Identifying audio recordings

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Foreword

In this document we present the procedure for identifying audio recordings in version 3 of the NoiseWorks program.

All modern systems for measuring environmental noise over medium or long durations have a system for recording the audio signal, either continuously or based on events identified automatically or marked directly by the operator carrying out the measurement.

The identification system implemented in NoiseWorks 3 consists of the possibility of labeling each recording with a word or a short text and a rapid re-listening – identification – labeling system.

Once the labeling is done, it is used in the parts where the audio recordings appear, and in the case of labels repeated more than once, they appear in the context menu for export or deletion.

Measurement with audio recordings

Once the measurement has been imported into the program, it is possible to view it on a time history graph and with the position of any audio recordings displayed via a speaker-shaped icon.

This system was present in version 2 of NoiseWorks and produced a graph like the one in the following image.

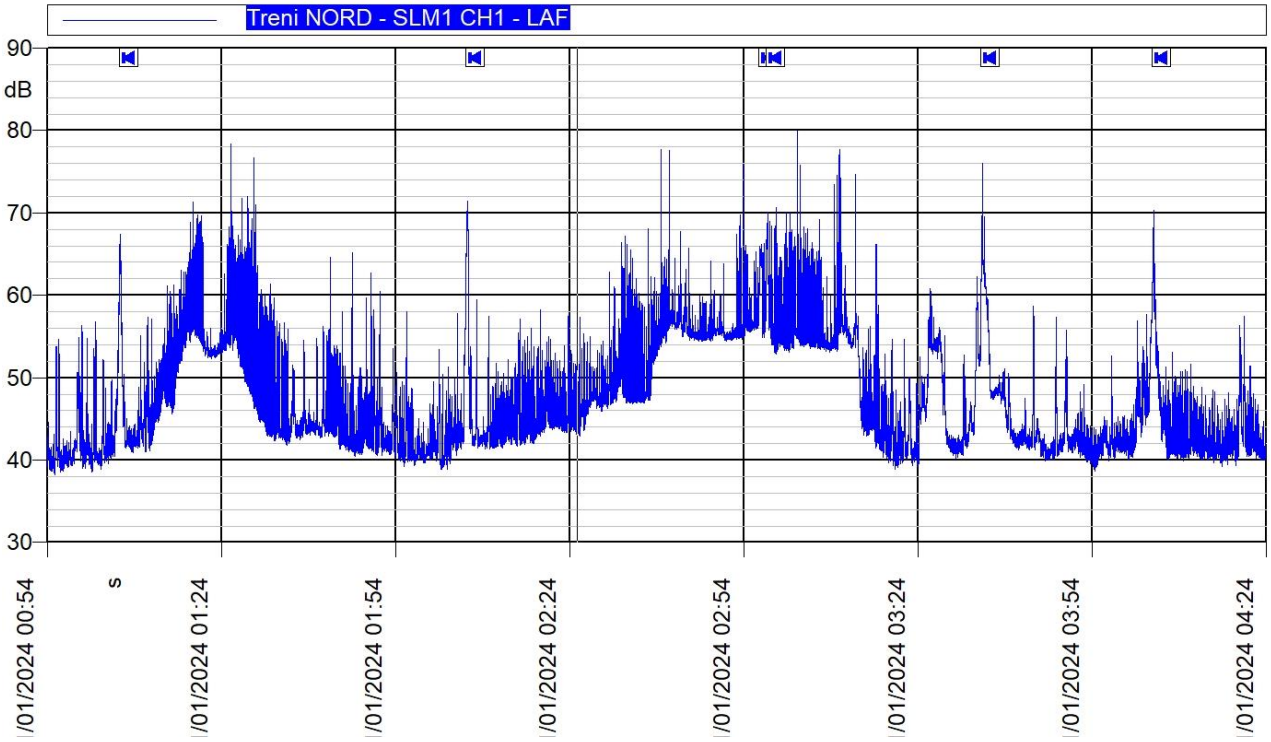


Figure 1 - Time History with audio version 2

To identify a recording you had to click on one of the icons and listen to its content again. Then you moved on to the next one and so on but without having the possibility of memorizing what the content referred to.

In version 3 it was decided to use the Graphic Control window to perform the entire sequence of identification operations.

The Graph Control window

This window also existed in the previous version, but it was only used for quickly changing the settings of the selected graph.

In this version it has been integrated with the audio recording identification system.

