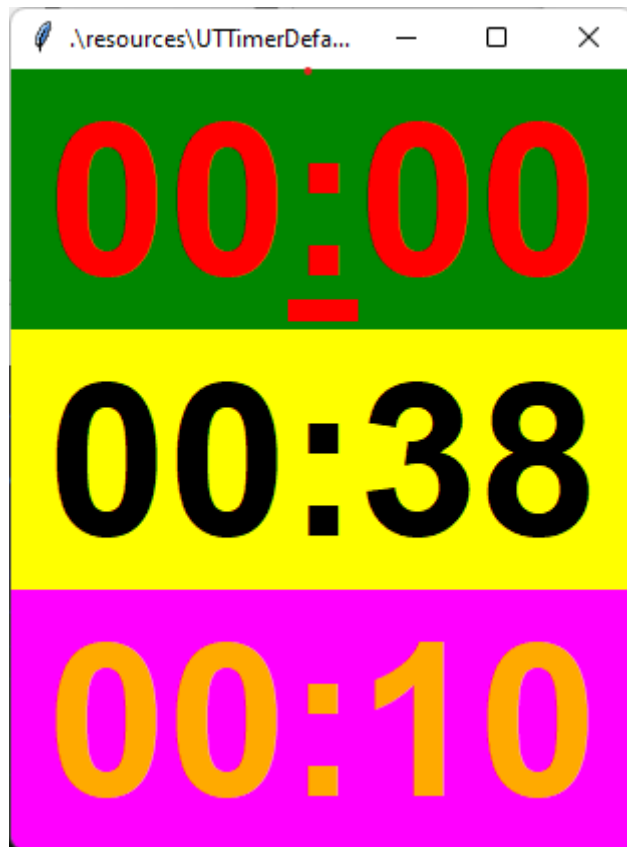


UTTimer

handbook

managing power up



by [TTF]psy
April 2022

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Introduction

Power up in FPS games provides temporary advantages in strength or defense capabilities and anticipating power up pick up may give a team a decisive advantage while attacking or defending during games like Unreal Tournament.

UTTimer provides timer(s) to manage power up pickup in UT, such as damage amplifier, armor or belt.

The tool may also be used for other fps games that provides regenerating power ups.

An embedded editor gives the possibility to edit/add/remove timers in a configuration and to load/save configurations.

Functionnalités

UTTimer provides inputs like keystroke or speech command to trigger timers and visual and audio indicators to help pick up power up when they become available.

The main features of the tool are :

- build and set up graphical timers (font, foreground, background, value, layout) with an editor
- manage keystrokes for each timer, to reset and start all timers ,
- keylogger option (in order to catch keystroke while gaming)
- voice command recognition (multilanguage)
- keystroke generation upon thresholds (warning, elapsed timer)
- audio message activation upon thresholds (warning, elapsed timer)
- store/load/modify timers configurations

Development package

Initially written in java, the tool has been rewritten in python language with some more features : uglier interface but more portability.

UTtimer has been developped on python 3.9.10 and tested on two platforms: linux AMD64 (fedora 34) and windows 11.

The following packages have been imported:

- **playsound** (linux)
- **winsound** (Windows platform)
- **colorama** (colored print)
- **pyaudio** (microphone management)
- **SpeechRecognition** (speech to text)
- **pyautogui**

Installation

Prerequisites

Download zip for your platform (linux or windows) and install as standalone.

Linux

Unzip archive UTTimer.zip in the desired location (\$HOME/UTTimer for instance). A «resources» directory must be present in the installation directory alongside executables UTTimer and keylogger. Make sure that both files are executable (chmod +x UTTimer keylogger)

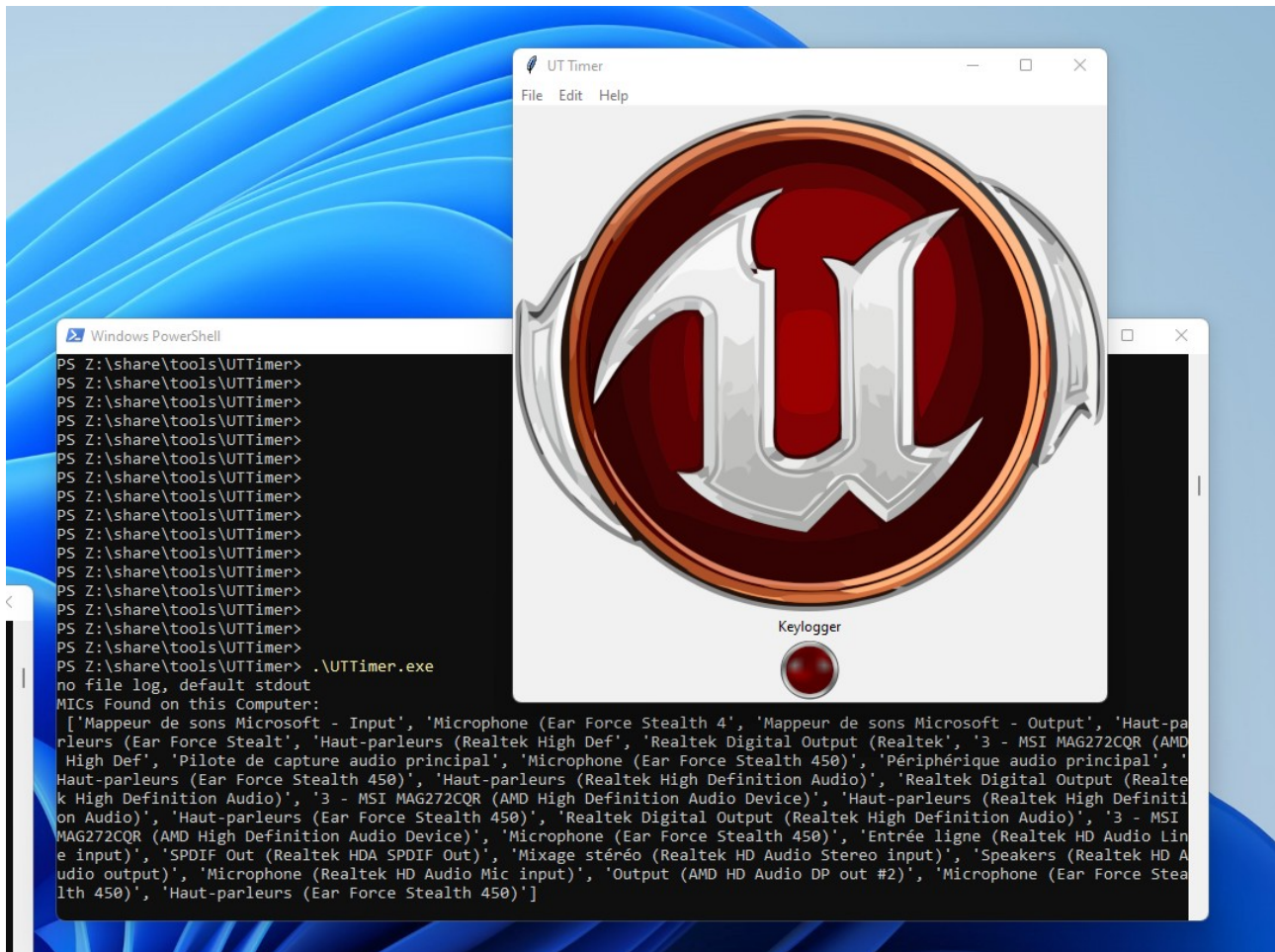
Windows

Unzip archive UTTimer.zip in the desired location (c:/UTTimer for instance). A «resources» directory must be present in the installation directory alongside executables UTTimer.exe and keylogger.exe. You can create a shortlink to UTTimer.exe.

