 DWORD  dwTrackStartBlk,
 DWORD  dwTrackLengthInBlks,
 const  NERO_DATA_EXCHANGE  *pDestDataExchg,
 DWORD  iSpeedInX,
 NERO_CALLBACK*  pNeroProgressCallback
);
```

| **Description of parameters** | |
|---|---|
| iSpeedInX | Speed of extraction, 0 means maximum speed |
| pNeroProgressCallback | Has to be a NERO_PROGRESS_CALLBACK. |

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| NeroDAE | 5.0.3.9 |

### 7.2.14. NeroDone

Call this function before closing the DLL. This is necessary because some clean-up actions like stopping threads cannot be done in the close function of the DLL.

NeroDone returns TRUE if some memory blocks were not unallocated using NeroFreeMem. They are dumped in the debug output.

NeroDone returns FALSE if it succeeded.

```
NEROAPI_API BOOL NADLL_ATTR NeroDone ();
```

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| NeroDone | 5.0.3.9 |
| Return type changed from void to BOOL. | 6.0.0.0 |

### 7.2.15. NeroEjectLoadCD

Returns 0 if successful or an error code if not. FALSE in parameter “eject” loads a CD, TRUE ejects.

```
NEROAPI_API int NADLL_ATTR NeroEjectLoadCD(NERO_DEVICEHANDLE
aDeviceHandle,BOOL eject);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroEjectLoadCD | 5.0.3.9 |

### 7.2.16. NeroEraseCDRW

Erase the loaded CD. With parameter “mode” set to 0 the function will erase the entire CD. If “mode” is set to “1” a quick erase routine will be performed.

**This function is deprecated! Please use NeroEraseDisc instead!**

```
NEROAPI_API int NADLL_ATTR NeroEraseCDRW(NERO_DEVICEHANDLE DeviceHandle,
                                         int mode);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroEraseCDRW | 5.0.3.9 |

### 7.2.17. NeroEraseDisc

Erase the disc inserted in the given recorder.

```
NEROAPI_API int NADLL_ATTR NeroEraseDisc(
                                NERO_DEVICEHANDLE aDeviceHandle,
                                NEROAPI_CDRW_ERASE_MODE mode,
                                 DWORD dwFlags,
                                void *reserved);
```

| Description of parameters | | |
|---|---|---|
| aDeviceHandle | Recorder handle. | |
| mode | Erase mode. | |
| flags | available constants : | |
| | 0 | Default behavior: Eject if the recorder requires it. |
| | NEDF_DISABLE_EJECT | CD will not be ejected at the end of the erasing, even if this is recommended for the selected recorder. |
| | NEDF_EJECT_AFTER_ERASE | Eject disc after erasing, no matter if this is recommended for the recorder or not. |
| reserved | | |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroEraseDisc | 6.0.0.0 |

### 7.2.18. NeroFreeCDStamp

Free a CD stamp allocated by NeroImportIsoTrackEx.

```
NEROAPI_API void NADLL_ATTR NeroFreeCDStamp(void *pCDStamp);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroFreeCDStamp | 5.0.3.9 |

### 7.2.19. NeroFreeIsoItem

Free memory that is used by an instance of the NERO_ISO_ITEM structure.

The memory for NERO_ISO_ITEM.longFileName will be released if NERO_ISO_ITEM.isReference member evaluates to TRUE. This stems from NeroImportDataTrack's behavior, where the NeroAPI allocates longFileName.

```
NEROAPI_API void NADLL_ATTR NeroFreeIsoItem(struct NERO_ISO_ITEM *);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroFreeIsoItem | 5.0.3.9 |

### 7.2.20. NeroFreeIsoTrack

Free an ISO track previously allocated with NeroCreateIsoTrackEx.

```
NEROAPI_API void NADLL_ATTR NeroFreeIsoTrack(struct CNeroIsoTrack
*track);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroFreeIsoTrack | 5.0.3.9 |

### 7.2.21. NeroFreeIsoItemTree

Free an NERO_ISO_ITEM including all linked items.

It is required that all NERO_ISO_ITEMS in the tree have been created by either the NeroCreateIsoItem or the NeroImportDataTrack function.

The memory for NERO_ISO_ITEM.longFileName will be released if NERO_ISO_ITEM.isReference member evaluates to TRUE. This stems from NeroImportDataTrack's behavior, where the NeroAPI allocates memory for longFileName.

```
NEROAPI_API void NADLL_ATTR NeroFreeIsoItemTree(NERO_ISO_ITEM*);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroFreeIsoItemTree | 6.0.0.0 |

### 7.2.22. NeroFreeMem

The *NeroAPI* never uses static memory. Instead, memory is allocated dynamically on behalf of the application, e.g. for strings. This memory has to be freed with this function. Passing NULL is allowed.

```
NEROAPI_API void NADLL_ATTR NeroFreeMem (void *pMem);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroFreeMem | 5.0.3.9 |

### 7.2.23. NeroGetAPIVersion

Version management for this API: Returns 1000 for 1.0.0.0

*Note: This function is obsolete since NeroAPI 5.5.9.9. Use NeroGetAPIVersionEx instead!*

```
NEROAPI_API DWORD NADLL_ATTR NeroGetAPIVersion(void);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetAPIVersion | 5.0.3.9 |

### 7.2.24. NeroGetAPIVersionEx

Fills the pointed numbers (major version high and low, minor version high and low) with the version number and returns true for success. The NeroGetAPIVersion function was extended in *NeroAPI* 5.5.9.9 to support multiple digits. Provide NULL for the “reserved” parameter!

```
NEROAPI_API BOOL NADLL_ATTR NeroGetAPIVersionEx(   WORD *majhi
                                                 ,WORD *majlo
                                                 ,WORD *minhi
                                                 ,WORD *minlo
                                                 ,void *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetAPIVersionEx | 5.5.9.9 |

### 7.2.25. NeroGetAvailableDrivesEx

Gets a list of available WORM and CDROM devices. This list will be freed when calling NeroFreeMem. NeroGetAvailableDrivesEx will return NULL if errors occurred.

The returned information might be inaccurate if another application uses one of the recorders while the identification scan is performed.

Use by another application is indicated by the nsdiDriveError member of NERO_SCSI_DEVICE_INFO being set to NDE_DRIVE_IN_USE.

If the information is inaccurate, it can be updated at a later time by calling NeroUpdateDeviceInfo.

```
NEROAPI_API NERO_SCSI_DEVICE_INFOS * NADLL_ATTR
NeroGetAvailableDrivesEx(NERO_MEDIA_TYPE mediaType, void *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetAvailableDrivesEx | 5.0.3.9 |

### 7.2.26. NeroGetAvailableSpeeds

Get available write speeds depending on medium type, free with NeroFreeMem. Returns NULL for error.

```
NEROAPI_API NERO_SPEED_INFOS * NADLL_ATTR
NeroGetAvailableSpeeds  (NERO_DEVICEHANDLE aDeviceHandle,
                         NERO_ACCESSTYPE accessType,
                         NERO_MEDIA_TYPE mediaType,
                         void *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetAvailableSpeeds | 5.5.9.10 |

### 7.2.27. NeroGetCDInfo

Retrieve a pointer to a NERO_CD_INFO structure for the specified device. The allocated memory for the structure has to be freed by using NeroFreeMem. NULL will be returned if an error occurred.

```
NEROAPI_API NERO_CD_INFO * NADLL_ATTR NeroGetCDInfo
(
  NERO_DEVICEHANDLE aDeviceHandle,
  DWORD dwFlags
);
```

| Description of parameters | | |
|---|---|---|
| aDeviceHandle | Device Handle | |
| dwFlags | available constants : | |
| | NGCDI_READ_CD_TEXT | (1<<0) |
| | NGCDI_READ_ISRC | (1<<1)<br>International Standard Recording Code |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetCDInfo | 5.0.3.9 |
| NGCDI_READ_ISRC | 5.5.8.4 |

### 7.2.28. NeroGetCDRWErasingTime

Returns estimated blanking time for loaded CD-RW in seconds.

```
NEROAPI_API int NADLL_ATTR NeroGetCDRWErasingTime(NERO_DEVICEHANDLE
aDeviceHandle,int mode);
```

| Description of return values | |
|---|---|
| -1 | No CD inserted. |
| -2 | Recorder does not support CDRW. |
| -3 | The inserted media is not rewriteable. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetCDRWErasingTime | 5.0.3.9 |
| Return value “–3” | 5.5.7.4 |

### 7.2.29. NeroGetDeviceOption

Get information about a special low level option from a device, e.g. if a device is capable of changing the booktype of a DVD. The returned value must be freed with NeroFreeMem by the caller.