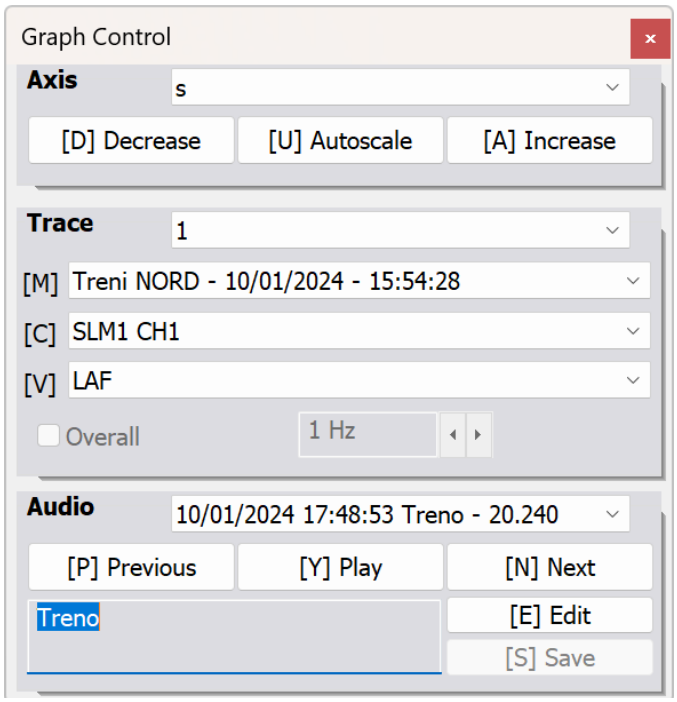


Figure 2 – Graph Control window

To speed up the use of the window, it was thought to associate each field or button of the window with a single key on the keyboard, so that you can navigate and use the window using only the keyboard and with the minimum number of keys to press.

The key corresponding to each field is displayed with the letter in square brackets.

The association of keys with fields can be freely defined by the user. The definition is made in the program Preferences window in the Graph Control category, as in the following image.