Linux

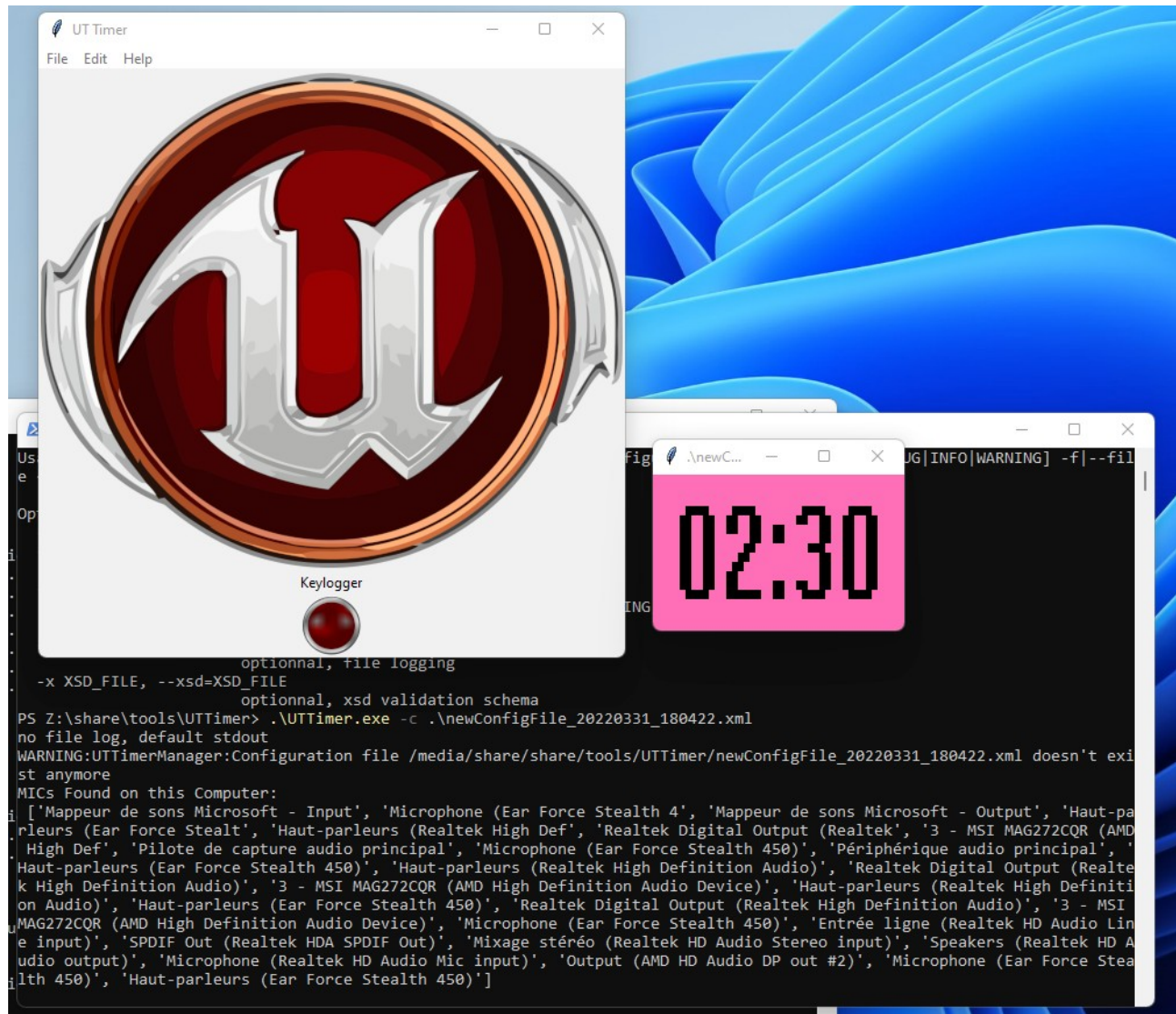
Windows

In a powershell console, launch UTTimer.exe as shown below. Cf §User guide to use the tool.



You could also double click on the icon associated to UTTimer.exe in the installation directory.

To load a specific configuration at startup, launch UTTimer with the following argument '-c' :



KeyLogger

A keylogger catches keystroke (whatever application has focus, and particularly during a game). Thus, keystroke may be associated with timer while gaming.

Keylogger is connected with a socket to UTTimer application.

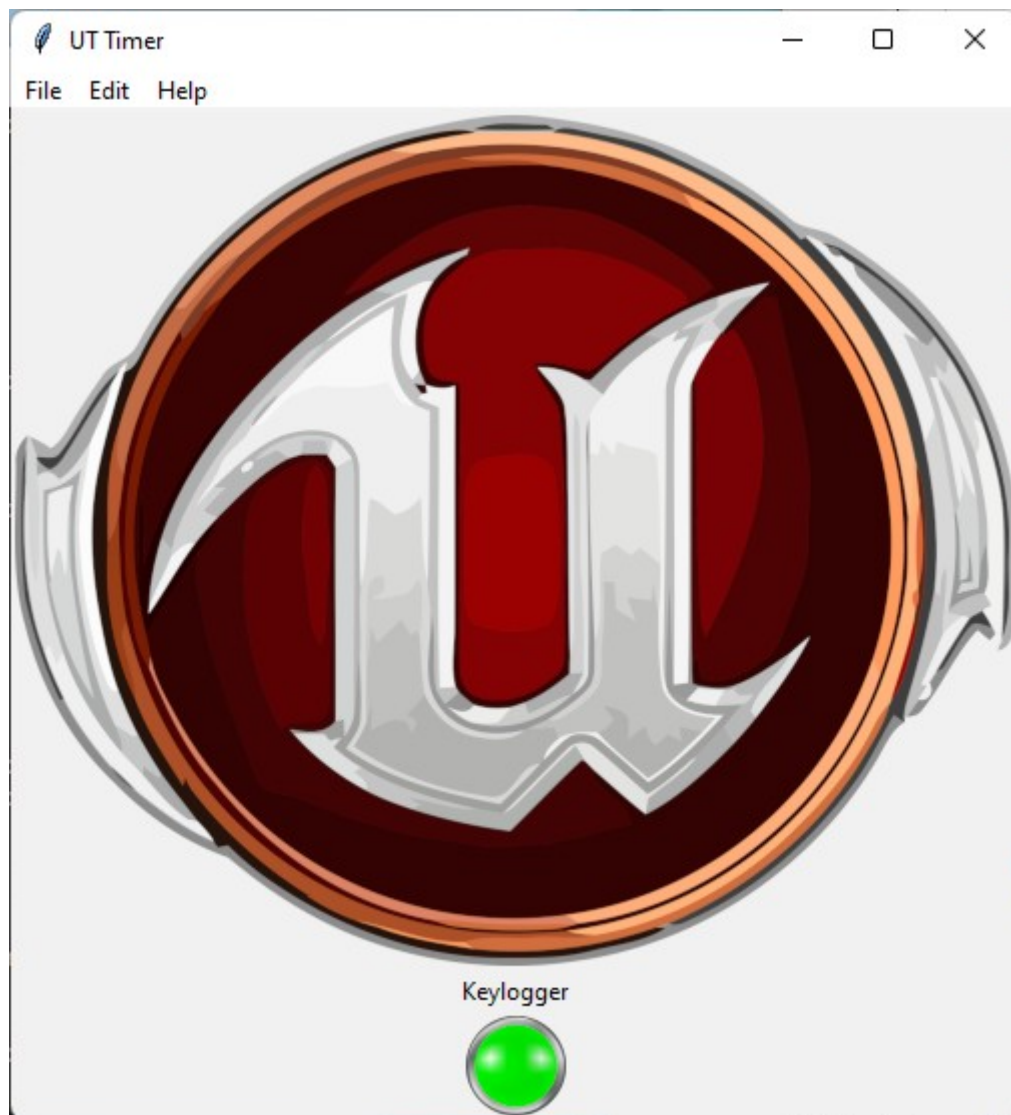
Linux

the script keylogger.bin must be executed with root privileges as shown below.

```
1 S[psy@localhost UTTimer]$ sudo ./keylogger.bin -s 192.168.1.16
applying default port as 1550
Trying to connect to server 192.168.1.16 on port 1550
server 192.168.1.16 connected on port 1550
e received message: a f g len=5
[ 'a', 'f', 'g' ]
k received message: a f g len=5
[ 'a', 'f', 'g' ]
_d S
o help = os.path.abspath(os.path.join(bundle_dir, 'help.md'))
```

Windows

External keylogger is launched automatically if configured as active (cf § Miscellaneous frame).



Logger

UTTimer provides logging features (ERROR, WARNING, INFO, DEBUG) that may help to analyse potential bugs.

Under Linux, launch UTTimer.bin (resp. UTTimer.exe for windows) with -h options for further explanation

User guide

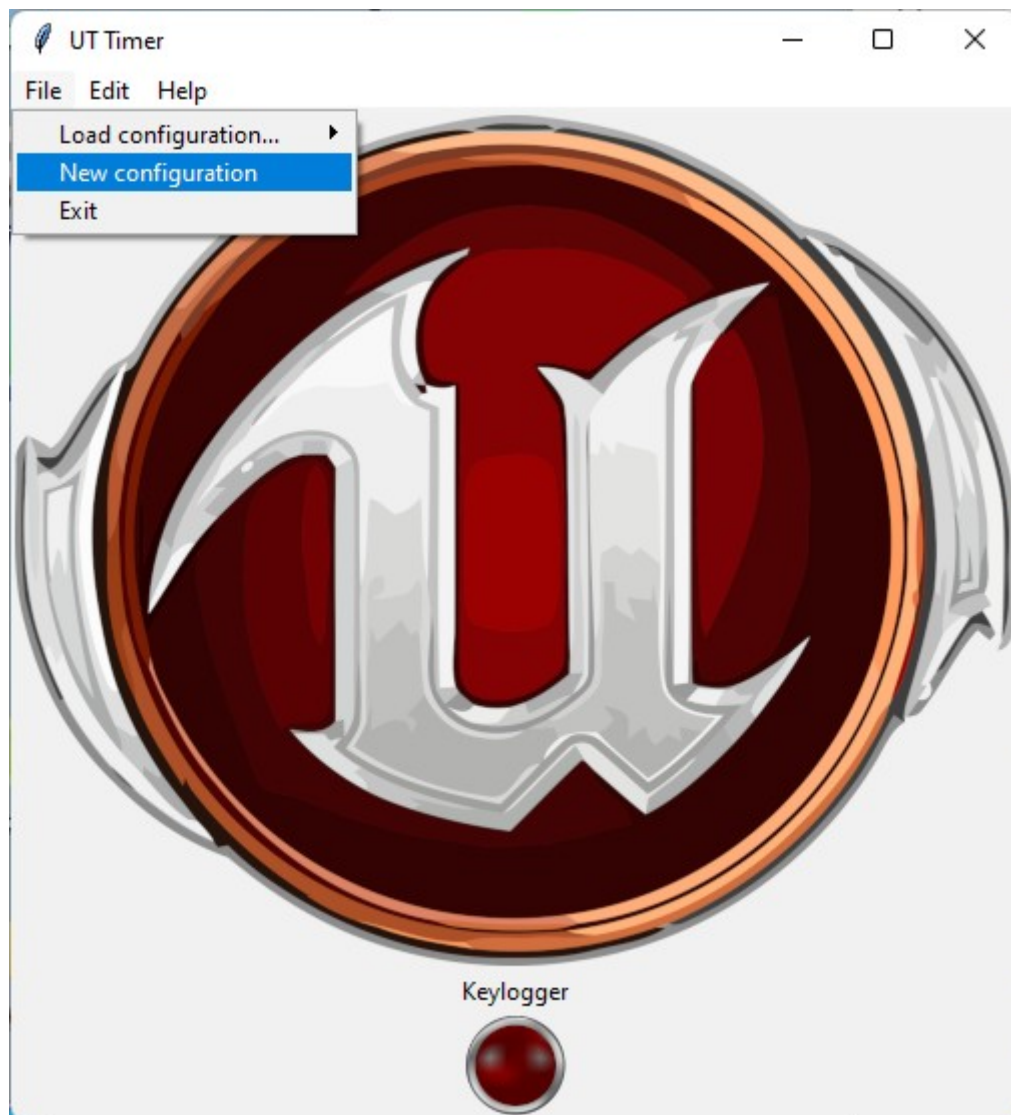
After launching UTTimer without a configuration (i.e with no argument '-c'), the following window pops up :