If the option is not available, NULL is returned. The return type depends on the queried option, for example NERO_DEVICEOPTION_BOOKTYPE_DVDROM will make the returned type BOOL*.

```
NEROAPI_API void* NADLL_ATTR NeroGetDeviceOption(
                                    NERO_DEVICEHANDLE aDeviceHandle,
                                    NERO_DEVICEOPTION aOption,
                                    void* reserved);
```

| Description of parameters | |
|---|---|
| aDeviceHandle | Device Handle. |
| aOption | A device option, e.g. setting the booktype. |
| reserved | Reserved for future use. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetDeviceOption | 5.5.10.7 |

### 7.2.30. NeroGetDiscImageInfo

Get information about a disc image. The result must be released using NeroFreeMem.
In case of an error, NULL is returned.

```
NEROAPI_API NERO_CD_INFO * NADLL_ATTR NeroGetDiscImageInfo(
                                const char *imagePath, void *reserved);
```

| Description of parameters | |
|---|---|
| imagePath | Path to the image file. |
| reserved | Reserved for future use. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetDiscImageInfo | 5.5.9.16 |

### 7.2.31. NeroGetErrorLog

All functions returning a DWORD will return 0 for success and a error number otherwise. These error numbers are opaque and neither can nor should be interpreted by the application. Instead, localized strings are provided for errors and informative displays. The *NeroAPI* keeps a log of such informative messages or errors.

In case of an error, NeroGetLastError will return more information about the last error and NeroGetErrorLog will show all recorded events.

Both functions return NULL if no error is available. Memory is allocated for the string, which has to be freed with NeroFreeMem.

Note: NeroCloseDrive has to throw away all errors, because they might be bound to the driver. Handle errors before calling it!

```
NEROAPI_API char * NADLL_ATTR NeroGetErrorLog ();
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetErrorLog | 5.0.3.9 |

### 7.2.32. NeroGetLastDriveError

Get the last error occured during communication with a drive.

The following methods set this error value:

- NeroGetCDInfo
- NeroImportDataTrack
- NeroEjectLoadCD
- NeroGetCDRWErasingTime
- NeroEraseDisc

All these methods first reset the error value and if an error occured the value is set accordingly.

```
NEROAPI_API void NADLL_ATTR NeroGetLastDriveError( NERO_DRIVE_ERROR
*driveError, void *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetLastDriveError | 6.0.0.0 |

### 7.2.33. NeroGetLastError

If an error occurred, NeroGetLastError will return additional information.

```
NEROAPI_API char * NADLL_ATTR NeroGetLastError ();
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetLastError | 5.0.3.9 |

### 7.2.34. NeroGetLocalizedWaitCDTexts

Returned string must be released using NeroFreeMem. Function may return NULL if type is out of range.

```
NEROAPI_API char * NADLL_ATTR NeroGetLocalizedWaitCDTexts
(NERO_WAITCD_TYPE type);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetLocalizedWaitCDTexts | 5.5.9.10 |

### 7.2.35. NeroGetTypeNameOfMedia

Get a string describing the given bit field of supported media. Free the string with NeroFreeMem.

```
NEROAPI_API char *NADLL_ATTR NeroGetTypeNameOfMedia(
                                                    NERO_MEDIA_SET media,
                                                    void *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroGetTypeNameOfMedia | 5.0.3.9 |
| NeroGetTypeNameOfMedia | 5.5.9.4:<br>Changed signature and behavior. Old version:<br>NeroGetTypeNameOfMedia (DWORD media,const char *separator);<br>With the current version, the separator of the current system language is used. This might cause problems if old code relies on the use of a special separator. |

### 7.2.36. NeroGetWaitCDTexts

For a given NERO_WAITCD_TYPE a matching text message is returned.

**This function is deprecated! Please use use NeroGetLocalizedWaitCDTexts instead since it returns a localized string.**

```
static const char *NeroGetWaitCDTexts (NERO_WAITCD_TYPE type)
```

### 7.2.37. NeroImportDataTrack

Create a NERO_ISO_ITEM tree from an already existing ISO track in order to create a new session with reference to files from older sessions.

```
NEROAPI_API NERO_ISO_ITEM *NADLL_ATTR NeroImportDataTrack(
                              NERO_DEVICEHANDLE pRecorder,
                              DWORD trackNumber,
                              void **ppCDStamp,
                              NERO_IMPORT_DATA_TRACK_INFO *pInfo,
                              DWORD flags,
                              NERO_IMPORT_DATA_TRACK_RESULT *result,
                              void *reserved);
```

| Description of parameters | | |
|---|---|---|
| pRecorder | First item of the root directory. | |
| trackNumber | Name of the CD. | |
| ppCDStamp | *ppCDStamp will be filled with a pointer on a CDStamp object which will have to be freed later. | |
| pInfo | Will be filled with information about the imported track. | |
| flags | available constants : | |
| | NIITEF_IMPORT_ROCKRIDGE | Will be ignored, RockRidge is now always imported if present. |
| | NIITEF_IMPORT_ISO_ONLY | |
| | NIITEF_PREFER_ROCKRIDGE | Will be ignored. |
| | NIITEF_IMPORT_UDF | Import UDF Session. |
| result | Will contain a result flag, may be NULL. | |
| reserved | Must be NULL. | |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroImportDataTrack | 5.9.9.9 |
| pInfo | 5.9.9.9 |
| Result | 5.9.9.9 |

### 7.2.38. NeroImportIsoTrackEx

Create a NERO_ISO_ITEM tree from an already existing ISO track in order to create a new session with reference to files from older sessions.

**This function is deprecated! Please Use NeroImportDataTrack instead!**

```
NEROAPI_API NERO_ISO_ITEM *NeroImportIsoTrackEx(
                                        NERO_DEVICEHANDLE pRecorder,
                                        DWORD trackNumber,
                                        void **ppCDStamp,
                                        DWORD flags);
```

| Description of parameters | | |
|---|---|---|
| pRecorder | First item of the root directory. | |
| trackNumber | Name of the CD | |
| ppCDStamp | *ppCDStamp will be filled with a pointer on a CDStamp object which will have to be freed later | |
| flags | available constants : | |
| | NIITEF_IMPORT_ROCKRIDGE | Will be ignored, RockRidge is now always imported if present. |
| | NIITEF_IMPORT_ISO_ONLY | |
| | NIITEF_PREFER_ROCKRIDGE | Will be ignored. |
| | NIITEF_IMPORT_UDF | Import UDF Session. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroImportIsoTrackEx | 5.0.3.9 |

### 7.2.39. NeroInit

Initialize the DLL. Must be successful before any of the remaining functions can be called. Settings structure and strings it points to are not copied and function callbacks must be available all the time.
Provide NULL for the “reserved” parameter!

Make sure to keep **all** the data including the strings valid as long as you are using *NeroAPI*, since Nero will only store a pointer to the NERO_SETTINGS structure, not make a copy.

```
NEROAPI_API NEROAPI_INIT_ERROR NADLL_ATTR NeroInit (const NERO_SETTINGS
*pNeroSettings, const char *reserved);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroInit | 5.0.3.9 |

### 7.2.40. NeroIsDeviceReady

This function returns a NERO_DRIVE_ERROR.

```
NEROAPI_API int NADLL_ATTR NeroIsDeviceReady(NERO_DEVICEHANDLE
aDeviceHandle);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroIsDeviceReady | 5.0.3.9 |

### 7.2.41. NeroOpenDevice

Open a device. This function returns NULL if errors have occurred.

In general, an application may not access devices from multiple threads simultaneously. Even if NeroOpenDevice allows to obtain more than one handle for a device, the different handles may not be used at the same time.

However, here is an example of a case where it is legal to do so:
When the *NeroAPI* calls the user dialog callback with DLG_NON_EMPTY_CDRW as type, it is permitted to delete the CD-RW with NeroEraseCDRW.

```
NEROAPI_API NERO_DEVICEHANDLE NADLL_ATTR NeroOpenDevice(const
NERO_SCSI_DEVICE_INFO* pDevInfo);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroOpenDevice | 5.0.3.9 |

### 7.2.42. NeroRegisterDriveChangeCallback

Register a callback which is called whenever a drive was removed or added in the system. Use NeroGetAvailableDrivesEx to get the current list of drives in the system.

NOTE: In some rare cases NeroAPI does not get this information from the OS and will therefore never notify the callback if a drive has been added/removed.

```
NEROAPI_API int NADLL_ATTR NeroRegisterDriveChangeCallback(
                                    NERO_DRIVESTATUS_CALLBACK callback,
                                    void *pUserData);
```

| Description of parameters | |
|---|---|
| callback | The callback to be called when a drive is removed or added.<br>The callback needs to be thread safe, since it might be called from a different thread. |
| pUserData | Data passed to the callback. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroRegisterDriveChangeCallback | 6.0.0.0 |

### 7.2.43. NeroRegisterDriveStatusCallback

Register a callback which is called whenever the specified status of a drive is changed. This function returns 0 for success.

