

HARKBird Installation instruction and manual

Installation on Ubuntu

- Required packages for HARKBird:
 - [HARK](#)
 - [HARK-Python](#)
 - [SOX](#)
 - Execute “sudo apt-get install sox”
 - Follow the installation instruction on HARK website for HARK and HARK-Python
- Required python packages:
 - PySide
 - pandas
 - pysoundfile
 - These packages can be installed by executing “sudo pip install ‘package name’”
- HARKBird installation and startup
 1. Extract harkbird.zip in any directory
 2. Execute install.sh without superuser privilege (not use “sudo”)
 - You can execute it by “./install.sh”, “sh install.sh”, and so on
 3. A shortcut named “HARKBird” will appear on the desktop, and HARKBird can be run by double clicking it

Installation on Windows

- Required packages for HARKBird:
 - [HARK for Windows](#)
 - If the installation process fails during installation of HARK-Python, execute ‘python “C:¥Program Files (x86)¥HARK¥HARK-Python¥setup.py”’
 - [SOX](#)
 - After installation, add “C:¥Program Files (x86)¥sox-14-4-2” to the environment variable “Path”
- Required python packages:
 - PySide
 - pysoundfile
 - These packages can be installed by executing “pip install ‘package name’” on a command prompt
- HARKBird installation and startup
 1. Extract harkbird.zip in any directory
 2. Execute install.bat
 3. A shortcut named “HARKBird” will appear on the desktop, and HARKBird can be run by double clicking it

Recording

Directory in which recorded files are saved

Refreshing the directory information

File name of the recording (default: "Prefix-YYYYMMDD_HHMMSS.wav")

Prefix of the filename (default: none)

Prefix of the filename (default: none)

of channels of a microphone array

The duration of each recording session (default: 600sec)

Starts recording

Plays the wav file specified by left box

Divides the specified wav file into several short recording files

Recording duration (default: 3600sec)

List of wav files in the working directory

Only for Ubuntu
The device names of microphones can be specified
If multiple microphones are connected, enumerate their device names, separating them with ";"

HARKBird

Recording Localization Analysis

Working directory

/tmp/harkbird/

test.wav
test2.wav

File name
YYYYMMDD_HHMMSS...

Prefix
location

Device
plughw:1,0

Channel
8

Duration
3600

Interval
600

Recording

Play

Divide

Localization

Directory in which recorded files are saved

Refreshing the directory information

Loads a JSON file of localization setting

Saves the current setting to a JSON file

List of wav files in the working directory

Marker in the network file of HARK will be replaced by the corresponding Value
Markers and Values can be edited by double-clicking each cell

Network files and transfer functions should be in the corresponding folders in localization folder

The localization results will be saved in the specified directory

If checked, the recording file will be converted 16kHz before localization

Starts localize the specified wav file with the setting above
Multiple files can be analyzed at one time

Parameter	Marker	Value
Network		defaul...
TFNAME	#TFNAME#	micro...
PERIOD	#PERIOD#	50
THRESH	#THRESH#	29.50
MICNO	#MICNO#	0 1 2 3 4 5 6
LOWER_BOUND_FREQUENCY	#LBF#	2200
NUM_SOURCE	#NS#	3