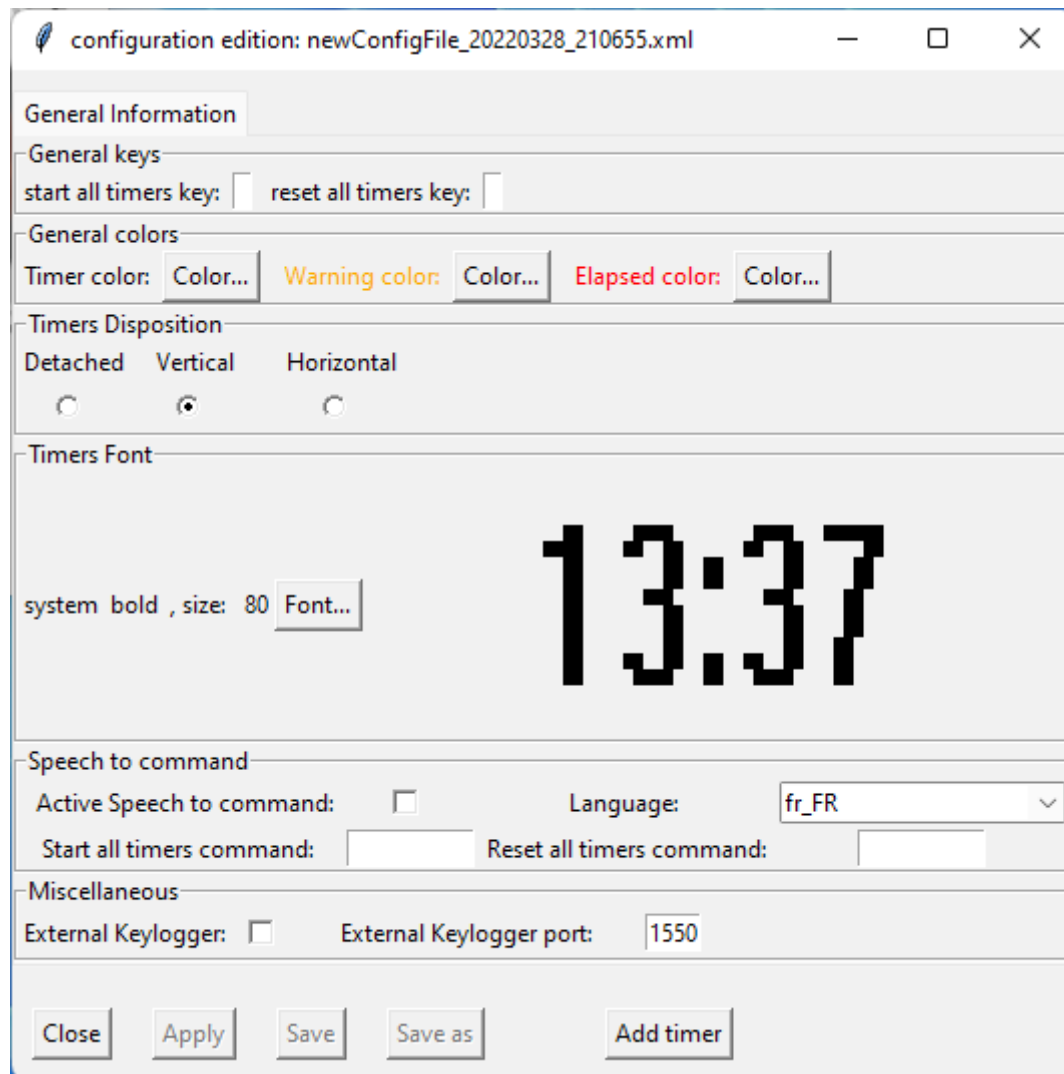
Timer construction

The next step is to build the timer(s).

Select File → New configuration as shown below



The following window pops up, displaying a notebook with «General information» tab :



The image shows a software configuration window titled "configuration edition: newConfigFile_20220328_210655.xml". The window contains several sections for configuring a digital clock or timer system.

- General Information** (selected tab):
 - General keys**: Two empty text boxes for "start all timers key:" and "reset all timers key:".
 - General colors**: Three color selection buttons labeled "Timer color:", "Warning color:" (with a yellow warning icon), and "Elapsed color:" (with a red elapsed icon).
 - Timers Disposition**: Three radio buttons for "Detached", "Vertical" (selected), and "Horizontal".
 - Timers Font**: A preview area showing the time "13:37" in a large, bold, digital font. Below the preview, it says "system bold , size: 80" and a "Font..." button.
 - Speech to command**: A checkbox for "Active Speech to command:" (unchecked), a "Language:" dropdown menu set to "fr_FR", and two empty text boxes for "Start all timers command:" and "Reset all timers command:".
 - Miscellaneous**: A checkbox for "External Keylogger:" (unchecked) and a text box for "External Keylogger port:" set to "1550".

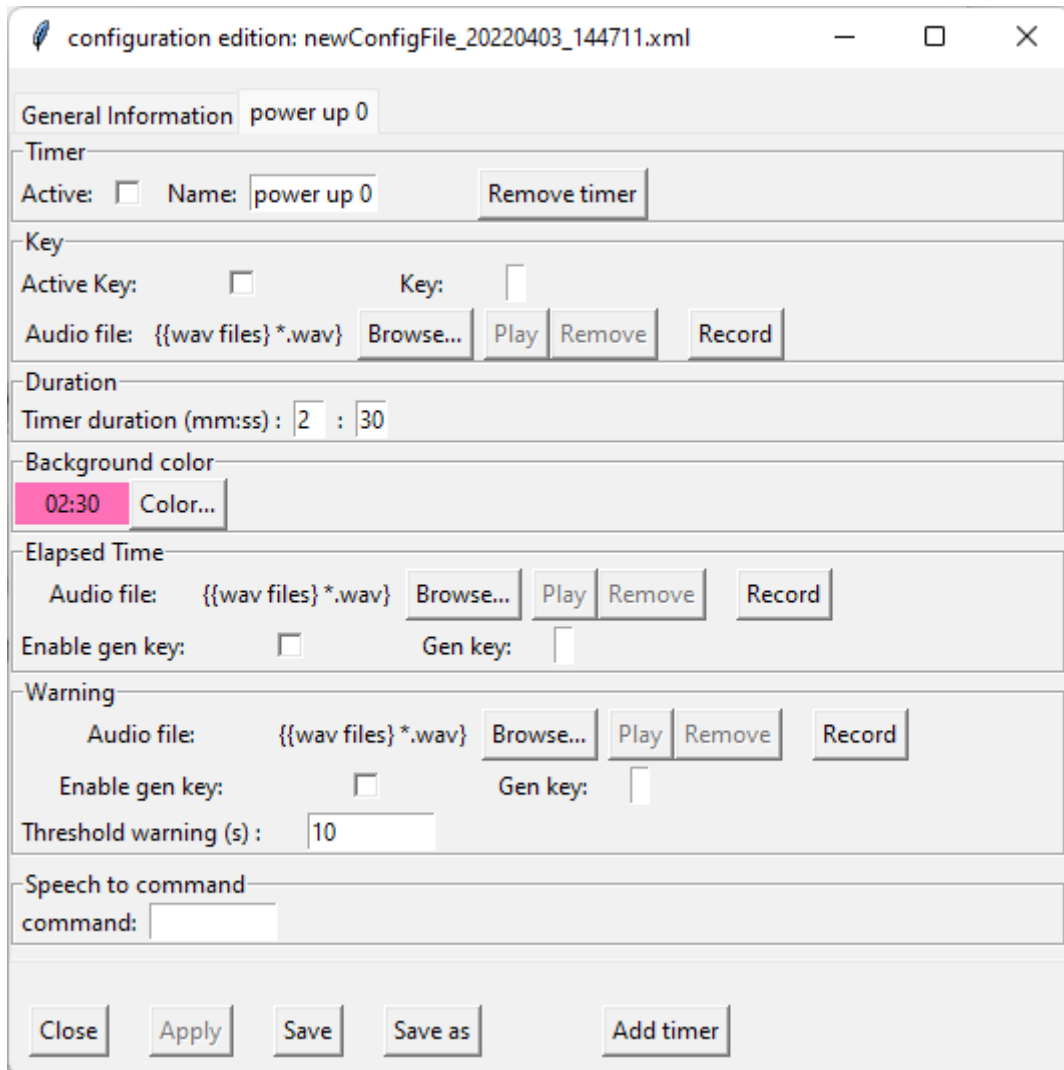
At the bottom of the window are five buttons: "Close", "Apply", "Save", "Save as", and "Add timer".

By default, a name is given for the new configuration and is displayed in the window title (here, newConfigfile_20220328_210655.xml). This name may be changed afterwards.