Please see the documentation of NERO_DRIVE_STATUS_TYPE for restrictions of the notifications.

```
NEROAPI_API int NADLL_ATTR NeroRegisterDriveStatusCallback(
                                NERO_DRIVESTATUS_TYPE status,
                                const NERO_SCSI_DEVICE_INFO *pDeviceInfo,
                                NERO_DRIVESTATUS_CALLBACK callback,
                                void *pUserData);
```

| Description of parameters | |
|---|---|
| status | The status the application is interested in. |
| pDeviceInfo | The drive for which the status change should be notified. The pointer can be freed afterwards. |
| callback | The callback needs to be thread safe, since it might be called from a different thread. |
| pUserData | Data passed to the callback. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroRegisterDriveStatusCallback | 6.0.0.0 |

### 7.2.44. NeroSetDeviceOption

Set a special option for a device. Returns 0 on success.

For example, by providing NERO_DEVICEOPTION_BOOKTYPE_DVDROM in the aOption parameter, the booktype can be changed to DVDROM - if the device allows it.

```
NEROAPI_API int NADLL_ATTR NeroSetDeviceOption(
                              NERO_DEVICEHANDLE aDeviceHandle,
                              NERO_DEVICEOPTION aOption,
                              void *value);
```

| Description of parameters | |
|---|---|
| aDeviceHandle | The handle of a device. |
| aOption | A device option, e.g. setting the booktype. |
| Value | A pointer to an option specific type.<br>E.g. when used to change the booktype, the parameter is expected to be BOOL*. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroSetDeviceOption | 5.5.10.7 |

### 7.2.45. NeroSetExpectedAPIVersion

Using this function, an application can tell *NeroAPI* for which version of *NeroAPI* it was designed to work. *NeroAPI* then tries to behave like this version as much as possible. This ensures the binary compatibility with future versions of *NeroAPI*. If this function is not called, *NeroAPI* will behave as *NeroAPI 5.0.3.9*. If your application uses the NeroAPIGlue, this function will be called automatically.

*Note: This function is obsolete since NeroAPI 5.5.9.9. Use NeroSetExpectedAPIVersionEx instead!*

```
NEROAPI_API void NADLL_ATTR NeroSetExpectedAPIVersion(DWORD);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroSetExpectedAPIVersion | 5.0.3.9 |

### 7.2.46. NeroSetExpectedAPIVersionEx

Using this function, an application can tell *NeroAPI* for which version of *NeroAPI* it was designed to work. *NeroAPI* then tries to behave like this version as much as possible. This ensures the binary compatibility with future versions of *NeroAPI*. If this function is not called, *NeroAPI* will behave as *NeroAPI 5.0.3.9*. If your application uses the NeroAPIGlue, this function will be called automatically.

It returns true for success. Provide NULL for the “reserved” parameter!

NeroSetExpectedAPIVersion was extended in *NeroAPI* 5.5.9.9 to support multiple digits.

If pPrevExpectedVersion is not NULL, it must point onto an array of 4 WORDs that will be filled with the previously expected version number.

```
NEROAPI_API BOOL NADLL_ATTR NeroSetExpectedAPIVersionEx( WORD majhi
                                                        ,WORD majlo
                                                        ,WORD minhi
                                                        ,WORD minlo
                                                        ,void reserved
                                                ,WORD *pPrevExpectedVersion);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroSetExpectedAPIVersionEx | 5.5.9.9 |
| pPrevExpectedVersion | 6.0.0.0 |

### 7.2.47. NeroSetOption

Used to set global Nero options such as the name of the message text file.

```
NEROAPI_API int NADLL_ATTR NeroSetOption(NEROAPI_OPTION option,void
*value);
```

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroSetOption | 5.0.3.9 |

### 7.2.48. NeroUpdateDeviceInfo

Update the information about a drive. The use of this function is only required when a drive was blocked by another application during identification (drive in use).

```
NEROAPI_API NERO_DRIVE_ERROR NADLL_ATTR NeroUpdateDeviceInfo(
                                        NERO_SCSI_DEVICE_INFO *devInfo,
                                        NERO_MEDIA_TYPE mediaType,
                                        void *reserved);
```

| Description of parameters | |
|---|---|
| devInfo | The device info to update. |
| mediaType | The media type to update the speed infos with. |
| reserved | Must be NULL. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroUpdateDeviceInfo | 6.0.0.0 |

### 7.2.49. NeroUnregisterDriveChangeCallback

Unregister a callback which was registered with NeroRegisterDriveChangeCallback.

```
NEROAPI_API int NADLL_ATTR NeroUnregisterDriveChangeCallback(
                                    NERO_DRIVESTATUS_CALLBACK callback,
                                    void *pUserData);
```

| Description of parameters | |
|---|---|
| callback | The callback to be called when a drive is removed or added. |
| pUserData | Data passed to the callback. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroUnregisterDriveChangeCallback | 6.0.0.0 |

### 7.2.50. NeroUnregisterDriveStatusCallback

Unregister a callback.

```
NEROAPI_API int NADLL_ATTR NeroUnregisterDriveStatusCallback(
                                NERO_DRIVESTATUS_TYPE status
                                const NERO_SCSI_DEVICE_INFO *pDeviceInfo,
                                 NERO_DRIVESTATUS_CALLBACK callback,
                                void *pUserData);
```

| Description of parameters | |
|---|---|
| status | The status the application is interested in. |
| pDeviceInfo | The drive for which the status was notified. The pointer does not need to be the same as in NeroRegisterDrivestatusCallback, but has to represent the same drive. |
| callback | The callback to be called if the status changed. |
| pUserData | Data passed to the callback. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroUnregisterDriveStatusCallback | 6.0.0.0 |

### 7.2.51. NeroUserDlgInOut

This function gets a requester type and shall return a suitable response to it. Depending on the "type", "data" might contain additional information.

Argument passing is in standard C order (on the stack, right to left), aka MS Visual++ __cdecl.

```
typedef NeroUserDlgInOut (NERO_CALLBACK_ATTR *NERO_USER_DIALOG)
                                                (void *pUserData,
                                                 NeroUserDlgInOut type,
                                                 void *data);
```

### 7.2.52. NeroWaitForMedia

Use the nstUserDialog callback functions to request a CD. Returns FALSE if the burn process should be aborted.

```
NEROAPI_API BOOL NADLL_ATTR NeroWaitForMedia (
                                    NERO_DEVICEHANDLE aDeviceHandle,
                                    NERO_MEDIA_SET nms,
                                    DWORD dwFlags,
                                    void *pCDStamp);
```

| Description of parameters | |
|---|---|
| nms | Media types requested. |
| dwFlags | Set of NBF_ flags. |
| pCDStamp | Optional stamp of requested media. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| NeroWaitForMedia | 5.5.9.4 |

# 8. ISO Track Creation

When working with the *NeroAPI*, there are three ways for creating ISO tracks:

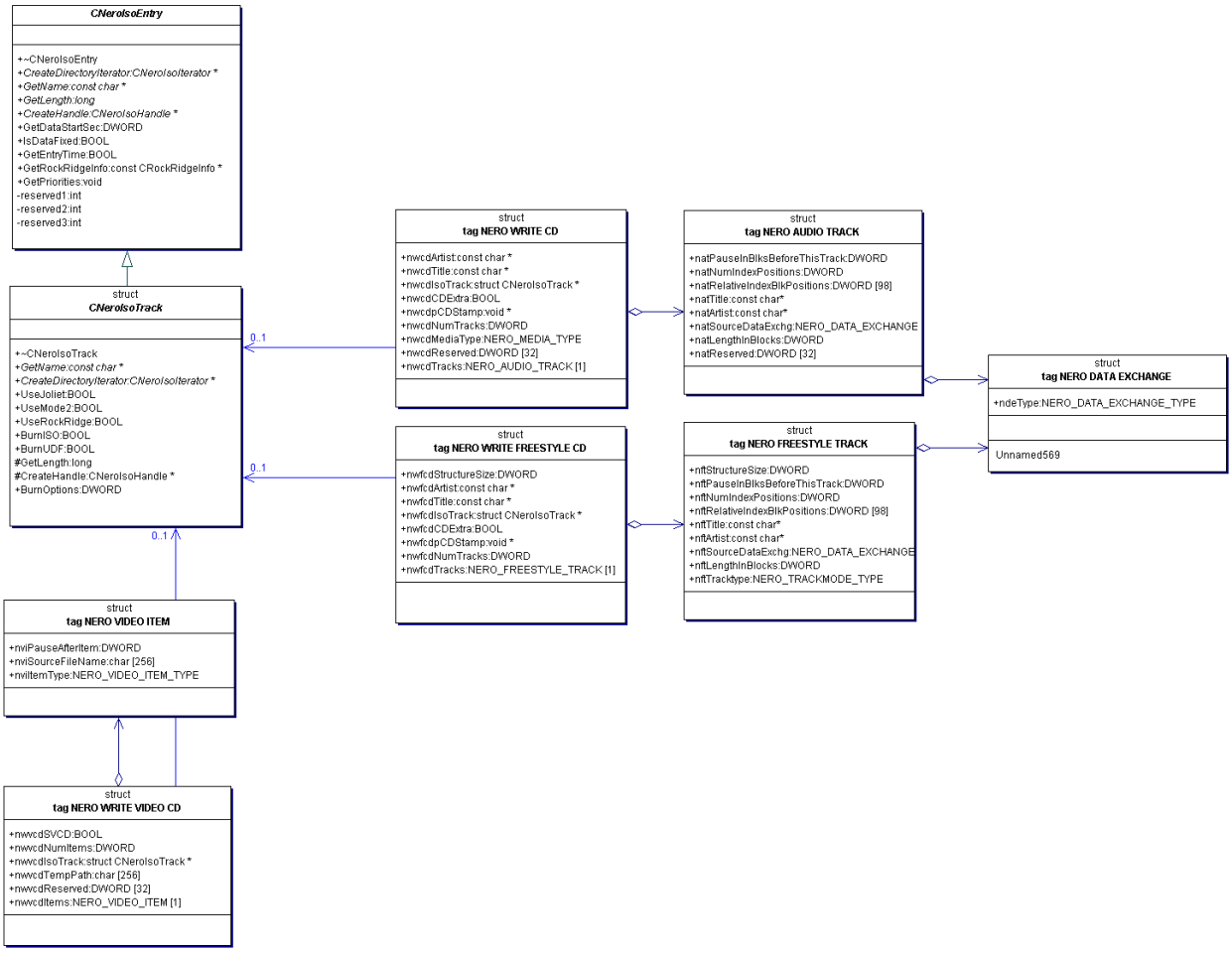
1. By creating classes derived from those declared in NeroIsoTrack.h, and putting a pointer to an instance into the NERO_WRITE_CD structure.
2. By creating a tree of NERO_ISO_ITEMs, and creating an CNeroIsoTrack object, using the NeroCreateIsoTrackEx function
3. By creating an instance of an IFileSystemDescContainer object, using the NeroCreateFileSystemContainer function, adding files to this object through the interfaces declared in NeroFileSystemContent.h, and then using the NERO_WRITE_FILE_SYSTEM_CONTENT structure.