Increase or decrease the gain of the recording file before localization

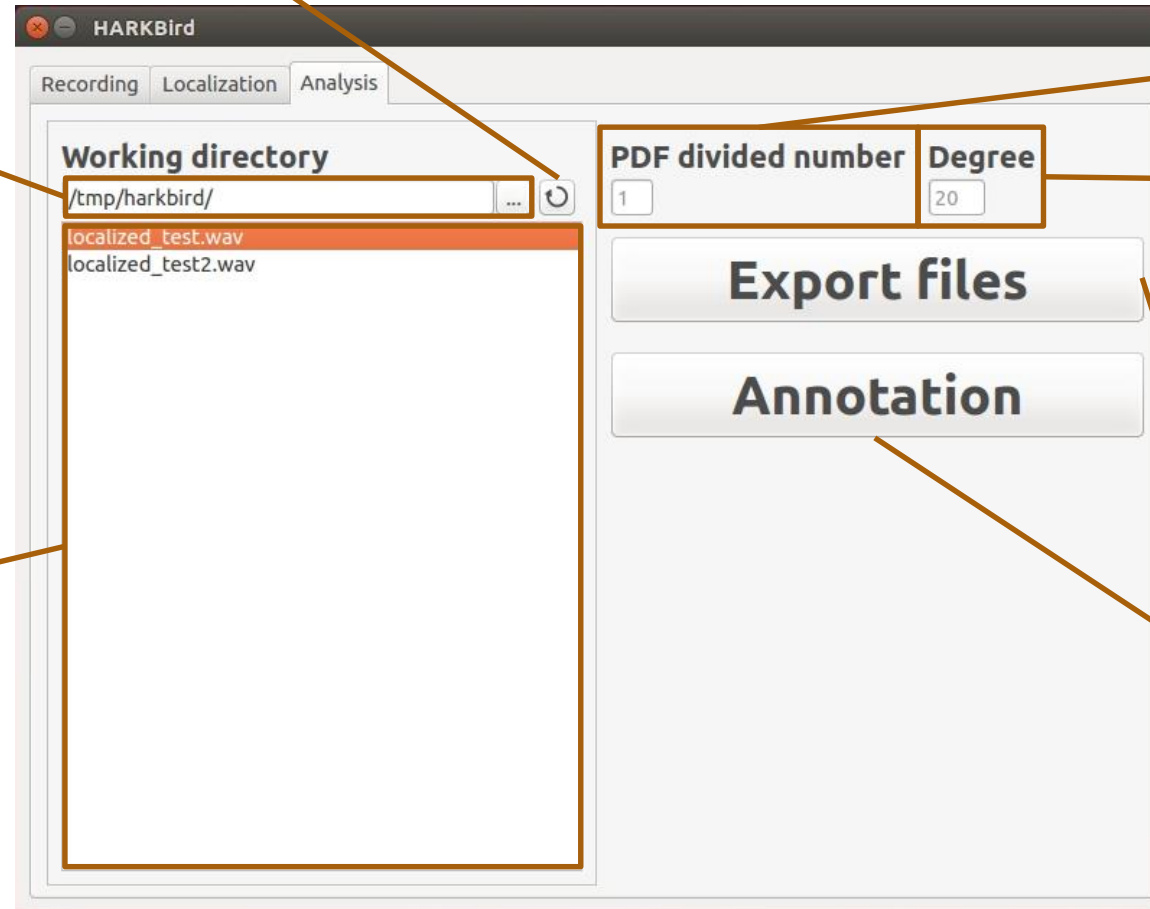
Once localization was done successfully, the folder "localized_<filename>" will be created, and there are some files:

- separated sounds (sep_*.wav)
- MUSIC spectrum (spectrum.txt)
- localization results (separated.csv)

Analysis

Refreshing the directory information

Directory in which results of localization are saved



The number of pages of the exported PDF

The localized sources were regarded as ones of conspecifics if the DOA difference is within this degree