Note : if a configuration is previously created or loaded, modified and not saved, it will be erased.

Creating a timer

The next step is to add a timer. Click on Add Timer button and a new tab is displayed with a default name « power up 0 » as shown below.



The screenshot shows a window titled "configuration edition: newConfigFile_20220403_144711.xml". The window has several tabs: "General Information" and "power up 0". The "power up 0" tab is active, showing the following configuration options:

- Timer**
 - Active: ☐
 - Name: power up 0
 - Remove timer
- Key**
 - Active Key: ☐
 - Key: ☐
 - Audio file: {{wav files} *.wav} Browse... Play Remove Record
- Duration**
 - Timer duration (mm:ss): 2 : 30
- Background color**
 - 02:30 Color...
- Elapsed Time**
 - Audio file: {{wav files} *.wav} Browse... Play Remove Record
 - Enable gen key: ☐
 - Gen key: ☐
- Warning**
 - Audio file: {{wav files} *.wav} Browse... Play Remove Record
 - Enable gen key: ☐
 - Gen key: ☐
 - Threshold warning (s): 10
- Speech to command**
 - command:

At the bottom of the window, there are buttons: Close, Apply, Save, Save as, and Add timer.

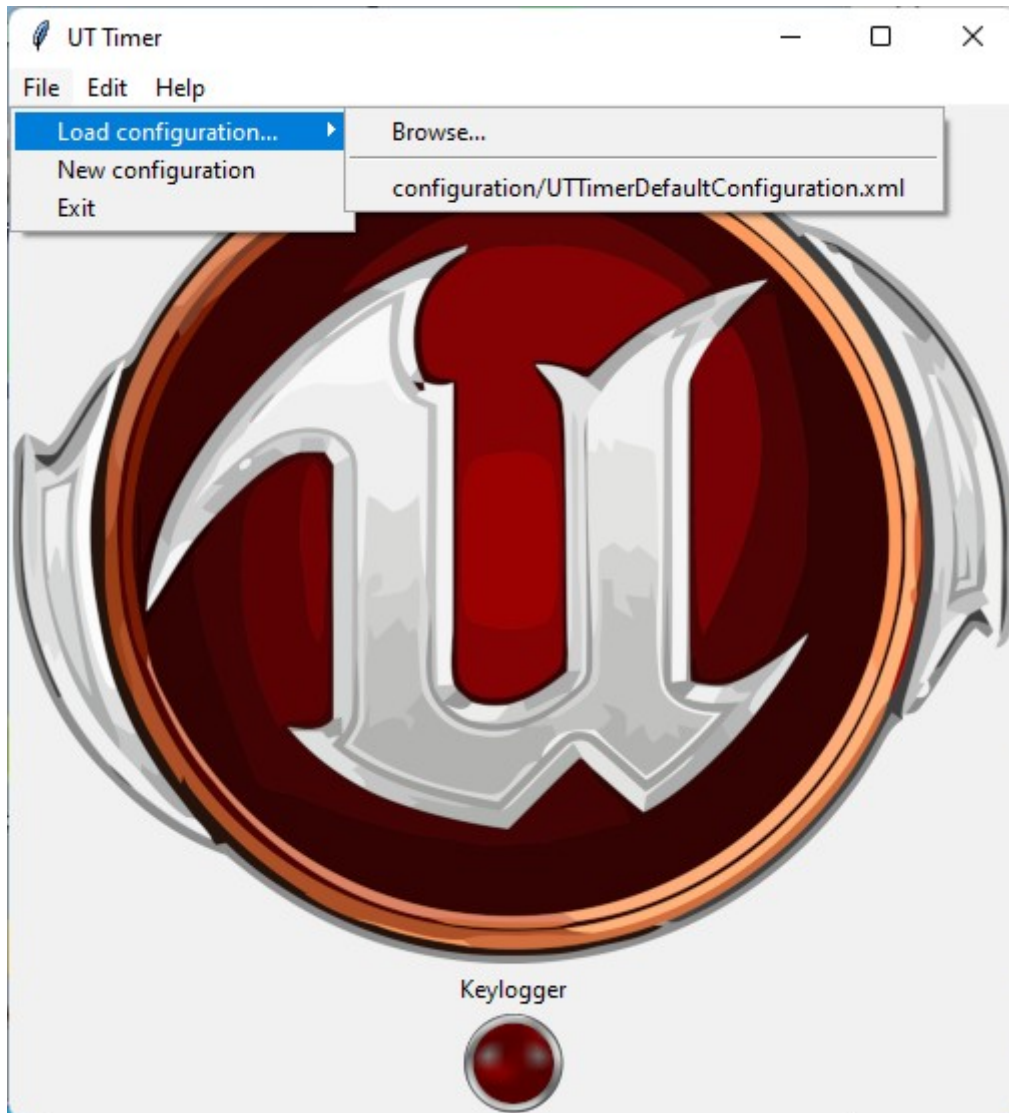
At this point, you can save the configuration (to default subdirectory configuration) or to save as a new configuration name in a specific directory or add/delete timers.

The different parameters of «General Information» tab and «timer» tabs are detailed in §Configuration edition below.

Configuration load

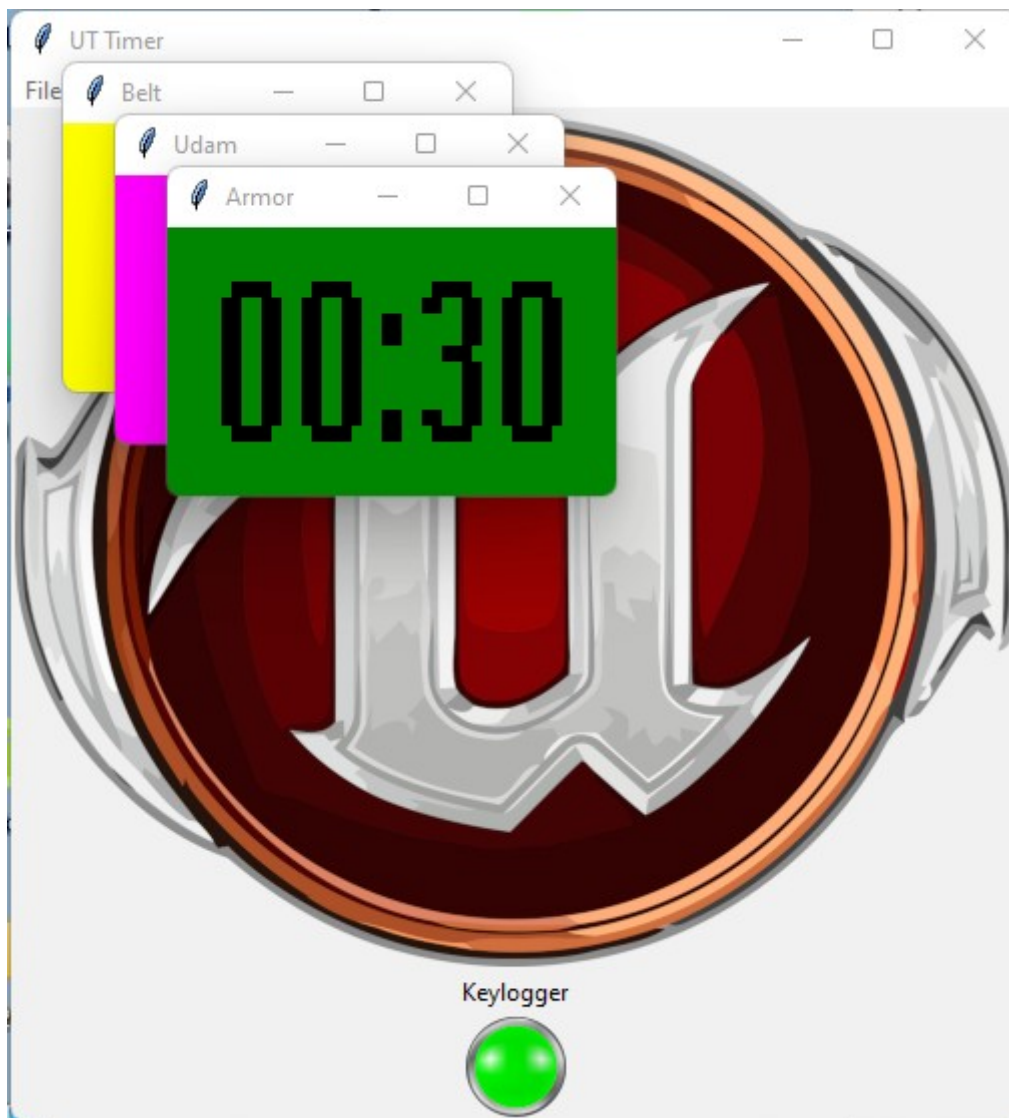
Once a configuration is saved, you could load it later or load another previously saved configuration.

Select File → load configuration. Recent configurations are proposed as shown below. File configuration may be also browsed with a file chooser (« Browse... » option)



Depending on the chosen configuration, active timers are displayed.

In the example below, three active detached timers (Belt, Udam and Armor) are displayed, with an active connected keylogger



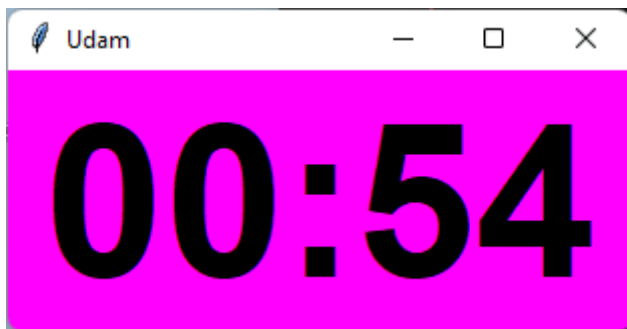
Timer activation

Three methods are available to activate or reset timer(s) :

- keystroke on focus : if timer key is setup and active and the timer window or main window has focus
- keylogger : a specific keylogger may be launched (cf §Keylogging)
- voice command : if speech recognition is activated and a word is associated (internet is required since it uses google speech)

The three methods can be setup in §Configuration edition below.