These three interfaces have been created for different needs and coexist in *NeroAPI*.

# 9. ISO Track Classes

The following classes are used to write an ISO 9660/Joliet track. In contrast to most of the rest of the *NeroAPI*, the ISO Track interface is not written in pure C, but C++. Thus, the Nero ISO Track feature can only be used by C++ code.

## 9.1. Overview



## 9.2. CNeroDataCallback

The application has to specify the complete layout of the ISO track. The *NeroAPI* does not care at all where the data for the files comes from. This also means that the application has to provide access to the filename, or the data itself, when the API needs it. Data can be fed into the API directly (i.e. without intermediate files) with CNeroDataCallback.

```
class CNeroDataCallback
{
public:
   virtual ~CNeroDataCallback () {}
   virtual DWORD IOCallback(BYTE *pBuffer, DWORD dwLen) = 0;
   virtual BOOL EOFCallback ()                          = 0;
   virtual BOOL ErrorCallback ()                        = 0;
};
```

| Description of class member functions | |
|---|---|
| IOCallback | same semantic as NERO_IO_CALLBACK in "NeroAPI.h" |
| EOFCallback | same semantic as NERO_IO.nioEOFCallback |
| ErrorCallback | same semantic as NERO_IO.nioErrorCallback |

## 9.3. CNeroIsoHandle

The API builds an internal representation of the complete ISO tree and uses a CNeroIsoHandle, acquired from the application for each file, to access the data later.

```
class CNeroIsoHandle
{
public:
   virtual ~CNeroIsoHandle () {}
   virtual CNeroIsoHandle * Clone ()                                    = 0;
   virtual int GetFileName (char *strBuffer, UINT nBufferSize)          = 0;
   virtual CNeroDataCallback * Open ()                                  = 0;
};
```

| Description of class member functions | |
|---|---|
| Clone | Creates a copy of the CNeroIsoHandle object. |
| GetFileName | If the application wants the API to read files, it has to fill the buffer of size nBufferSize with a null-terminated string and return the length of the full name, even if the given buffer was too small.<br>The API will try again with a larger buffer then.<br>Return 0 in GetFileName if you want to provide the data via a CNeroDataCallback |
| Open | Return instance ready to read the data associated with this handle or NULL for error; this instance will be deleted by NeroAPI;<br>usually only one file at once will be left open |

## 9.4. CNeroIsoIterator

Iterators are used to walk through directories while the API builds its internal copy of the tree. Iterators point to an entry or to NULL, if the last entry was passed, and can only be incremented.

```
class CNeroIsoEntry;
class CNeroIsoIterator
{
public:
   virtual ~CNeroIsoIterator () {}
   virtual CNeroIsoEntry * GetCurrentEntry ()      = 0;
   virtual void Next ()                            = 0;
};
```

| Description of class member functions | |
|---|---|
| GetCurrentEntry | Get pointer to current entry or NULL if last one passed; entry not deleted by API, so the iterator may point to itself and implement the required interface (as in the *NeroAPI* demo), or to some permanent entry. |
| Next | Go to next entry. |

## 9.5. CNeroIsoEntry

```
struct CImportInfo;
class CNeroIsoEntry
{
public:
   virtual ~CNeroIsoEntry () {}

   virtual CNeroIsoIterator * CreateDirectoryIterator() = 0;
   virtual const char *       GetName ()                = 0;
   virtual __int64            GetLength ()              = 0;
   virtual CNeroIsoHandle *   CreateHandle ()           = 0;
   virtual DWORD GetDataStartSec() { return 0;}
   virtual BOOL IsDataFixed() { return FALSE;}
   virtual BOOL GetEntryTime(struct tm *tm) {return FALSE;}
   virtual const CImportInfo *GetImportInfo() const
    {return NULL;};
   virtual void GetPriorities(int &iPriority,int &iDirPriority)
   {
     iPriority      =0;
     iDirPriority   =0;
   };
   virtual CNeroIsoIterator * CreateDirectoryIteratorWrapper()
                              { return NULL;    }
   virtual CNeroIsoHandle *   CreateResourceHandle ()
                              { return NULL; };
   virtual const WCHAR* GetUnicodeName() { return 0; } //
```

```
private:
   virtual int reserved1()       {return 0;}
};
```

| Description of class member functions | |
|---|---|
| CreateDirectoryIterator | NULL if no directory, otherwise an iterator to step through all child entries; iterator will be deleted by NeroAPI. |
| GetName | The name for this entry; will be copied by API. |
| GetLength | The size of this entry in bytes, or -1 if a directory. |
| CreateHandle | Creates a handle stored by the API to open a file later, NULL for directory; handle will be deleted by *NeroAPI* when deleting the internal ISO tree. |
| GetDataStartSec | Can be used to reference files from previous session. Not fully implemented yet. |
| IsDataFixed | Can be used to reference files from previous session. |
| GetEntryTime | Can be used to reference files from previous session. |
| GetImportInfo | This method was formerly known as GetRockRidgeInfo. The object returned is a bit different internally now. Since it is a private structure of *NeroAPI* this change does not matter.<br>No ImportInfo by default |
| GetPriorities | |
| CreateDirectoryIteratorWrapper | This function is equivalent to CreateDirectoryIterator but reurns an iterator for the wraper file system of a CD, e.g. when creating HFS+ CDs with an HFS wrapper file system. |
| CreateResourceHandle | See CreateHandle. Creates rsc fork handle for HFS filesystems.<br>Will be preferred to reading the resource fork from the file specified by GetName if different from NULL. |
| GetUnicodeName | The name for this entry in unicode format; will be copied by the API. |
| reserved1 | Reserved for future use. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| CreateDirectoryIteratorWrapper | 5.5.9.0 |
| CreateHandle | 5.5.9.0 |
| GetUnicodeName. | 6.0.0.0 |

