

# **NACAT**

**User Manual** 

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Sheet 1 of 19
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#### **Detailed Revision History**

Revision	Date	Change Made	Responsible Engineer
A	4-28-2004	Initial Release.	
В	1-10-2008	Removed all references to the hardware key, added registered trademark for NACAT, updated the Nielsen logo, and replaced references to nielsenmedia.com with nielsen.com.	
С	10-29-2009	Update EULA	
D	1-12-2011	Added references to Nielsen Watermarks detection; added procedures; removed references to Facility Display Setup, which is no longer in the application. Removed references to installing from a CD.	
Е	12-31-2013	Added InfoSID display.	
F	01-30-2015	Removed DirectX API and added WASAPI for audio capturing; Enabled SIDMAP display; Resolved issues related with InfoSID which was added in E revision; UI was modified to have option for selecting preferred audio capturing mode such as Line-in or playback.	

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#### Overview

NACAT—Nielsen Audio Code Analysis Tool—is software that captures audio, decodes Nielsen audio codes, and logs and displays the information to the user. The Nielsen EVS department uses the NACAT application for monitoring, assisting in troubleshooting, and verifying NAVE encoder installations. The primary information that are decoded by NACAT are program content (PC), final distributor (FD), time stamp, encoded channel (left or right), source identification number (SID), type of encoding (commercial or non-commercial), and DST or standard time.

This version supports Nielsen Watermarks and the legacy NAES II codes. Also, you can now audit an audio file played using a media application on your PC. Launch NACAT and then play the file on your PC to see the codes found in the file. You can even mute your speakers while NACAT decodes the audio codes.

#### **Customer Support** 1.1.

Telephone: 800-537-4872

Email: Encoders@Nielsen.com

#### 1.2. System Requirements

For the best NACAT software performance, the PC on which it runs should have the following configuration:

- Microsoft® Windows 7® operating system or later version
- Pentium or greater processor
- Minimum of 128 MB RAM memory
- 15 MB of hard disk space for the application
- 20 MB of hard disk space for log files (Periodic maintenance of these files may be required.)

A typical log file requires approximately 2 MB of hard disk space/day. Note

"Line" level audio input (-10dBV consumer IHF input level)

#### 1.3. Incompatibilities & Performance Anomalies

NACAT has not been fully qualified on all configurations of operating software and computer hardware and you may experience anomalies with your particular configuration. Please contact the Encoder Support Group to report any NACAT abnormalities you experience.

When using a laptop, it is recommended that it should have a direct Line-input to the sound card instead of connecting through a port replicator.

Microphone input to the sound card as an audio source is supported but not recommended.

The selected audio alert WAV file is played using the WaveOut resource of the systems sound device. It has been noted that on certain PCs, the WaveOut resource is mixed with the Recording Input resource of the sound device. Depending on the characteristics of the WAV file, this anomaly affects the proper decoding of the NAES II codes. If this occurs, try using the default Alarm.wav file that is included with the application.

# 2. Setting Up the NACAT Application

Follow the install instructions and then perform the setup procedure.

### 2.1. Installing NACAT

Use this procedure to install the NACAT application to a hard drive.

1. Do one of the following:

lf	Do this:	
An existing version of NACAT is already installed	Uninstall the current version of NACAT. See Uninstalling NACAT.	
	2. Go to step 2.	
NACAT is not installed	Go to step 2.	

- 2. Double-click NACAT.exe.
- Follow the prompts.
- 4. Start the NACAT application and do one of the following:

lf	Do this:
NACAT launches	See Setting Up the Audio Input.
NACAT does not launch	Click the Microsoft Windows Start button.
	<ol> <li>Browse to Programs &gt; Nielsen Media Research &gt; NACAT &gt; Launch VC Redistributable. An application installs the missing, required Visual C runtime libraries.</li> </ol>
	3. See Setting Up the Audio Input.

### 2.2. Setting Up the Audio Input

1. Before using the NACAT application, you need to select input mode and set its properties. The supported modes are Loopback Capture and Line In. Loopback mode is

the default mode. Connect an audio line level input source to the Line In port on the sound card if you use Line In mode. Connecting to the left audio is necessary and it is not necessary to connect to the right audio when using Line In mode.

Important Do not use the microphone input as a line in source; the frequency response of the microphone input could adversely affect the code detection performance of the NACAT application.