When detached, a running timer looks like :



A running timer reaching warning threshold (here 10s) looks like :



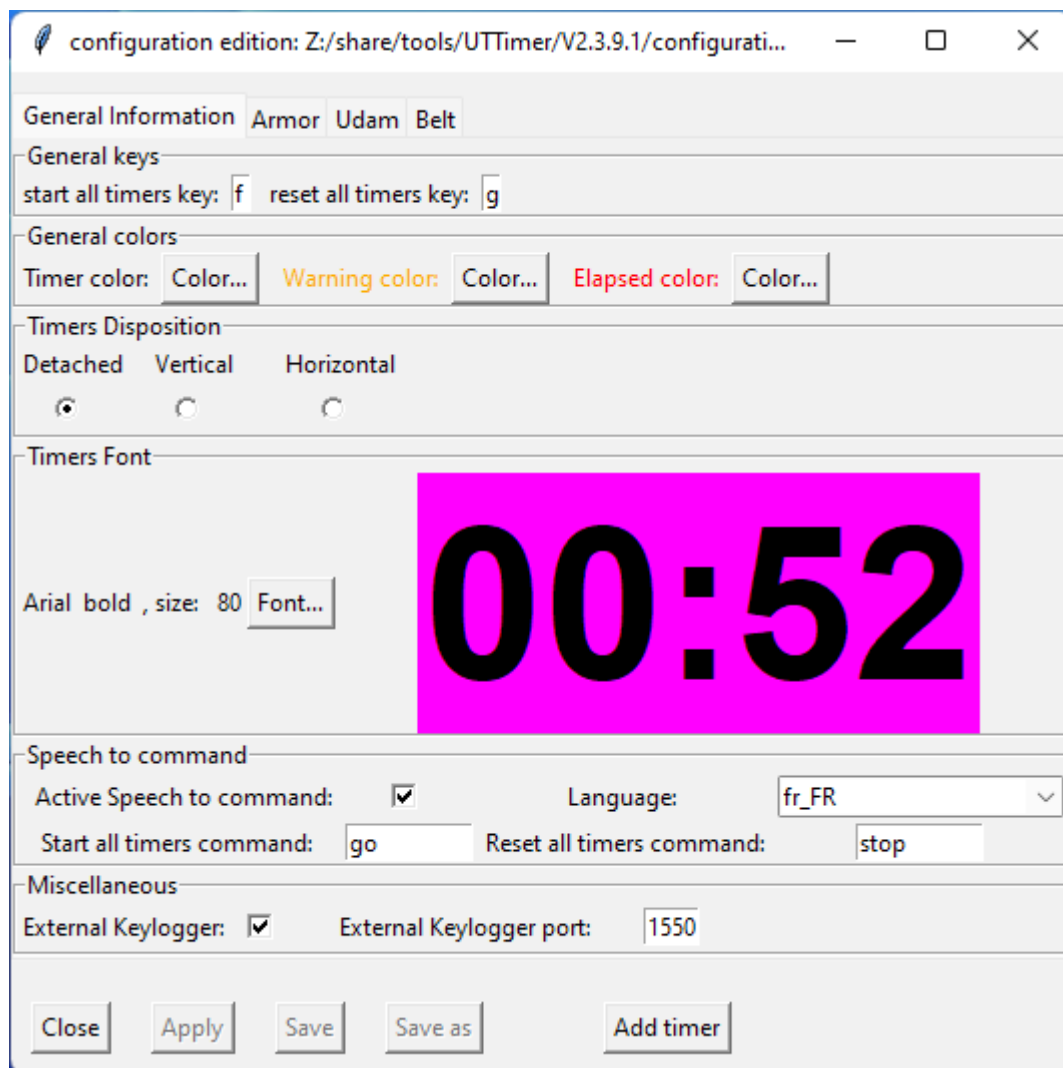
An elapsed timer looks like (underscore indicates it's the last timer to elapse):



Configuration edition

Once loaded, a configuration can be edited. Select Edit → configuration.

The following configuration editor pops up.



A notebook is presented with a general information tab, followed by timers tabs.

« Apply », « Save », « Save as » buttons are disabled by default. If any parameter is modified, command buttons become available.

If « Apply » button is used to apply, parameter is stored in memory and applied to timer 's current configuration.

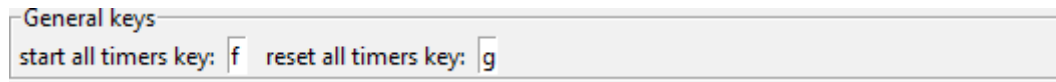
If « Save » or « Save as » buttons are used to save a configuration, modified parameters are stored on disk in the chosen configuration file and applied to timer current configuration (if not applied before).

General Information tab

The tab comprises several frames.

General keys frame

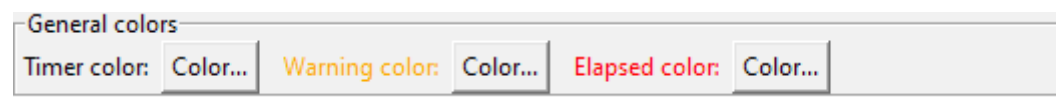
A keystroke could be created to start all timers simultaneously (useful for start of game). Idem to reset all timers simultaneously.



General keys

start all timers key: reset all timers key:

General colors frame

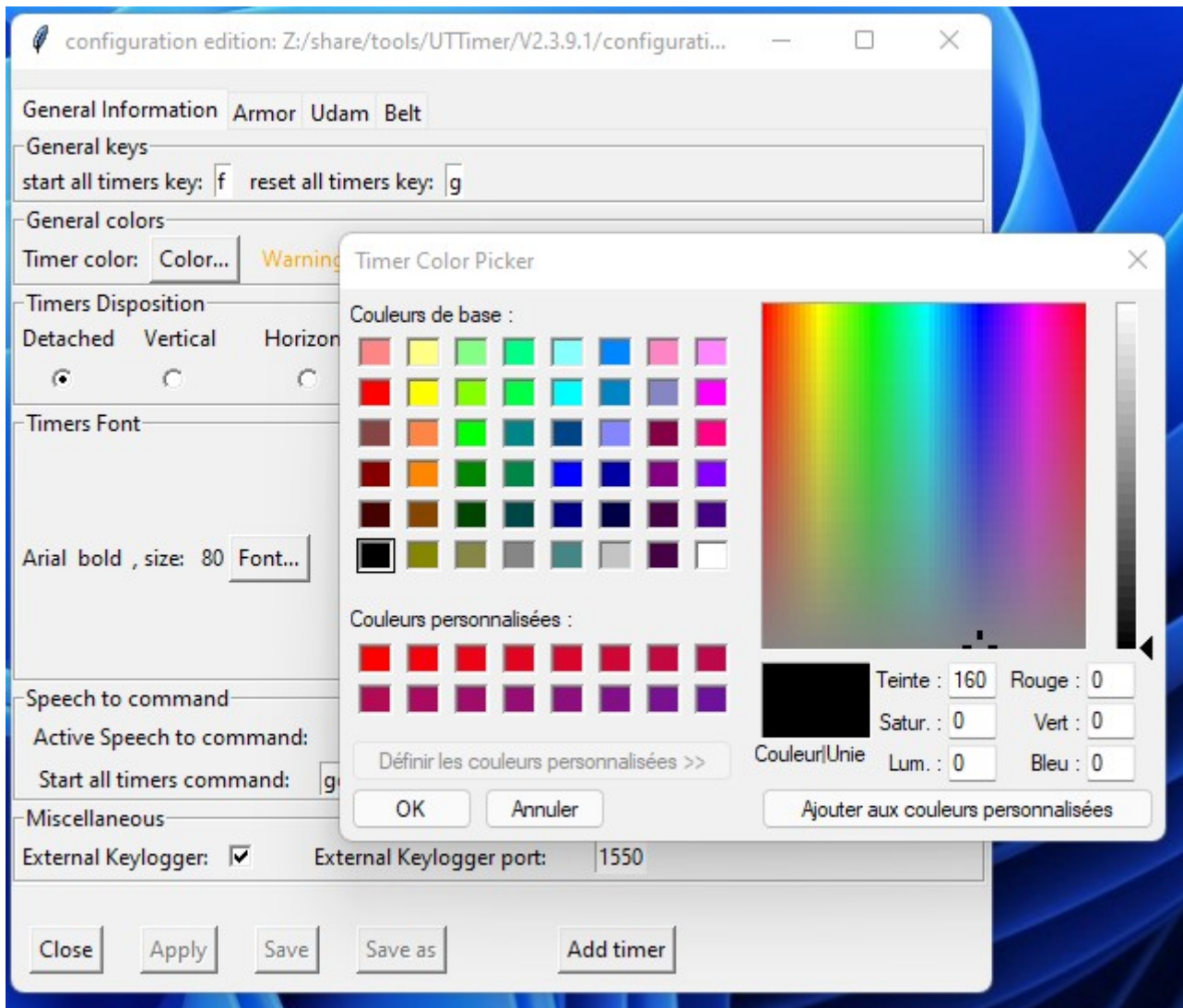


General colors

Timer color: Warning color: Elapsed color:

Three colors may be choosed for default foreground font color, warning foregroundf font color and elapsed foreground color.