## 9.6. CNeroIsoTrack

An ISO track is a special directory entry.

```
struct CNeroIsoTrack : public CNeroIsoEntry
{
   friend class CNeroIsoTrackProxy5039;
   friend class CNeroIsoTrackProxy55915;

public:
   ~CNeroIsoTrack () {}

   virtual const char *       GetName () = 0;
   virtual CNeroIsoIterator * CreateDirectoryIterator () = 0;

   virtual BOOL               UseJoliet () { return TRUE; }
   virtual BOOL               UseMode2 () { return FALSE; }

   virtual BOOL               UseRockRidge () { return FALSE; }
   virtual BOOL               BurnISO() { return TRUE; }
   virtual BOOL               BurnUDF() { return FALSE; }

protected:
   virtual __int64            GetLength () { return -1; }
   virtual CNeroIsoHandle *   CreateHandle () { return NULL; }
   virtual CNeroIsoHandle *   CreateResourceHandle () { return NULL; }

public:
   virtual DWORD              BurnOptions()
     {
         return (UseJoliet() ? NCITEF_USE_JOLIET : 0)
                |(UseMode2() ? NCITEF_USE_MODE2 : 0)
                |(UseRockRidge() ? NCITEF_USE_ROCKRIDGE : 0)
                |(BurnISO() ? NCITEF_CREATE_ISO_FS : 0)
                |(BurnUDF() ? NCITEF_CREATE_UDF_FS : 0);
     };

   virtual CNeroIsoIterator *CreateDirectoryIteratorWrapper()
   { return NULL; }

   virtual BOOL HasWrapper(void)
   { return FALSE; }

   virtual const void *dummy() const { return NULL; };
```

```
   virtual void GetVolumeDescriptor(const char **systemIdentifier,
                    const   char **volumeSet, const char **publisher,
                    const char **dataPreparer, const char **application,
                    const char **copyright, const char **abstract,
                    const char **bibliographic)
   {
         *systemIdentifier = 0;
         *volumeSet = 0;
         *publisher = 0;
         *dataPreparer = 0;
         *application = 0;
         *copyright = 0;
         *abstract = 0;
         *bibliographic = 0;
   }
        virtual int reserved1() { return 0;}
        virtual int reserved2() { return 0;}
        virtual int reserved3() { return 0;}
        virtual int reserved4() { return 0;}
        virtual int reserved5() { return 0;}
        virtual int reserved6() { return 0;}
        virtual int reserved7() { return 0;}
        virtual int reserved8() { return 0;}
};
```

| **Description of class member functions** | |
|---|---|
| GetName | Essential function. ISO volume name, copied by API. |
| CreateDirectoryIterator | Essential function. Iterator for root directory; will be deleted by API. |
| UseJoliet | Function returns resonable default. TRUE if track shall contain Joliet names in addition to ISO. |
| UseMode2 | Function returns resonable default. TRUE if track shall be written as mode 2/XA. |
| UseRockRidge | Function returns resonable default. RockRidge requires additional informations, so it is off by default. |
| BurnISO | Function exists from *NeroAPI* version 5.5.0.0. TRUE if ISO should be created. |
| BurnUDF | Function exists from *NeroAPI* version 5.5.0.0. TRUE if UDF should be created. |
| GetLength | Function exists from *NeroAPI* version 5.5.0.0. Returns value for directory. |
| CreateHandle | Return NULL, so object cannot be read. |
| CreateResourceHandle | CNeroIsoTrack is a special directory, so no file handle is available and NULL is returned. |
| BurnOptions | From *NeroAPI* version 5.5.1.2 you can set your burn options simply by redefining this function instead of UseJoliet, UseMode2, UseRockRidge, BurnISO and BurnUDF.<br>See 0 NeroCreateIsoTrackEx for the significance of the NCITEF flags. |
| dummy | This method is for internal use only. Do not reimplement it! |
| GetVolumeDescriptor | NeroAPI will call this method to determine whether that information exists. If it does, it will be used during the creation of the media.<br>To provide this information, either derive a class from CNeroIsoTrack and overwrite this function or provide it when you call NeroCreateIsoTrack.<br>This information is identical to what Nero displays on the “Label” tab of an ISO compilation. |

| **Identifier** | **Introduced in *NeroAPI* version** |
|---|---|
| CreateDirectoryIteratorWrapper | 5.5.9.0 |
| HasWrapper | 5.5.9.0 |
| CreateResourceHandle | 5.5.9.2 |
| GetBootInfo | 5.5.9.16 |
| GetVolumeDescriptor | 5.5.10.2 |

# 10. The FileSystemContent Interface

This is the third *NeroAPI* interface for preparing data CDs/DVDs. Unlike NeroIsoTrack.h, it is not much "callback based", thus most of the process will be driven by the application, making it easier to write. This interface is closely connected to the internal engine of *NeroAPI*; this improves the cooperation of *NeroAPI* and the application.

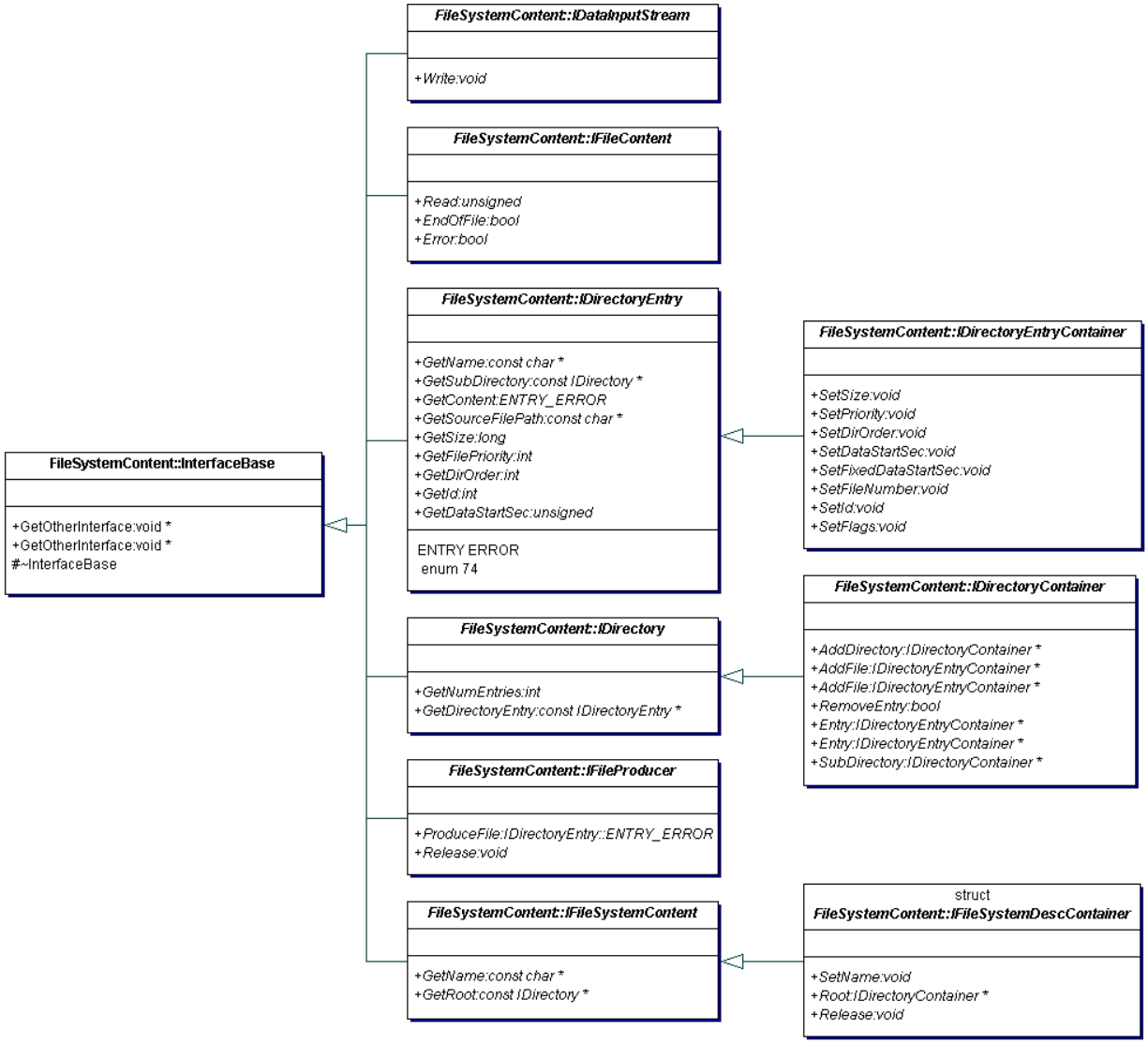
This set of classes describes the content of the file system of a disc. The application will build a file structure using the IFileSystemContent object.

During the burn process, *NeroAPI* will request the content of files using the IFileContent interface.

Use the NeroCreateFileSystemContainer function of NeroAPI.h to get an instance of an IFileSystemDescContainer object.

Then, use the NERO_WRITE_FILE_SYSTEM_CONTAINER structure to burn the file structure created.

## 10.1. Overview



## 10.2. Namespace setting

To make sure we do not interfere with other classes we use the namespace “FileSystemContent” for this group of interfaces.

```
namespace FileSystemContent
```

## 10.3. InterfaceBase

GetOtherInterface returns a different interface for the same object. This will be used to extend the DLL interface without loosing binary compatibility. The function returns NULL if no interface with this ID was found. This is inspired from the COM QueryInterface function.
A different interface can be requested by providing an ID number or a string. Currently no other interfaces are available by default.

```
class InterfaceBase
{
public:
  virtual void *GetOtherInterface(int interfaceId)            const
  {
         return 0;
  }
  virtual void *GetOtherInterface(const char *interfaceName)  const
  {
         return 0;
  }

protected:
  virtual ~InterfaceBase() {}
};
```

## 10.4. File System Reading Interfaces

This first set of interfaces will be used by the burn engine to read the content of the file system.