- 2. After installing the NACAT application, start NACAT When the application starts up for the first time, a configuration dialog appears.
- 3. Check the default values and do one of the following:

То	Do this:
Accept the current values	Click Cancel.
Change the preferences	See <u>Editing Preferences</u> .
	2. Click OK.

4. From the Tool menu, select Audio Capture Mode. A window as shown in Figure 1 appears for audio capture mode selection.

Figure 1 - Audio Capture Selection Window



5. Check the default mode and do one of the following:

То	Do this:
Accept the default mode	Click Cancel.
Change the capture mode	Select the desired capture mode and click OK.

6. From the Tool menu, select Sound Mixer. The Sound Mixer window with the Playback tab selected appears as shown in Figure 2. The default playback device is indicated by a green check mark.



Figure 2 - Sound Mixer with Playback Tab Selected

- 7. Select the default playback device (if not already selected).
- 8. Click Properties.
- 9. Click the Levels tab and adjust the volume levels as shown in Figure 3.

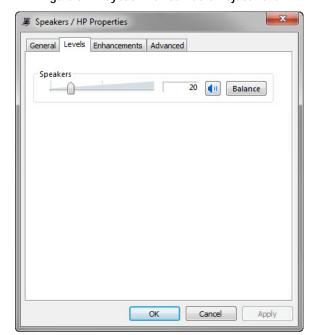
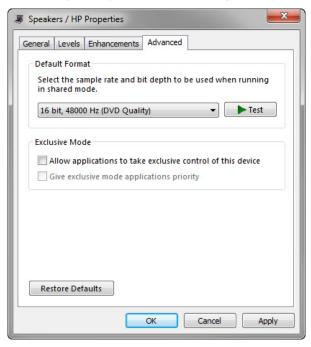


Figure 3 – Playback Device Audio Adjustment

10. Click the Advanced tab and select the sample rate and bit depth as shown in Figure 4.





- 11. Click OK to close the Speaker Properties window.
- 12. On the Sound Mixer window, select the Recording tab (Figure 5).

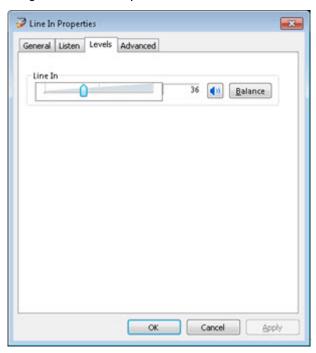
Figure 5 - Sound Mixer with Recording Tab Selected



13. Click the default recording device (indicated by a green check mark), then click Properties.

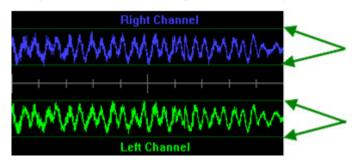
14. Select the Levels tab (Figure 6).





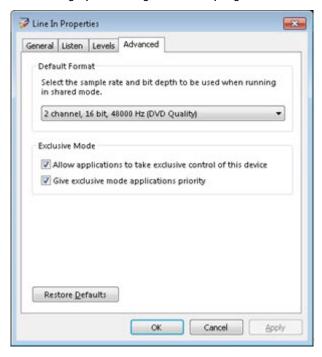
15. Adjust the volume level to ensure, on the main NACAT window, each waveform in Right Channel and Left Channel are within their blue and green lines respectively (Figure 7).

Figure 7 – Waveforms Showing Correct Audio Adjustment



16. Click the Advanced tab and select the sample rate and bit depth as shown in Figure 8.





17. Click OK and close the Sound Mixer.

### Using NACAT

This procedure is based on the assumption that you have connected the device running the audio signal to the Line In port of the PC running the NACAT application.

There is a log file for each session and the type of code found during the session: NAES II and Nielsen Watermarks.

- 1. Launch NACAT.
- 2. On the NACAT main window, click Start. The NACAT main window displays the following (for an example and more details, see <a href="NACAT Window Description">NACAT Window Description</a>):
  - Audio wave section—waveforms for the left and right channels
  - Session information section—time stamp and type of code detected
  - History section—running log of details for the detected audio codes

### 3.1. Editing Preferences

Changing the values in the Setup window is optional.

