



# SoundFi v1.2

## Quick Start Guide

# Installing the software

## System Requirements

Operating System: MS Windows 7 / MS Windows 10

Free hard-disk space: at least 2MiB

.NET Framework: v4.6.1 or newer

## Setup

- Download SounDFiSetup.msi from:  
<http://users.auth.gr/nezos/#Software>
- Execute SounDFiSetup.msi
- Follow the on-screen instructions and select installation folder
- Close the installer after installation is complete.

# Step 1: Data Preparation

## Data Preparation

In order for SounDFi to process your data, it is necessary to place them in a tab-delimited text file consisting of 6 data columns without headers in the following order:

Identification Time Easting Northing EllipsoidalHeight Depth

Example:

176	75346	480743.303	4439096.477	40.5489	1.296
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- ✓ Last four columns should contain numerical values only.
- ✓ Depth data should be positive.
- ✓ Please apply any corrections before using the software.

# Step 2: Input Data

## Loading Data

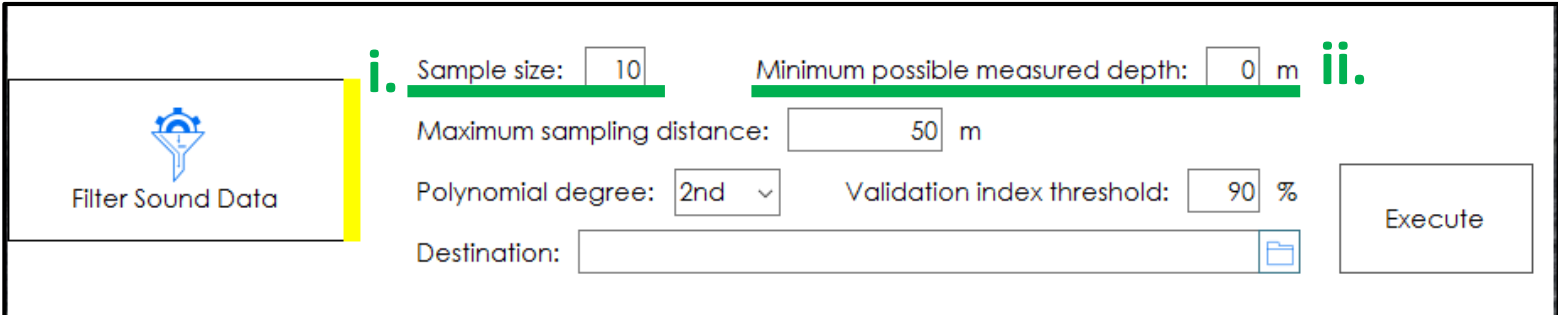
- Start SounDFi (a shortcut was installed in the Start Menu)
- Please read and accept the disclaimer and license agreement
- Select file by clicking the folder icon and click Load



- Check the Status message whether the file was successfully loaded. SounDFi reports the number of records loaded.

# Step 3: Evaluation Parameters - 1

SounDFi provides a set of parameters in order to control the evaluation process and thus the final results.

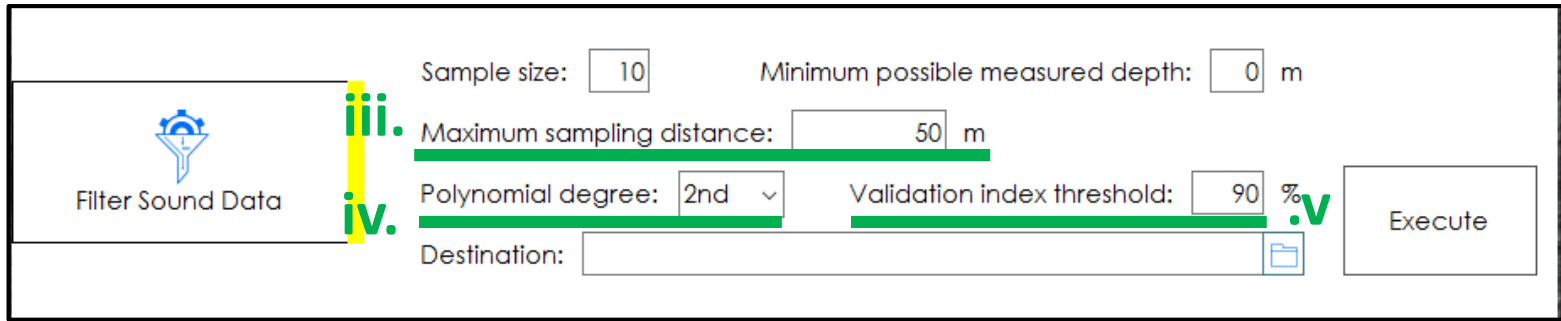


The screenshot shows the 'Filter Sound Data' interface with the following parameters and controls:

- Sample size:**  (highlighted with a green bar and labeled 'i.')
- Minimum possible measured depth:**  m (highlighted with a green bar and labeled 'ii.')
- Maximum sampling distance:**  m
- Polynomial degree:**  (dropdown menu)
- Validation index threshold:**  %
- Destination:**  (with a folder icon)
- Execute:**

- i. Sample size: Controls the sample size for the regression. It should be a positive value and greater than the selected polynomial degree plus one.
- ii. Minimum possible measured depth: If a depth measurement is below this positive value, it will be removed before the evaluation process.