### 10.4.1. IFileContent

Release will be called by the application when the object is not needed anymore

```
class IFileContent : public InterfaceBase
{
public:
      virtual unsigned Read(void *pBuffer,unsigned length) =0;
      virtual bool EndOfFile()                             =0;
      virtual bool Error()                                 =0;

      virtual void Release()                               =0;
};
```

### 10.4.2. IDirectoryEntry

GetName returns a file or directory name.

GetSourceFilePath returns the source file path, NULL if the file is generated.

GetId returns an Id number that can be used to find the file again later.

```
class IDirectoryEntry : public InterfaceBase
{
public:
      enum ENTRY_ERROR
      {
            ENTRY_NO_ERROR,
            SEQUENCING_ERROR,
            ERROR_NOT_A_FILE,
            NOT_AVAILABLE,
            INTERFACE_ERROR
      };

      enum
      {
            MODE2_FORM2                   =1<<0,
            FIXED_INSIDE_VOLUME_SPACE     =1<<1,
            FIXED_OUTSIDE_VOLUME_SPACE    =1<<2,
            NO_OWN_CONTENT                =1<<3
      };

      virtual const char *GetName()                  const =0;
```

```
      virtual const IDirectory *GetSubDirectory()     const =0;
      virtual ENTRY_ERROR GetContent(IFileContent **)const =0;
      virtual const char *GetSourceFilePath()         const =0;
      virtual __int64   GetSize()                     const =0;
      virtual int GetFilePriority()                   const =0;
      virtual int GetDirOrder()                       const =0;
      virtual int GetId()                             const =0;
      virtual unsigned GetDataStartSec()              const =0;
};
```

| Description of enumerators | |
|---|---|
| SEQUENCING_ERROR | Indicates that the content for this file may not be requested at this moment. |
| ERROR_NOT_A_FILE | This entry is not a file |
| NOT_AVAILABLE | The content of this file cannot be requested at all. |
| INTERFACE_ERROR | The overriden function has tried to get an other interface for one object and has failed. |
| FEATURE_NOT_AVAILABLE | This feature is not available for this file system type. |

| Identifier | Introduced in *NeroAPI* version |
|---|---|
| FEATURE_NOT_AVAILABLE | 5.5.8.2 |
| NO_OWN_CONTENT | 5.5.9.4 |

### 10.4.3. IDirectory

```
class IDirectory : public InterfaceBase
{
public:
      virtual int GetNumEntries()                               const =0;
      virtual const IDirectoryEntry *GetDirectoryEntry(int i) const =0;
};
```

### 10.4.4. IFileSystemContent

GetName returns the volume name.

```
class IFileSystemContent : public InterfaceBase
{
public:
      virtual const char *GetName()       const =0;
      virtual const IDirectory *GetRoot() const =0;
};
```

## 10.5. File System Content Creation Interfaces

This second set of interfaces will be used by the application to produce the content of the file system.

### 10.5.1. IDataInputStream

This interface allows the file producer to return the data.

```
class IDataInputStream : public InterfaceBase
{
public:
      virtual void Write(const void *buffer,int size)= 0;
};
```

### 10.5.2. IFileProducer

Produce the content of a file. This interface must be derived and its implementation must create the content of the file in the ProduceFile function.

Calling ProduceFile will automatically update the file size to the amount of data delivered by the producer.

Release will be called by the *NeroAPI* when the object is not needed anymore

```
class IFileProducer : public InterfaceBase
{
public:
      virtual IDirectoryEntry::ENTRY_ERROR ProduceFile(
              IDataInputStream *str) const = 0;

      virtual void Release()         const = 0;
};
```

### 10.5.3. IDirectoryEntryContainer

This interface provides the means of describing a file. Using the SetSize function, the file size can be changed after having added the entry to the directory.

If the file entry was created using an IFileProducer object, this one can be retrieved using GetOtherInterface.

SetDataStartSec sets the sector number that will be saved into the directory structure.

SetFixedDataStartSec sets the physical position of the file in the filesystem.

Setpriority and SetDirOrder can be used to re-adjust the directory priority. Priority numbers will be used in upward order: the file with smaller values first.

SetFlags enables or disables the given flag.

```
class IDirectoryEntryContainer : public IDirectoryEntry
{
public:
      enum
      {
        IID_IDirectoryEntryContainer,
        IID_IFileProducer,
        IID_IDirectoryEntryContainer2,
        IID_IDirectoryEntry2
      };
      virtual void SetSize(__int64 size)                    =0;

      virtual void SetPriority(int priority)                =0;
      virtual void SetDirOrder(int directoryPriority)       =0;
      virtual void SetDataStartSec(unsigned)                =0;
      virtual void SetFixedDataStartSec(unsigned)           =0;
      virtual void SetFileNumber(int)                       =0;
      virtual void SetId(int)                               =0;
      virtual void SetFlags(bool enable,unsigned f)         =0;
};
```

### 10.5.4. IDirectoryContainer

This interface represents the content of a directory. AddDirectory returns a pointer to the directory, directoryPriority specifies the position in the directory. AddFile adds a file to the directory. The fp object will be automatically deleted when the directory container will be deleted.

The filesize passed here does **not** need to be correct, it will be used by the filesystem generator to preallocate space so it must be the **maximum** space the final version of the file may need (worst-case).

Priority specifies some user-defined ordinal defining the order in which the files are being written to the disc physically (like .ifo comes before .vob).

Priorities are valid across directories. The fileentry order in a directory is defined by the directoryPriority parameter which is the primary sort criterium when arranging the files in a directory (Note that this is only true for filesystems that do not require files to be sorted in the directory, e.g. UDF).

If any of the priority specifiers is -1, the producer does not care about the priority and the *NeroAPI* will put the file where it thinks it fits. AddFile will add a file which is present in the real file system, and return NULL if a file with the same name already exists.

RemoveEntry removes an entry from the directory.

```
class IDirectoryContainer : public IDirectory
{
public:
      virtual IDirectoryContainer *AddDirectory(const char *name,
              int directoryPriority)                              =0;

      virtual IDirectoryEntryContainer *AddFile(const char *name,
              const IFileProducer *fp,__int64 size,int priority,
              int directoryPriority)                              =0;


      virtual IDirectoryEntryContainer *AddFile(const char *name,
              const char *sourcePath, int priority,
              int directoryPriority)                              =0;

      virtual bool RemoveEntry(const char *name)                  =0;

      virtual IDirectoryEntryContainer *Entry(const char *name)   =0;
      virtual IDirectoryEntryContainer *Entry(int i)              =0;
      virtual IDirectoryContainer *SubDirectory(const char *name =0;
};
```

### 10.5.5. IFileSystemDescContainer

This interface represents the content of a file system.

SetName sets the volume name of the file system.

The Root function provides access to the root directory for changing it.

Release is called by the application when the object is not needed anymore.

```
struct IFileSystemDescContainer : public IFileSystemContent
{
      virtual void SetName(const char *)  =0;
      virtual IDirectoryContainer *Root() =0;

      virtual void Release()        const =0;
};
```

# 11. The Packet Writing API

Packet writing enables the incremental writing of data to a CD-R or DVD. Unlike disk-at-once or track-at-once it lets the user access the media like a harddisk drive if the CD or DVD recorder supports packet writing.

Packet writing has become available with *NeroAPI* 5.5.10.15.

## 11.1. Packet Writing Interface

Please note that only one object created by either NeroCreateBlockWriterInterface or NeroCreateBlockReaderInterface may exist at a time. Also make sure to delete the object before using the referred drive for another purpose (e.g. importing multisession data, starting a recording- or digital audio extraction process). Opening a secondary device handle for the drive is **not** sufficient!

### 11.1.1. Access Mode

The enum is used when creating reader or writer interfaces from devices.

```
typedef enum
{
      eNoWriting              =0x0000,
      ePacketWriting          =0x0001,
      eManagedMRW             =0x0002,
      eRawMRW                 =0x0004,
      eIllegalAccessMode      =0xffffffff
} AccessMode;
```

| Description of enumerators | |
|---|---|
| eNoWriting | Use this to instantiate an INeroFileSystemBlockAccess object for read-only access. |
| ePacketWriting | Use this for DVD+RW,DVD-RW,CD-RW media in non-MRW mode. |
| eManagedMRW | Use this for defective managed MRW mode for all media types. |
| eRawMRW | Use this for raw MRW mode (defective management turned off). |

### 11.1.2. ImageAccessMode

Used when creating a block access interface from an image.

```
typedef enum
{
      eIAReadOnly             = 0x0000,
      eIAReadWrite            = 0x0001,
      eIAIllegalAccessMode    = 0xffffffff
} ImageAccessMode;
```

| Description of enumerators | |
|---|---|
| eIAReadOnly | Read only access. |
| eIAReadWrite | Read and write access. |

### 11.1.3. NeroCreateBlockWriterInterface

Use this function to obtain a block writer to a specified NeroAPI device.