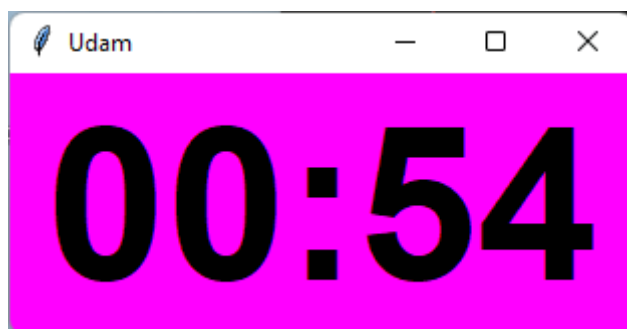
Click on Color button to modify the corresponding foreground color. The following color picker pops up.



Click « OK » to choose the selected color or « Cancel » to cancel the operation (and yes I'm french -:)).

Examples of detached timer with specific foreground colors :

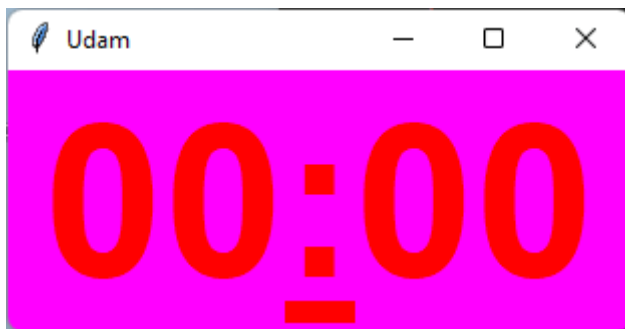
Running timer



Warning threshold



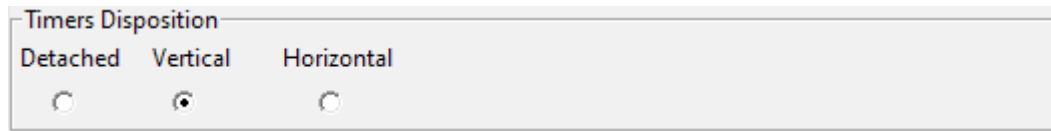
Elapsed timer



Note the underscore below the two points separating minutes and seconds : it indicates this timer is the last one to reach its deadline.

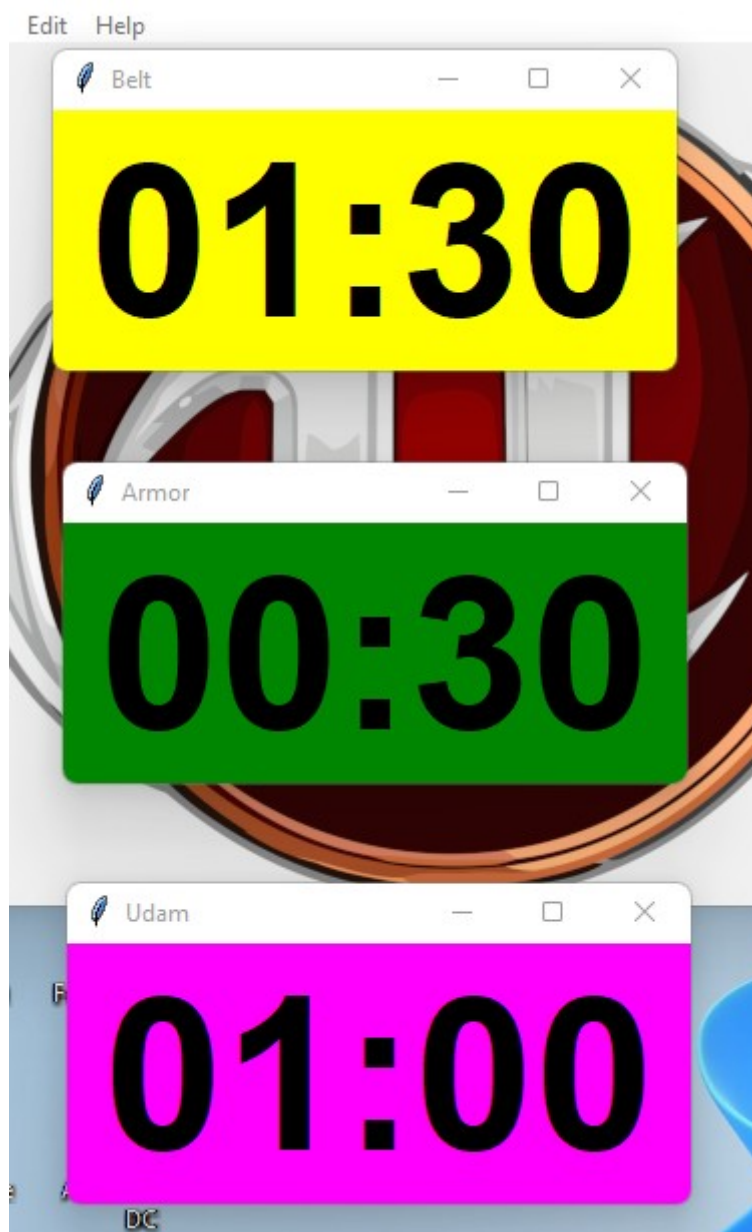
Timers disposition frame

Three dispositions are available :



detached

Timers are displayed through independant windows that could be move elsewhere in the screen.



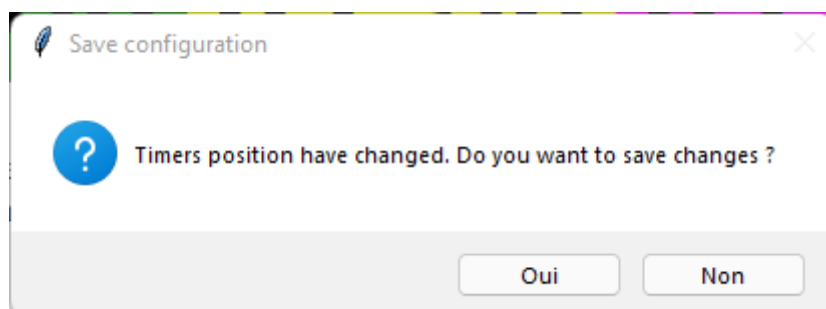
Vertical



Horizontal



Note : attached timers position in vertical or horizontal layout could be changed by drag and drop. If the position has changed, a popup asking to eventually save the modification is proposed as shown below

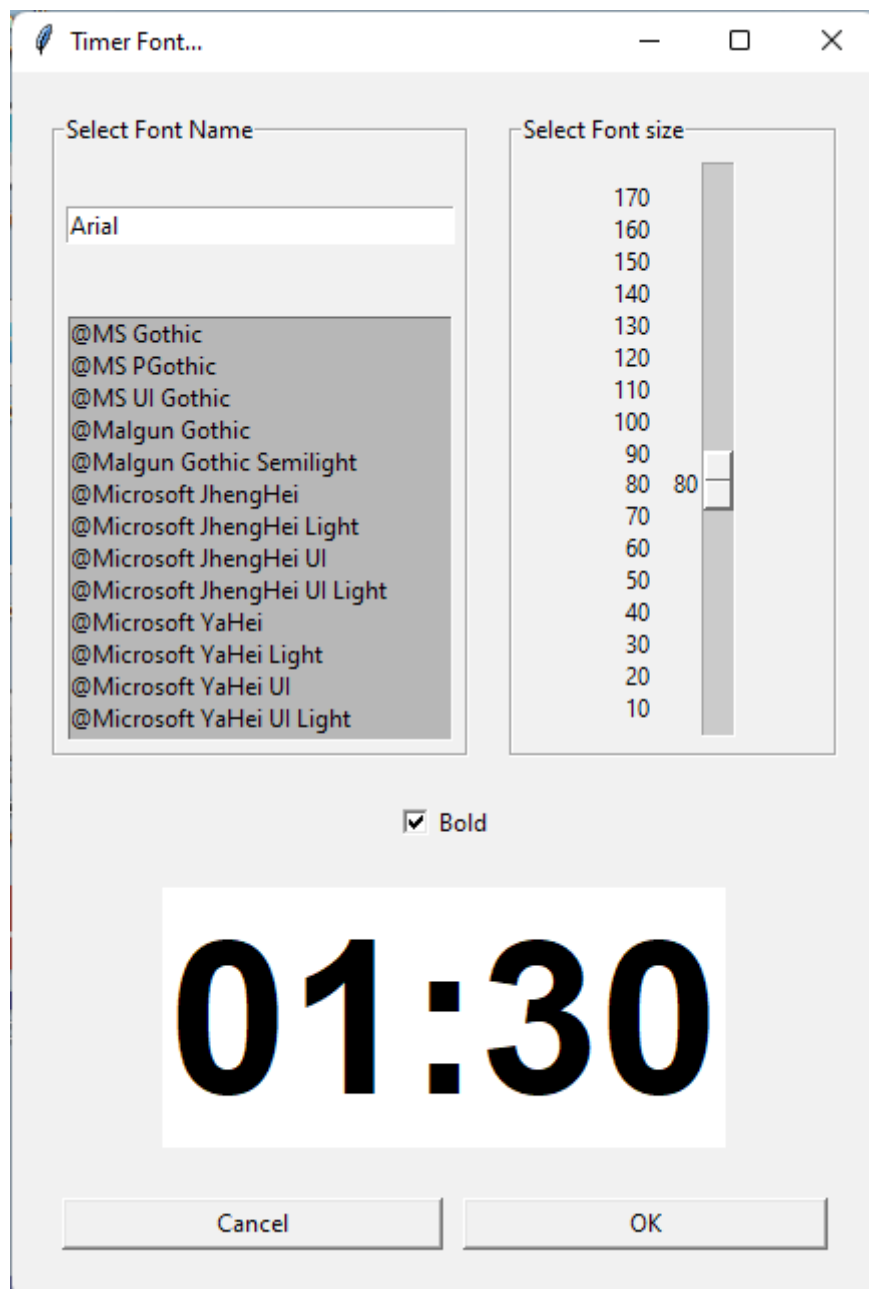


Timer font frame

Font may be configured with «Fon » button. A font chooser is displayed as shown below.