Exports the analyzation results using localized results

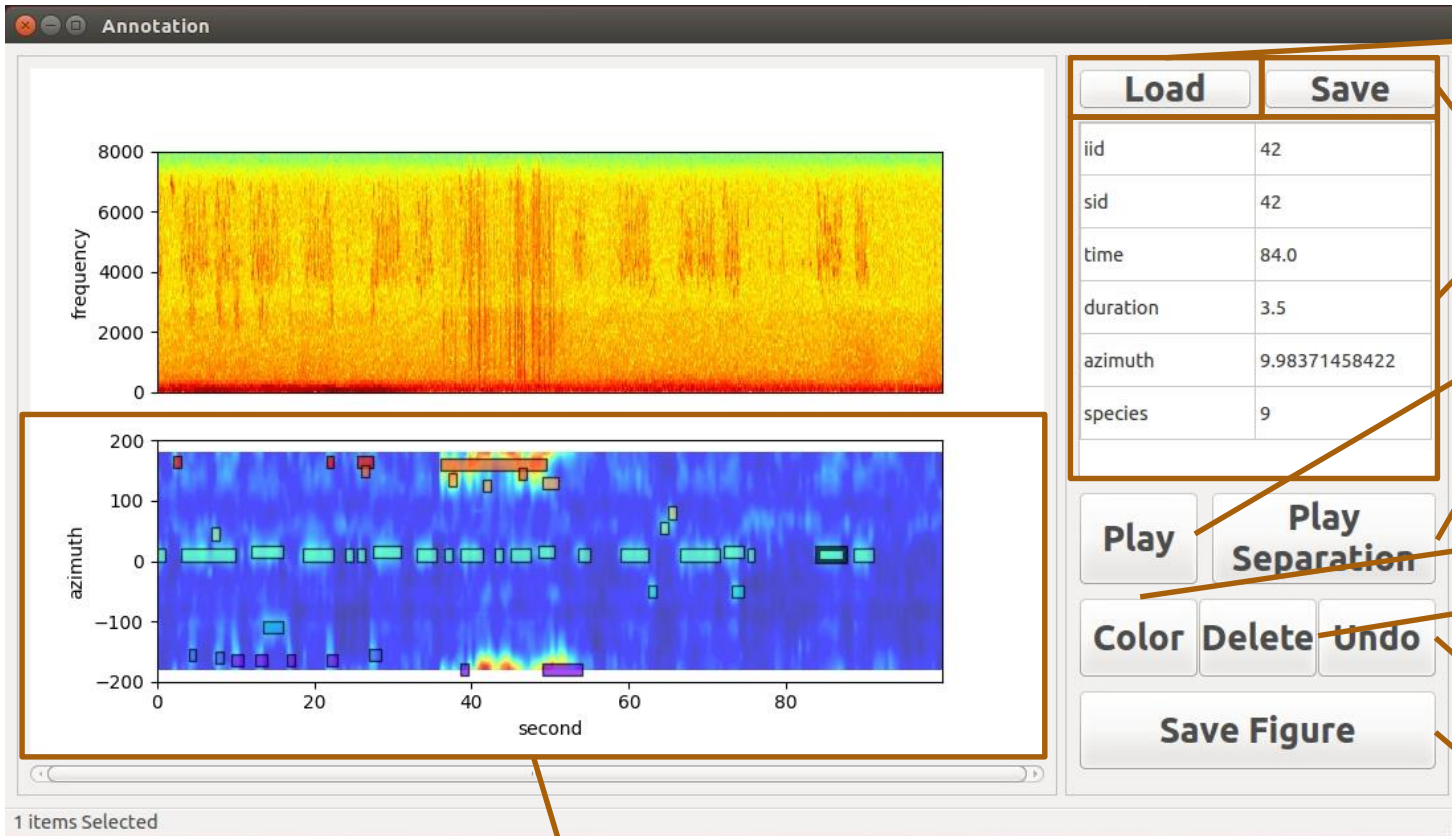
Multiple files can be specified at one time

- localized and classified results (sourceinfo[.csv|.json])
- List of localized sources (sourcelist.csv)
- Visualized result (visualized.pdf)

Launches annotation tool for the specified analyzed file

List of "localized_" folders in the working directory

Annotation



Loads localized and classified results or annotated files with JSON format

Saves the current annotation as a JSON or CSV file

Displays the information on the selected sound source
Each value can be modified by directly editing the values

Plays the original recording during the corresponding duration of the selected sound source

Plays the corresponding separated sound of the selected sound source

Changes the color map of species

Deletes the selected sound source

Undo the previous operation

Saves the annotation result shown in the current window as PDF or PNG file
The number of sub-figures can also be specified

Each rectangle represents the information of a localized sound source
Each information can be modified by dragging, moving, or changing in the length of the rectangle

A mouse wheel: the scale of the graph
Left click: source selection
Left double-click: creating a new sound source information
Right drag: selection of multiple sources (enabled and disabled by Q/A)