1. From the Tool menu, select Setup.

#### 2. On the Setup window, do any of the following as needed or keep the defaults:

To change the	Do this:
Location where the log files are created and stored	<ol> <li>Click the Log file folder field.</li> <li>Click the ellipsis (3 dots).</li> <li>Browse to a new location for the log files and select it.</li> <li>Click OK.</li> </ol>
Whether saving log details into the .csv file is enabled or not	Click the Enable Logging field and do one of the following:  Select Yes to save decoded watermarks into log file.  Select No to not save decoded watermarks into log file.
Color in which the Program Content code details appear in the Session Information and the History sections on the main window	<ol> <li>Click the PC (Program Content) text color field.</li> <li>Click the ellipsis.</li> <li>Select a color and click OK.</li> </ol>
Color in which the Final Distributor code details appear in the Session Information and the History sections on the main window	<ol> <li>Click the FD (Final Distributor) text color field.</li> <li>Click the ellipsis.</li> <li>Select a color and click OK.</li> </ol>
Maximum amount of time that can pass without any codes detected before an alert is issued	<ol> <li>Click the No code warning delay (secs) field.</li> <li>Select one of the periods in the drop-down menu.</li> </ol>
Whether an audio alert sounds or not when Final Distributor codes are missing	Click the No FD code audio alert field and do one of the following:  Select Yes to trigger an audio alert when the No code warning delay period is exceeded. The alarm stops when the NACAT detects a FD code in the audio or when the user clicks Stop.  Select No to not sound an alert when the No code warning delay period is exceeded.
Maximum amount of time that can pass without Final Distributor codes detected before an alert is issued	<ol> <li>Click the No FD code warning delay (minutes) field.</li> <li>Select one of the periods in the drop-down menu.</li> </ol>
Sound of the audio alert (see the note below)	<ol> <li>Click the No FD code audio file (WAV) field.</li> <li>Click the ellipsis (3 dots).</li> <li>Browse to a file in the WAV format on the PC hard drive.</li> <li>Click Open.</li> </ol>

To change the	Do this:
Text file for SIDMAP Information	<ol> <li>Click the SIDMAP file field.</li> <li>Click the ellipsis (3 dots).</li> <li>Browse to a SIDMAP.txt file on the PC hard drive</li> </ol>
Color in which the NAES II code details appear in the Session Information and the History sections on the main window	<ol> <li>Click the NAES2 codes text color field.</li> <li>Click the ellipsis.</li> <li>Select a color and click OK.</li> </ol>
Color in which the Nielsen Watermarks (NW) code details appear in the Session Information and the History sections on the main window	<ol> <li>Click the NW codes text color field.</li> <li>Click the ellipsis.</li> <li>Select a color and click OK.</li> </ol>
Whether an InfoSID details are to be displayed or not	Click the Display InfoSID field and do one of the following:  Select Yes to display InfoSID information along with other watermarks.  Select No to not display InfoSID information along with other watermarks.
InfoSID data file	<ol> <li>Click the InfoSID data file field.</li> <li>Click the ellipsis (3 dots).</li> <li>Browse to a InfoSID.xml file on the PC hard drive.</li> </ol>

Note

The selected audio alert WAV file plays through the WaveOut resource of the system sound device. On certain PCs, the WaveOut resource is mixed with the recording input resource of the sound device. Depending on the characteristics of the wave file, this anomaly affects the proper decoding of the NAES II codes. If this occurs, use the Alarm.wav file included with your application.

# 4. Uninstalling NACAT

Use the Add/Remove command in Microsoft Windows Control Panel to uninstall the NACAT application.

A message may appear indicating that one or more of the OLE objects did not properly uninstall. This message is harmless and requires no action.

### 5. NACAT Window Description

#### 5.1. NACAT Main Window

When the NACAT application launches, the main window appears as shown in Figure 9. You can see both NAES II and Nielsen Watermarks from the PC and FD code types.