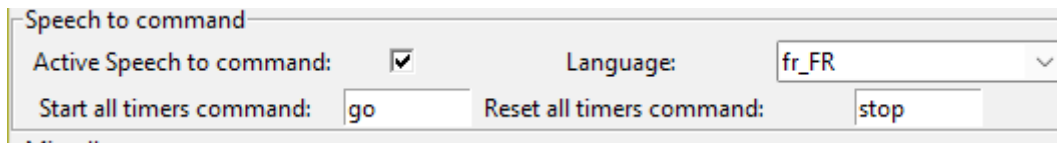


Font name, size and weight can be selected.



Speech to command frame

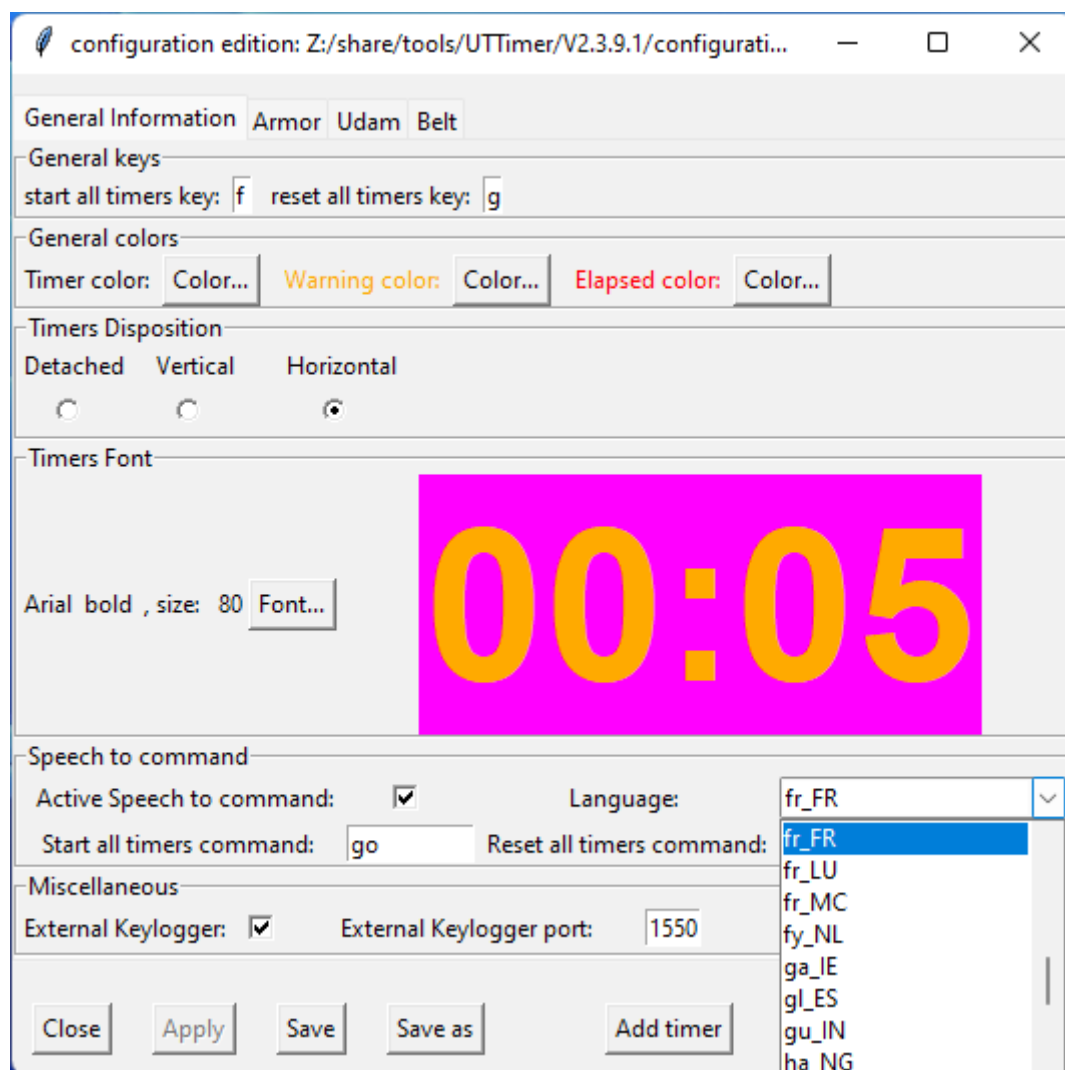
Speech may activated/disabled.



This screenshot shows a configuration window titled 'Speech to command'. It contains the following elements:

- A checkbox labeled 'Active Speech to command:' which is checked.
- A dropdown menu labeled 'Language:' with 'fr_FR' selected.
- A text input field labeled 'Start all timers command:' containing the text 'go'.
- A text input field labeled 'Reset all timers command:' containing the text 'stop'.

Language may be chosen depending on location and specific region.



This screenshot shows the 'configuration edition' window for UTTimer V2.3.9.1. The window has a title bar and several tabs: 'General Information', 'Armor', 'Udam', and 'Belt'. The 'General Information' tab is active. It contains the following sections:

- General keys:** 'start all timers key:' with 'f' and 'reset all timers key:' with 'g'.
- General colors:** 'Timer color:' (Color...), 'Warning color:' (Color...), and 'Elapsed color:' (Color...).
- Timers Disposition:** Radio buttons for 'Detached', 'Vertical', and 'Horizontal' (selected).
- Timers Font:** A preview area showing 'Arial bold , size: 80' and a large digital timer display showing '00:05' in orange on a pink background.
- Speech to command:** A checkbox labeled 'Active Speech to command:' which is checked, a dropdown menu labeled 'Language:' with 'fr_FR' selected, and text input fields for 'Start all timers command:' (go) and 'Reset all timers command:'.
- Miscellaneous:** A checkbox labeled 'External Keylogger:' which is checked, and a text input field labeled 'External Keylogger port:' with '1550'.

At the bottom of the window are buttons for 'Close', 'Apply', 'Save', 'Save as', and 'Add timer'. A list of languages is visible in the dropdown menu: fr_FR, fr_LU, fr_MC, fy_NL, ga_IE, gl_ES, gu_IN, and ha_NG.

Command words may be chosen for starting/reset all timers. A preliminary training is recommended to find the best word that could be easily recognized.

Miscellaneous frame

Miscellaneous	
External Keylogger:	<input checked="" type="checkbox"/>
External Keylogger port:	<input type="text" value="1550"/>

Keylogger and TCP/IP port server are configurable (cf §Keylogging).

Timer tab

The timer tab comprises several frames.

The screenshot shows a configuration editor window titled "configuration edition: newConfigFile_20220403_144711.xml". The "Timer" tab is active, showing a list of timers. The first timer is "power up 0" and the second is "power up 1". The "power up 1" timer is selected, and its details are shown in the frames below:

- General Information**: "power up 0" and "power up 1" (selected).
- Timer**: "Active:" checkbox is unchecked. "Name:" is "power up 1". "Remove timer" button is present.
- Key**: "Active Key:" checkbox is unchecked. "Key:" is empty. "Audio file:" is "{{wav files} *.wav}". "Browse...", "Play", "Remove", and "Record" buttons are present.
- Duration**: "Timer duration (mm:ss) : 2 : 30".
- Background color**: "02:30" and "Color..." button.
- Elapsed Time**: "Audio file:" is "{{wav files} *.wav}". "Browse...", "Play", "Remove", and "Record" buttons are present. "Enable gen key:" checkbox is unchecked. "Gen key:" is empty.
- Warning**: "Audio file:" is "{{wav files} *.wav}". "Browse...", "Play", "Remove", and "Record" buttons are present. "Enable gen key:" checkbox is unchecked. "Gen key:" is empty. "Threshold warning (s) : 10".
- Speech to command**: "command:" is empty.

At the bottom, there are buttons: "Close", "Apply", "Save", "Save as", and "Add timer".

Timer frame

The screenshot shows the "Timer" frame with the following details:

- Timer**: "Active:" checkbox is checked. "Name:" is "Armor". "Remove timer" button is present.

Timer may be activated or disabled.

Name is configurable and timer may be removed with « remove button » (tab disappears from configuration editor if timer is removed)

Key frame

Key may be activated or disabled and keystroke may be set (one character)

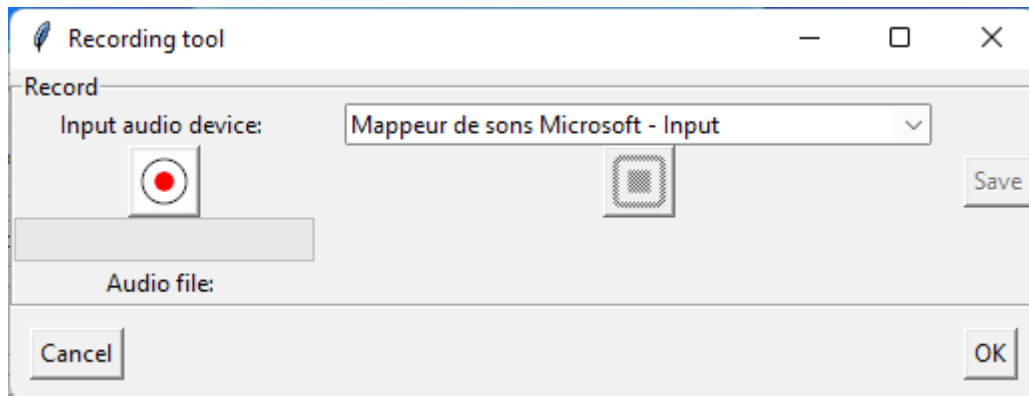
The screenshot shows the "Key" frame with the following details:

- Key**: "Active Key:" checkbox is unchecked. "Key:" is empty. "Audio file:" is "{{wav files} *.wav}". "Browse...", "Play", "Remove", and "Record" buttons are present.