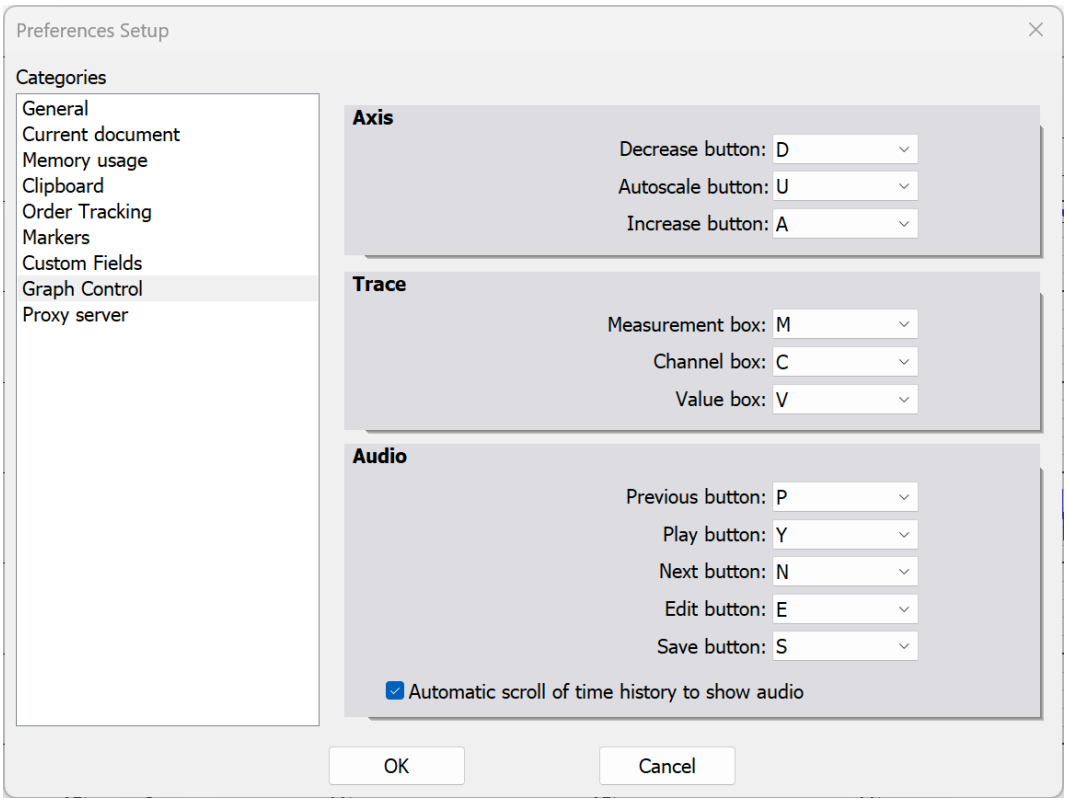


Figure 3 - Key Definitions for Grap Control

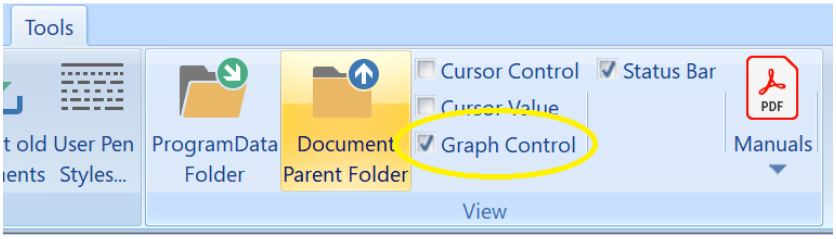
In the window there are three groups of controls: Axes, Traces and Audio which correspond to the same groups of the Graph Control window. For each field there is the possibility of selecting the corresponding button. Only buttons with letters or numbers are selectable.

Note the “Automatically move the time axis…” box which must be activated for easier identification.

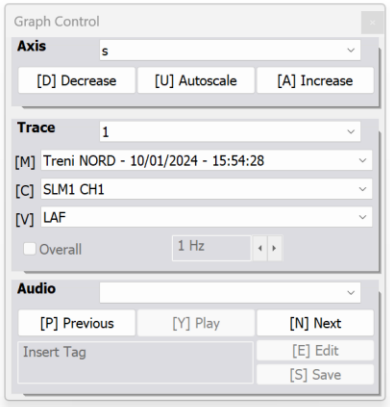
How to proceed to carry out identification.

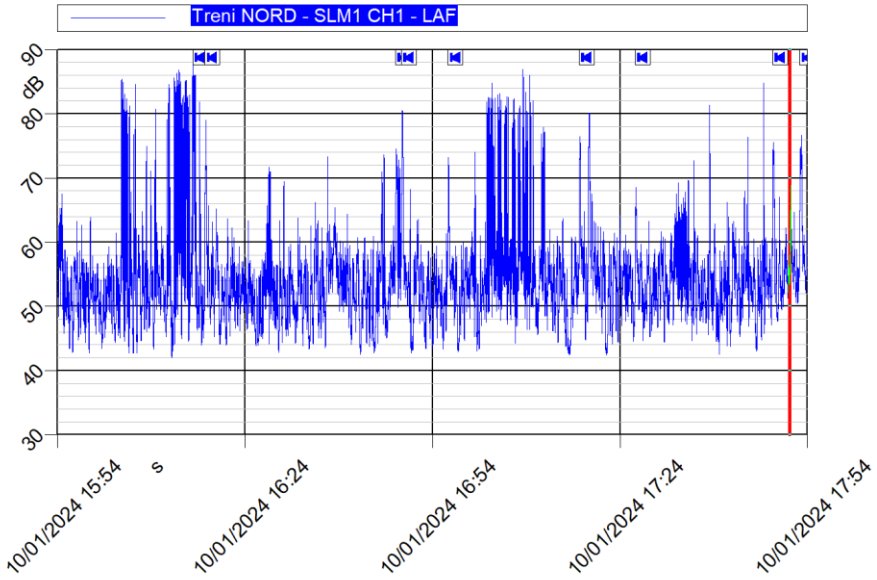
Let's assume we have already represented on the document page a time history graph that displays our measurement.

To activate the display of the Graph Control, click the corresponding box in the View panel in the Tools category of the ribbon which has replaced the traditional menu.



At this point, simply select our graph and the Graph Control window will open automatically.





The Audio group contains all the necessary commands.

Command	Description
Audio selector	Lists all audio recordings of the measurement. Using it you can jump to any recording. If the time history cursor is positioned at a point without audio, the field is empty.
Previous	Select and move the cursor to the beginning of the recording previous to the current position.
Play	Starts playback of the current recording. If the cursor is positioned in the middle of the recording, playback starts from there.
Next	Select and move the cursor to the beginning of the recording next to the current position.
Label field	This field displays the label of the current recording. It is normally grayed out (read-only) to prevent accidental changes.
Edit	Makes the label field editable and selects all content, ready for writing the new label.
Save	Save the label. Only active if the current label has been modified. Use the Tab key to exit the editing field and to save.