# Step 3: Evaluation Parameters - 2



The screenshot shows the 'Filter Sound Data' interface with the following parameters and controls:

- Sample size:
- Minimum possible measured depth:  m
- Maximum sampling distance:  m (highlighted with a green bar and labeled 'iii.')
- Polynomial degree:  (highlighted with a green bar and labeled 'iv.')
- Validation index threshold:  % (highlighted with a green bar and labeled 'v.')
- Destination:  (with a folder icon)
- Execute button

- iii. Maximum sampling distance: Sampling of values will stop once the distance between the first and the last value exceeds this maximum distance.
- iv. Polynomial degree: Control the polynomial that will be regressed. The lower the degree, the stricter the filter.
- v. Validation index threshold: If the index scoring factor is lower than this percentage, then it will be classified as a possible outlier. The closer to 100% the stricter the filter.

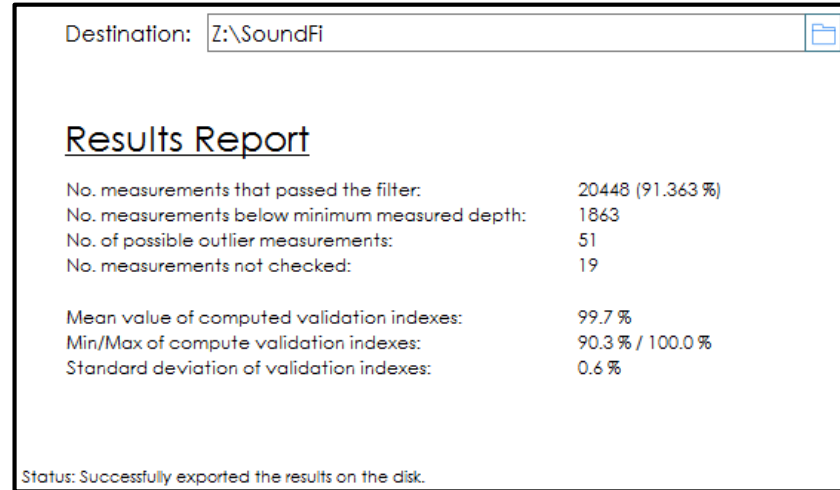
# Step 4: Evaluation Process

After specifying the previously described parameters:

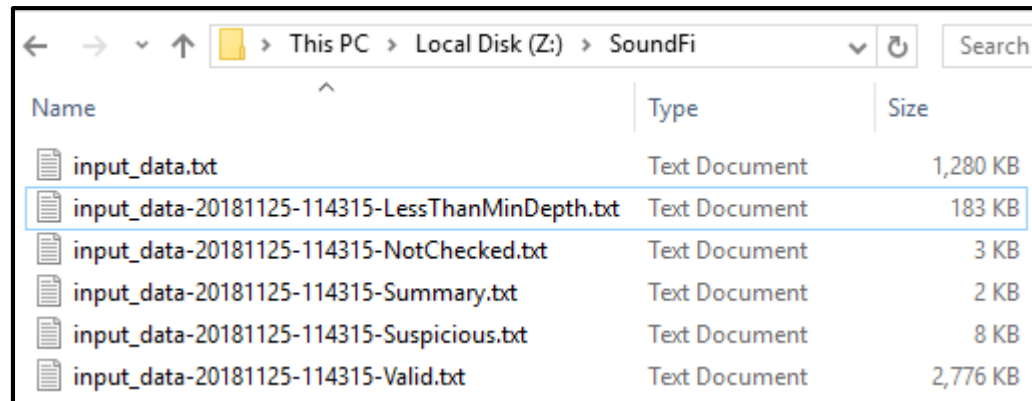
- Select an output folder for saving the results by clicking the folder icon.
- Click on execute.
- ✓ SounDFi creates several files. Each file is named after the input filename followed by the current date and time. The last part of the filename may be one of the following:
  - Summary
  - Suspicious
  - Valid
  - LessThanMinDepth
  - NotChecked

# Step 5: Final Results

SounDFi provides a summary of the filtering process:



and outputs to the specified directory a total of 5 files containing the results, like for example:





# Citing SounDFi

If you use SounDFi for your research or work please consider citing the software using the following reference:

Kampourakis S, Bantola D-M (2018) Evaluation of global bathymetry models, coastlines and gravity reductions with data obtained from a hydrographic survey in Neos Marmaras in Chalkidiki. Department of Geodesy & Surveying, School of Rural and Surveying Engineering, Aristotle University of Thessaloniki (In Greek).