

# Physiological Signals Labeler: software documentation

## Software usage/installation:

- Labeler only has to be extracted from .zip, and it can be used directly by clicking on *Labeler.exe* file
- Labeler Folder can be extracted and located anywhere on the computer
- It is possible that anti-virus software might block the starting of .exe file, so we need to add an exemption when it asks us for it.

It might give an error “*vcruntime140.dll was not found*” when first opening. To fix this error, it is needed to download and install the following Microsoft Visual C++ 2015 update:

<https://www.microsoft.com/en-us/download/details.aspx?id=52685>

## Instructions for annotation:

### 1) Steps of annotation

- Loading primary signal for annotation
- Loading additional signal to help annotate (optional)
- Create/save file where annotation will be stored
- Define labels of annotation points and their shortcut keys or load file with predefined labels and keys
- Start annotating
- Save regularly

### 2) Loading signals

- The main signal to annotate is loaded under “*File to analyze*” section
- Additional signal that can help in an annotation can be loaded under “*Additional files to plot*”, but is not necessary
  - It will be displayed below the main graph
- Files have to be in .csv file with a single column containing data points of the signal

### 3) Saving signal

- File to save annotated fiducial points have to be created before the annotation points are defined (labels and keys)
- It is created under “*Save/load annotation file*” section
- Here also already annotated data can be loaded in order to continue with annotation
- Annotation points are saved in .csv format with three columns containing: sample position, label name, label key

#### 4) Defining annotation points

- 1. option: Define labels manually
  - Under “*Define labels*” section
  - Label represents the descriptive name of the corresponding fiducial point, while key represents one letter from the keyboard that can be later used to choose which fiducial point to annotate
  - The best is to add them in the order that makes them easiest to label since this defines the order of automatic suggestions
  - When defined, labels can be saved into a file (.csv) to be used later as a template by clicking on “...” under “*Template file*”
- 2. option: Used template with predefined labels
  - Under “*Template file*” by clicking on “...” already existing file with defined labels and keys can be loaded
  - Labels are loaded, and the annotation can start

#### 5) Annotation

- Annotation starts as soon as at least one label is added
- Labels are automatically suggested in the order of how we defined them to make annotation faster
- To create a new annotated fiducial point, it is necessary to click on the position of the next label that is on the signal line
- If we want to add more annotation points of the same type “ctrl” key can be held and at the end, the keyboard letter of the label (its “key”) has to be pressed
  - Take care if it is upper or lower case
- It is possible to delete or move already annotated labels by clicking on them
- It is possible to move throughout signal by moving the graph left and right (pressing key somewhere on the background of a graph and moving the mouse) or zooming in/out
- Annotated points have to be saved by clicking every now and then on “Save” button

#### 6) Opening a new file

- Before passing to a new (primary) file to annotate, click “Save” button next to the annotation file
- By clicking on “Reset” button next to the main file, everything is reset in the software and it is ready to load a new file