The label field and the Edit and Save buttons are replaced by a movement cursor that shows the progress of the playback. When the slider is displayed you can move the position at any time with the mouse.

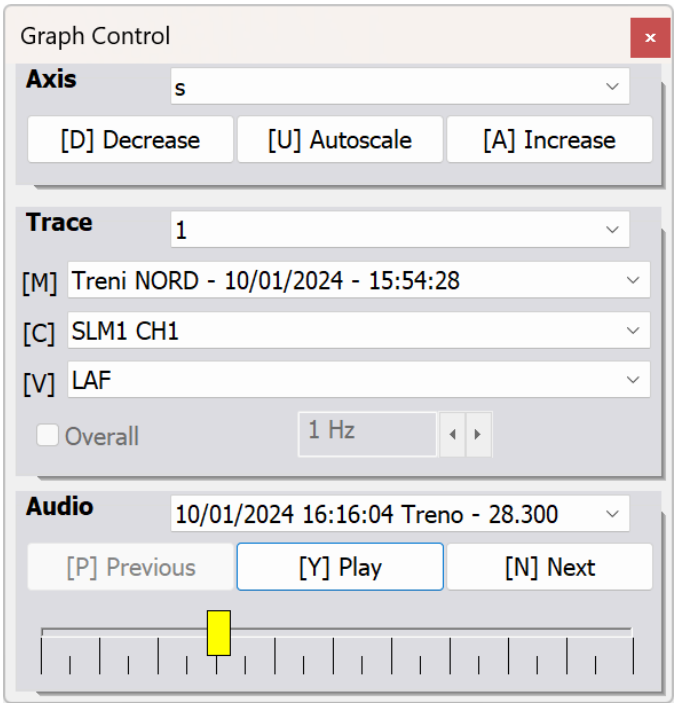


Figure 4 - Graph Control During Playback

Step-by-step procedure to identify some recordings

Let's start with the graph containing the time history selected. The Graph Control window is open. The keys used are those of the Graph Control displayed, but they may be different if the user has reprogrammed them.

Step	Effect
Select the first audio recording	The graph moves the cursor to the beginning of the recording.
Key Y (Play)	Start playing the first recording. Slider displayed.
Identification	After a short listen you understand that it is a train.
Key Y (Play)	Stops playback. The slider is hidden and the label field and the Edit and Save buttons are displayed again.
Key E (Edit)	The label field is activated.
Type **Train**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the second recording.
Key Y (Play)	The second recording starts playing. Slider displayed.
Identification	After a short listen you understand that it is a dog.
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **Dog**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the third recording.
Key Y (Play)	The third recording starts playing. Slider displayed.
Identification	After a short listen you understand that it is an irrelevant recording, to be discarded. For example, write "discard".
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **discard**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the fourth recording.

Key Y (Play)	The fourth recording starts playing. Slider displayed.
Identification	After a short listen you understand that it is a train.
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **Train**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the fifth recording.
Key Y (Play)	The fifth recording starts playing.
Identification	After a short listen you understand that they are the bells of the nearby church.
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **Bells**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the sixth recording.
Key Y (Play)	The sixth recording starts playing.
Identification	After a short listen you understand that it is a train.
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **Train**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the seventh recording.
Key Y (Play)	The seventh recording starts playing.
Identification	After a short listen you understand that it is an irrelevant recording, to be discarded. Write "discard".
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **discard**	Edit the label.

Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the eighth recording.
Key Y (Play)	The eighth recording starts playing.
Identification	After a short listen you understand that it is an irrelevant recording, to be discarded. Write "discard".
Key Y (Play)	Stops playback.
Key E (Edit)	The label field is activated.
Type **discard**	Edit the label.
Key TAB	The label turns grey (read only).
Key S (Save)	The current label is saved.
Key N (Next)	The cursor moves to the beginning of the next recording.
…	And so on and so forth

Please note that the step-by-step procedure, except for the initial selection of the graph, does not require the use of the mouse but only uses the keyboard, and each identification requires the pressing of only 6 keys (excluding those for the label name).

At the end of the step-by-step procedure our graph becomes as in the following image.