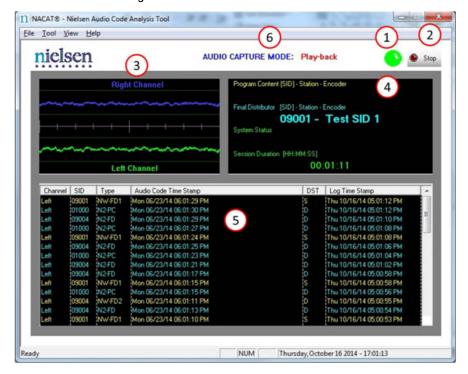


Figure 9 - NACAT Main Window Sections

The main window includes the following components (refer to the numbers, 1 through 6, in Figure 9):

- LED display—flashes to indicate that a Source Identification (SID) code has been received.
- 2. Start/stop button—starts the NACAT monitoring session and stops it.
- 3. Audio wave display—displays the right and left channels of the incoming audio.
- 4. Session information—displays the following information found in the signal:
  - Program Content SID—displays the SID, date, time, and Daylight Saving Time (DST) status for the program content.
  - Final Distributor SID—displays the SID, date, time, and DST status for the Final Distributor for NAES II and Nielsen Watermarks.
  - System Status—displays messages and warnings during an active monitoring session.

- Session Duration—displays the monitoring period for this session.
- 5. History—displays a running log of the audio codes that have been received. This information is stored in a log file. When a new session begins, a new log file is automatically generated. For information on where the log file is stored or changing its location, see <u>Editing Preferences</u>.
  - Channel—displays on which channel the codes are being decoded.
  - SID—specifies the Source Identification number assigned to the programmer by Nielsen.
  - Type—specifies the audio code type. For information on changing the color, see Editing Preferences.
    - Program Content (PC) is indicated by a user-defined color.
    - Final Distributor (FD) is indicated by a user-defined color.
  - Audio Code Time Stamp—specifies the date and time stamp for the corresponding SID.
  - DST—specifies whether DST is in effect or not.
    - S indicates that the time stamp is set for Standard time.
    - D indicates that the time stamp is set for DST.
  - Log Time Stamp—specifies the date and time the code was monitored.
- 6. Audio Capture Mode—displays the currently selected audio input mode.

#### 5.2. INFOSIDs

Figure 10 shows how INFOSIDs appear in the NACAT application.

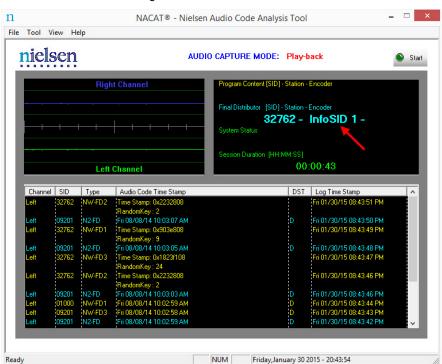


Figure 10 - INFOSIDs in NACAT

To view only INFOSIDs on the NACAT main window, select InfoSID Only from the View menu (Figure 11).

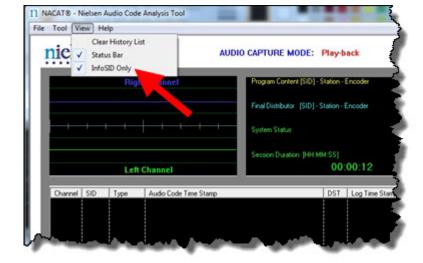


Figure 11 - View Menu - InfoSID Only

# 6. Troubleshooting Tips

lf	Try this:
Audio level is too low	On the Tool menu, select Sound Mixer and adjust the audio level of the Line input, so that the audio signal is within the green lines.
No audio on either channel	Ensure that the physical connection is connected into the Line input jack.
	On the Tool menu, select Sound Mixer Control and ensure that the Line input is selected.
Audio on one channel only	Ensure that you have audio input for the left channel.
	<ol><li>Ensure that the RCA plugs are properly plugged into both the audio source and the PC running NACAT.</li></ol>
No Nielsen codes detected	Ensure that the station being monitored is NAES encoded.
	2. Ensure the audio signal is between the green lines.
	3. Ensure the Stop button appears in the upper right corner of the main window. If the Start button appears, click it to start monitoring.
	4. Ensure that the left channel is receiving an audio signal.
NACAT application does not launch	Ensure that your system meets the minimum system requirements.
	NACAT system files may be corrupted. <u>Uninstall</u> and <u>reinstall</u> the NACAT application.
Not receiving a "No FD code audio"	On the Tool menu, select Setup and ensure the following:
alert	That you have not been receiving an FD code longer than the setting in the "No FD code warning delay (minutes)" field.
	That a working WAV audio file is selected in the "No FD code audio file (WAV)" field.