Please note that ownership of the aDeviceHandle is **not** transferred to the block writer so you are still responsible to dispose of the device handle after disposing of the writer interface.

```
NEROAPI_API INeroFileSystemBlockAccess* NADLL_ATTR
NeroCreateBlockWriterInterface( NERO_DEVICEHANDLE DeviceHandle,
                                AccessMode eAccessMode);
```

### 11.1.4. NeroCreateBlockReaderInterface

Use this function to obtain a block reader to a specified NeroAPI device.

Please note that ownership of the aDeviceHandle is **not** transferred to the block reader so you are still responsible to dispose of the device handle after disposing of the reader interface.

```
NEROAPI_API INeroFileSystemBlockReader* NADLL_ATTR
NeroCreateBlockReaderInterface( NERO_DEVICEHANDLE DeviceHandle,
                                AccessMode eAccessMode);
```

### 11.1.5. NeroCreateBlockAccessFromImage

Create a block access interface for the specified image file. Instead of an image file, you may pass a drive letter here to read from a specific device supported by the operating system.

```
NEROAPI_API INeroFileSystemBlockAccess* NADLL_ATTR
NeroCreateBlockAccessFromImage(const char *szFilename,
                               ImageAccessMode eAccessMode);
```

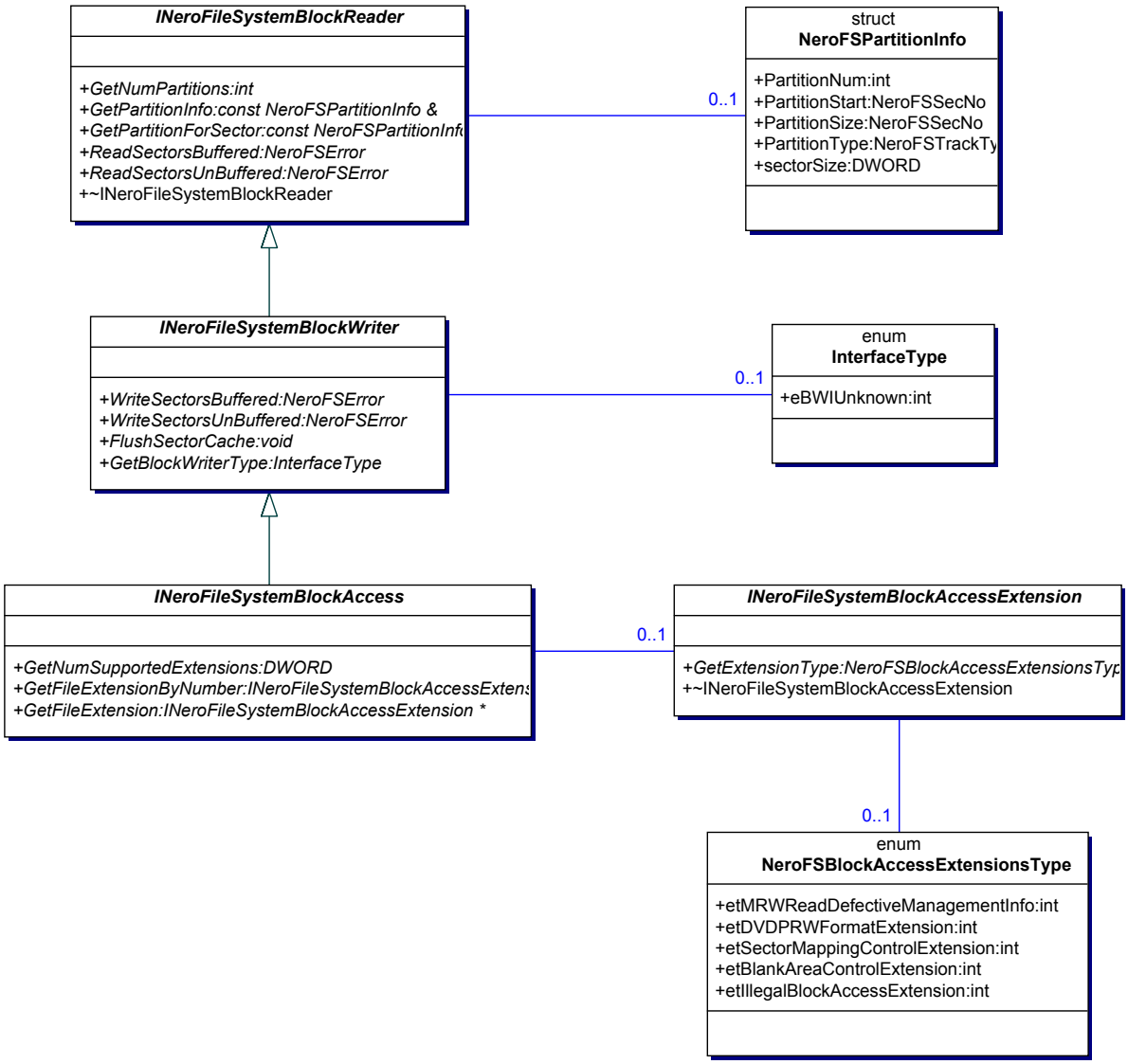
### 11.1.6. NeroGetSupportedAccessModesForDevice

This function will return a DWORD mask containing values as declared in enum AccessMode. Use ((result&eDesiredMode)!=0) to determine whether a specific mode is supported.

```
NEROAPI_API DWORD  NADLL_ATTR NeroGetSupportedAccessModesForDevice(
                                        NERO_DEVICEHANDLE aDeviceHandle);
```

## 11.2. File System Block Access Interface

These interfaces are part of the NeroAPI packet writing API. The packet writing API will return INeroFileSystemBlockAccess that can be used to have block access to a file system.



### 11.2.1. INeroFileSystemBlockAccess

This interface contains an extension scheme that will allow us to transparently extend the interface's functionality without losing binary compatibility.

```
class INeroFileSystemBlockAccess :public INeroFileSystemBlockWriter
{
public:
      virtual DWORD GetNumSupportedExtensions() = 0;
   virtual INeroFileSystemBlockAccessExtension
            *GetFileExtensionByNumber(int iNumExt) = 0;

      virtual INeroFileSystemBlockAccessExtension
            *GetFileExtension(NeroFSBlockAccessExtensionsType eExtType) =
0;
};
```

| Description of members | |
|---|---|
| GetNumSupportedExtensions | Returns the number of supported extension fields. |
| GetFileExtensionByNumber | In combination with the method above, this method can be used to copy a set of extensions without knowing which ones are actually there. Extensions have to be passed through to any of the Nero filesystem generators, so it is essential to have some means of copying them. |
| GetFileExtension | Returns specified extension or NULL if not present. |

### 11.2.2. INeroFileSystemBlockAccessExtension

All block device access extensions are derived from this one.

```
class INeroFileSystemBlockAccessExtension
{
public:
      virtual NeroFSBlockAccessExtensionsType GetExtensionType() const
                                                                    = 0;
      virtual ~INeroFileSystemBlockAccessExtension() {};
};
```

### 11.2.3. INeroFileSystemBlockReader

This is an abstract interface for reading from block devices. It will provide necessary data about the underlying medium as well as cache data if necessary.

```
class INeroFileSystemBlockReader
{
public:
  virtual int    GetNumPartitions() = 0;
  virtual const NeroFSPartitionInfo &GetPartitionInfo(int iNumPartition)
                                                                  = 0;

  virtual const NeroFSPartitionInfo &GetPartitionForSector(
                                                  NeroFSSecNo secNo) = 0;
  virtual NeroFSError ReadSectorsBuffered  (void *pData,
                                       NeroFSSecNo startSector,
                                       NeroFSSecNo noSectors,
                                       NeroFSSecNo &noSectorsRead)
                                                                  = 0;
  virtual NeroFSError ReadSectorsUnBuffered(void *pData,
                                          NeroFSSecNo startSector,
                                          NeroFSSecNo noSectors,
                                          NeroFSSecNo &noSectorsRead)
                                                                  = 0;
  virtual ~INeroFileSystemBlockReader() {};
};
```

| Description of members | |
|---|---|
| GetNumPartitions | Retrieve the number of partitions. |
| GetPartitionInfo | Retrieve the partition information. |
| GetPartitionForSector | Returns the partition a given sector resides in. |
| ReadSectorsBuffered | The buffered reading method will use a cache to optimize filesystem access. It should be used when reading directory structures.<br>This method returns error codes as described in NeroFSError.<br>Your read requests may not cross partition boundaries! |
| ReadSectorsUnBuffered | The unbuffered reading method should be used when reading file contents.<br>This method returns error codes as described in NeroFSError.<br>Your read requests may not cross partition boundaries! |

### 11.2.4. INeroFileSystemBlockWriter

The FileSystem block writer interface is derived from the block reader interface. It defines a path of access to RW filesystems and partitions.

As is the case with the reader interface, the writer interface also provides two methods for sector access. While WriteSectorsUnBuffered will merely ensure the consistency of the read cache (write thru), WriteSectorsBuffered will not write anything to the block device immediately but will cache a certain amount of sectors before doing so.