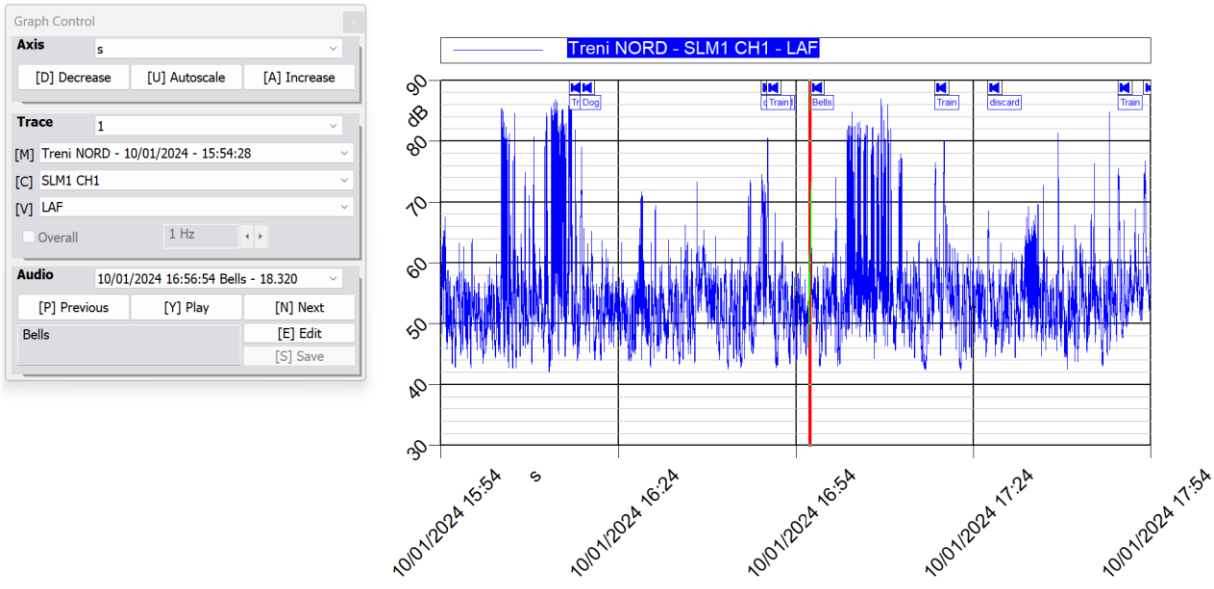


Figure 5 - At the end of the step-by-step procedure

The Document Content window after our identification takes on this appearance.

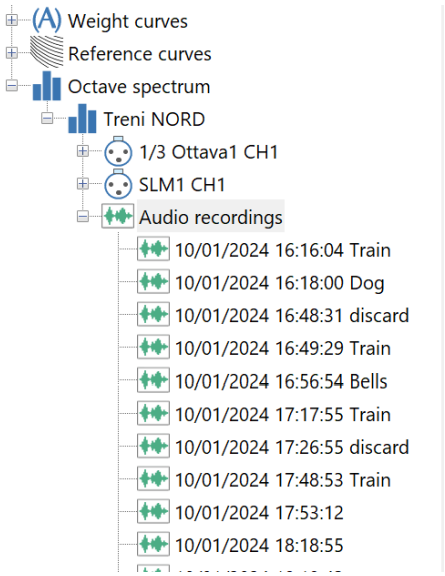


Figure 6 - Document Content after identification

The context menu that appears when you click on the “Audio Recording” item will now contain three new submenus, one for deleting a group of recordings identified by the same label, and two for exporting. In these submenus, only the items corresponding to labels that appear more than once will appear.

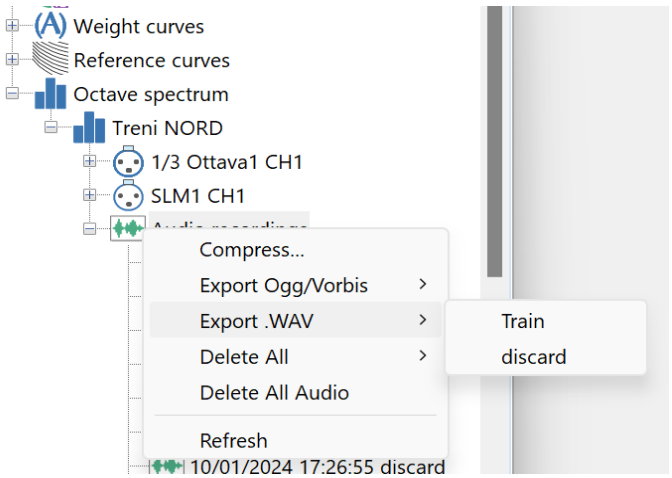


Figure 7 – Context menu with labels

You can see from the context menu the usefulness of naming the recordings that you are not interested in with the same label (discard in this case) and then using it to delete them all with a single operation.