The latter increases performance considerably but is prone to data loss in an unstable environment.

Please note that regardless of which method you use, you **must** call FlushSectorCache if you want all your data to be at their final physical location. The reason is that even when writing in UnBuffered mode, the driver may decide to not write away your data immediately. This depends on the underlying writing scheme (e.g. packet writing will always try to collect a certain amount of sectors).

```
class INeroFileSystemBlockWriter :public INeroFileSystemBlockReader
{
public:
      virtual NeroFSError WriteSectorsBuffered(const void *pData,
                                        NeroFSSecNo startSector,
                                        NeroFSSecNo noSectors,
                                        NeroFSSecNo &noSectorsWritten)
                                                              = 0;
      virtual NeroFSError WriteSectorsUnBuffered(const void *pData,
                                        NeroFSSecNo startSector,
                                        NeroFSSecNo noSectors,
                                        NeroFSSecNo &noSectorsWritten)
                                                              = 0;
      virtual void FlushSectorCache() = 0;

      virtual InterfaceType GetBlockWriterType() = 0;
};
```

| Description of members | |
|---|---|
| WriteSectorsBuffered | Method for buffered writing. |
| WriteSectorsUnBuffered | Method for unbuffered writing. |
| FlushSectorCache | Force the flushing of the sector cache.<br>FlushSectorCache will be performed implicitly upon deleting the block writer object. |
| GetBlockWriterType | Runtime type information to be used for downcasting into specialized interfaces. |

### 11.2.5. InterfaceType

Specifies the block writer type. You can use this information to down-cast the interface to obtain specialized functionality.

No extensions to the normal blockwrite interface are available so far.

```
enum InterfaceType
{
      eBWIUnknown
};
```

### 11.2.6. NeroFSBlockAccessExtensionsType

Type of an extension. Currently no extension is provided within the NeroSDK.

```
enum NeroFSBlockAccessExtensionsType
{
      etMRWReadDefectiveManagementInfo,
      etDVDPRWFormatExtension,
      etSectorMappingControlExtension,
      etBlankAreaControlExtension,
      etIllegalBlockAccessExtension,
      etHDPartitionInfo,
      etHDUsedBlockAccessExtention,
      etSectorPatchControlExtension
};
```

### 11.2.7. NeroFSError

This enum is used to obtain the result of reading and writing operations.

```
typedef enum
{
      errOK=0,
      errEndOfDir,
      errEndOfFile,
      errReadError,
      errInvalidFS,
      errNoDirectory,
      errNoFile,
      errNotSupported,
      errIllegalArgument,
      errWriteError,
      errInternalError,
      errFileLocked
} NeroFSError;
```

| Description of enumerators | |
|---|---|
| errOK | Operation successful. |
| errEndOfDir | Deprecated. Should never be returned, to be treated as errOK. |
| errEndOfFile | See the libc read command for reference. |
| errReadError | A read error has occurred. |
| errInvalidFS | The files system is not valid. |
| errNoDirectory | It has been attempted to perform a directory operation on an object that is no directory. |
| errNoFile | It has been attempted to perform a file operation on an object that is no file. |
| errNotSupported | Operation not supported. |
| errIllegalArgument | An illegal argument has been passed. |
| errWriteError | A write error has occurred. |
| errInternalError | An internal error has occurred. |
| errFileLocked | The file is locked. |

### 11.2.8. NeroFSPartitionInfo

This struct stores information about a partition.

```
typedef struct
{
      int               PartitionNum;
      NeroFSSecNo       PartitionStart;
      NeroFSSecNo       PartitionSize;
      NeroFSTrackType   PartitionType;
      DWORD             sectorSize;
} NeroFSPartitionInfo;
```

| Description of members | |
|---|---|
| PartitionNum | The current partition number. |
| PartitionStart | The start sector for this Partition. |
| PartitionSize | The number of sectors this Partition contains. |
| PartitionType | The type of Partition. |
| sectorSize | Sector size for this Partition. |

### 11.2.9. NeroFSTrackType

Enumeration of file system track types.

```
typedef enum
{
      vtData=0,
      vtAudio
} NeroFSTrackType;
```

| Description of enumerators | |
|---|---|
| vtData | Data Track. |
| vtAudio | Audio Track. |

### 11.2.10. NeroFSSecNo

The sector number. All sector references use this type. LBA adressing is used throughout the interface.

```
typedef __int64 NeroFSSecNo;
```

# 12. Media Type Formats

## 12.1. Audio

The *NeroAPI* requires the use of PCM (Pulse Code Modulation), 44.1kHz, Stereo (left channel first), 16 bits per channel, Little Endian Word (Least Significant Byte first).

WAV and MP3 files can also be burnt on Audio-CD by passing their path.

## 12.2. Video

### 12.2.1. SVCD Creation with *Nero*

There has been some confusion about what kind of input files are accepted by *Nero* for VCD and SVCD. The general answer is:

MPEG files that have already been prepared for VCD or SVCD. If the files conform to the VCD or SVCD specs, *Nero* is able to write a VCD or SVCD on-the-fly without re-encoding the files.

It's important to realize that there are different types of MPEG files. What makes a MPEG suitable for a (S)VCD is way beyond the scope of this documentation text and has to be dealt with by the makers of MPEG encoders. It involves details and settings that simply cannot be chosen via the user interface of existing encoders, unless they have a button dedicated to "(S)VCD encoding".

Having said that, there is a way to at least make *Nero* happy with the source MPEG files. However, this is far from producing a standard compliant CD, because *Nero* cannot test all the relevant aspects.

The most obvious (and most easily met) requirement is picture size:

| Format | PAL Resolution | NTSC Resolution |
|---|---:|---:|
| VCD, normal | 352x288 | 352x240 |
| VCD, high | 704x576 | 704x480 |
| SVCD, normal | 480x576 | 480x480 |
| SVCD, high | 704x576 | 704x480 |

The "high" resolutions are only available for still images, not for movies.

For still images, *Nero* will do the encoding by itself, so the picture sizes may differ. *Nero* will automatically fit the picture into the available space (in a future update, this will be user-configurable).

The frequency for the video is 25Hz for PAL and 29.97Hz for NTSC. The VCD format also allows a "MOVIE" resolution of 352x240 at 23.976Hz, but although this is legal, it is said to cause problems with some players.

Audio must be MPEG-1, layer 2, at 44.1kHz, stereo. SVCD also allows a second music channel and MPEG-2 multi-channel. The second channel is usually used for another language or – in case of Karaoke - for the music without the vocal track.

Apart from these obvious aspects, *Nero* also requires the MPEG-2 file to have a pack size that fits directly into a mode 2, form 2 block, i.e. it must be 2324 bytes large. If this (and for VCD also some other minor aspects) is not met, then *Nero* will list the file as having an "invalid stream encoding".

*Nero* does not test if scan information is stored in the user data of a stream. Scan information is required by the SVCD standard and might be required by certain players for seeking functions. *Nero* also accepts streams that contain invalid stream IDs.

# 13. Known Limitations

- Currently there are no Linux versions of the *NeroAPI* and the *Nero* Software Development Kit (*NeroSDK*).
- The *NeroAPI* is not threadsafe.
- Only one recorder can be accessed at a time.

# 14. Bibliography

## 14.1. C Programming Books

For those who never have programmed before:

*Greg M. Perry: Absolute Beginner's Guide to C*

From the guys who invented C. Only for beginners who like challenge:

*Brian W. Kernighan and Dennis M. Ritchie: The C Programming Language*

## 14.2. C Programming Online Resources

This site is both for C and C++ programming

http://www.cprogramming.com

Steve Summit's Introductory C course

http://www.eskimo.com/~scs/cclass/cclass.html

## 14.3. C++ Programming Books

If you know something better than those let us know.

*Ivor Horten: Beginning Visual C++ 6*

*Davis Chapman: Sams Teach Yourself Visual C++ in 21 days*

From the inventor of C++. Not for the faint of heart.

*Bjarne Stroustrup: The C++ Programming Language*

The author's favourite author. ;-) Read it if you think you know C++ inside and out.

*James Coplien: Advanced C++ Programming Styles and Idioms*

## 14.4. C++ Online Resources

Valencia Community College C++ programming course

http://m2tech.net/cppclass/

Intended for C users who want to make the transition to C++

http://www.icce.rug.nl/docs/cplusplus/cplusplus.html

A very good site

http://www.codeproject.com

## 14.5. General CD/CD-ROM Online Resources

Glossary of CD-ROM and DVD technologies

http://www.sigcat.org/resource/gloss697.htm

## 14.6. Audio CD Online Resources

Digital Audio on CD

http://www.disctronics.co.uk/cdref/cdaudio/cdaudio.htm

## 14.7. Super Video CD Online Resources

MPEG-2 encoder test

http://www.tecoltd.com/enctest/enctest.htm

A well-researched page on SVCD
http://www.iki.fi/znark/video/svcd/overview/

German page with a similar mission

http://www.ratos.de/