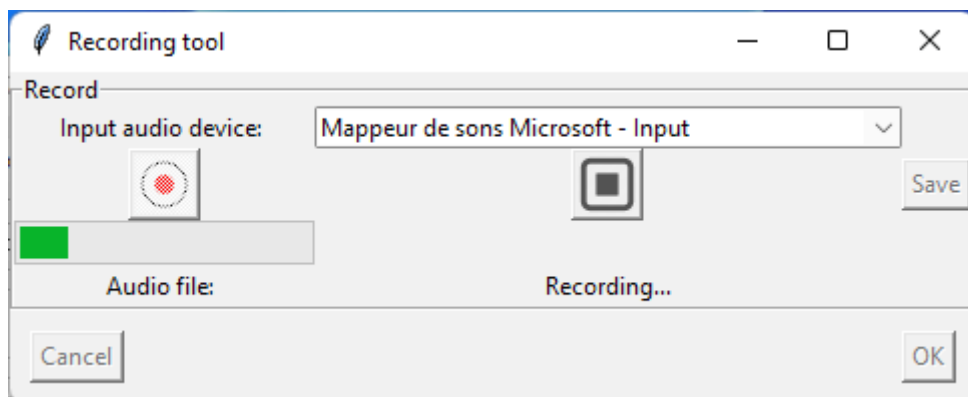
When timer is triggered, an audio message may be played.

Audio message can be browsed, played (m4a, mp3 or wav on linux platform, wav audio files only on windows platform), removed or recorded (wav audio files).

To record an audio file, use « Record » button . The following window pops up:

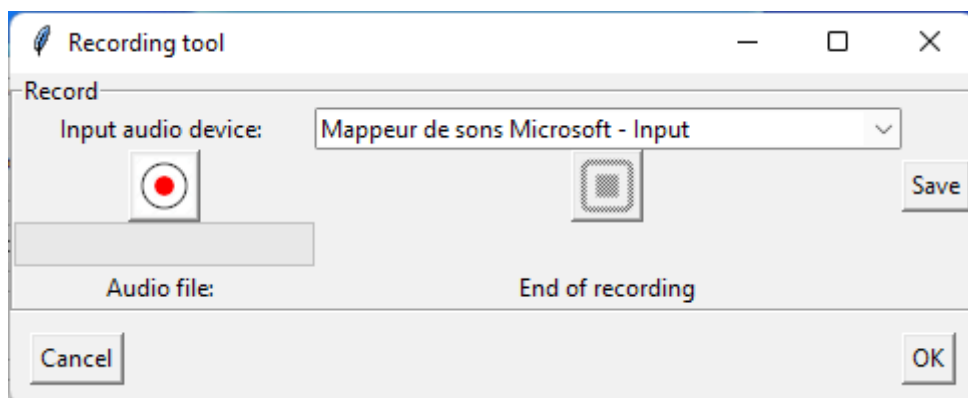


Select appropriate input device (generally the first or with MIC in the name of input device) and push red button to record your audio message.

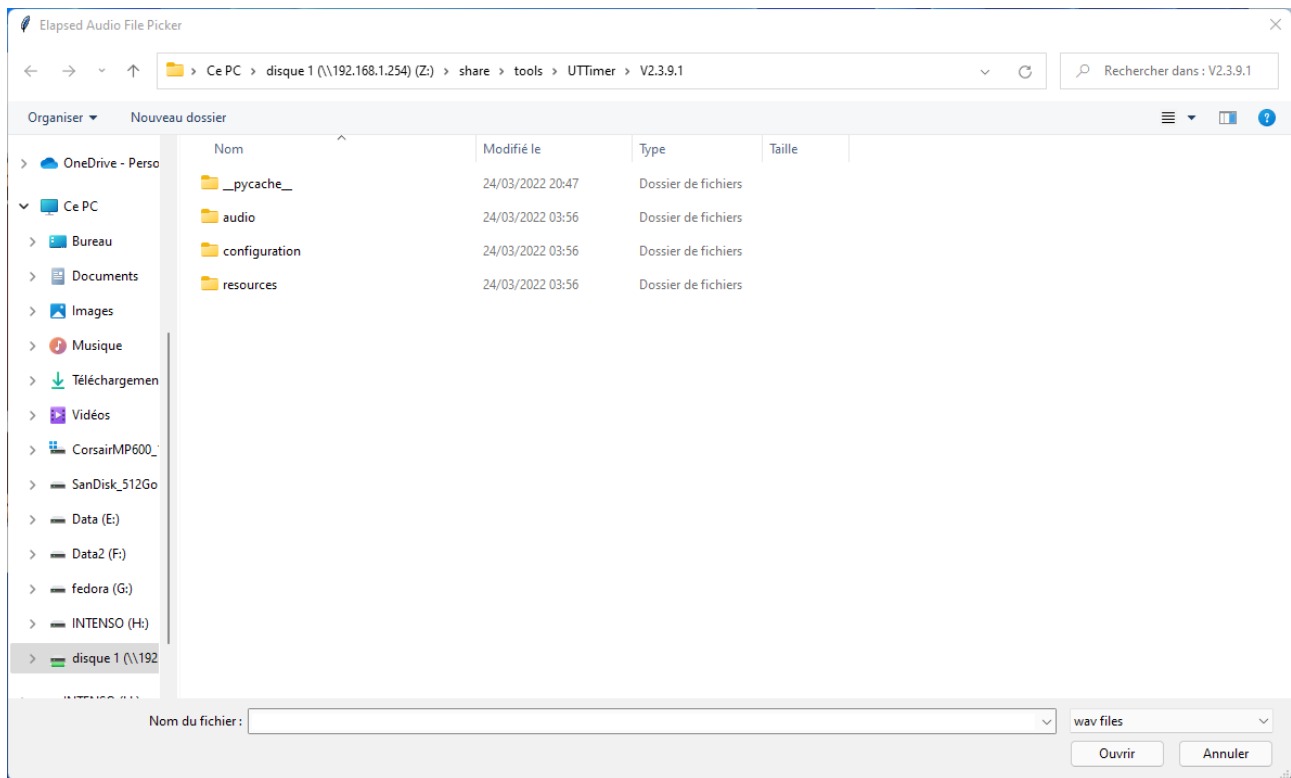


A green bar fluctuates while recording, thus indicating voice detection.

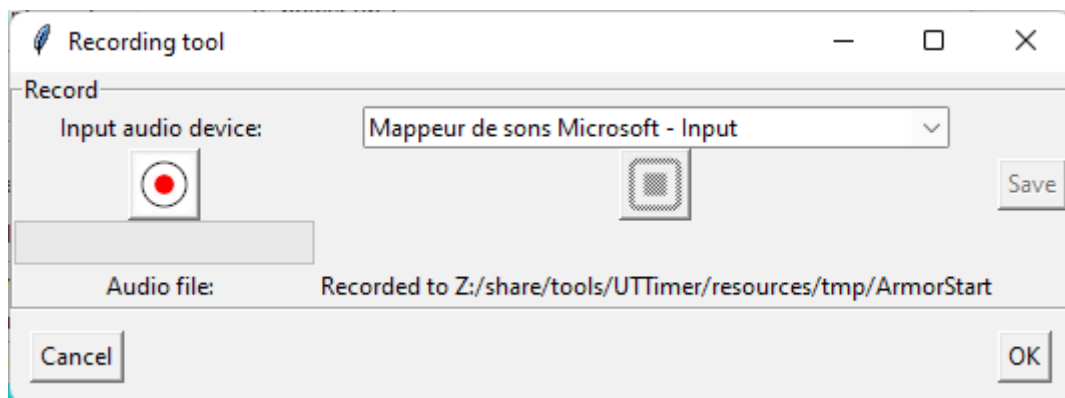
To stop recording, use the black button. The window content changes as shown below:



The audio message may be saved using « Save » button with a file chooser.



Once chosen, the recording tool window looks like:



File may be then associated with OK button (recording tool window closes) and filename is displayed at the left of the browse button of Elapsed Time frame as shown below.

configuration edition: newConfigFile_20220403_144711.xml

General Information power up 0 power up 1

Timer

Active: ☐ Name: power up 1 Remove timer

Key

Active Key: ☐ Key: ☐

Audio file: ArmorStart.wav Browse... Play Remove Record

Duration

Timer duration (mm:ss) : 2 : 30

Background color

02:30 Color...

Elapsed Time

Audio file: {{wav files} *.wav} Browse... Play Remove Record

Enable gen key: ☐ Gen key: ☐

Warning

Audio file: {{wav files} *.wav} Browse... Play Remove Record

Enable gen key: ☐ Gen key: ☐

Threshold warning (s) : 10

Speech to command

command:

Close Apply Save Save as Add timer

Duration frame

Minutes and second are configurable

Duration

Timer duration (mm:ss) : 0 : 30

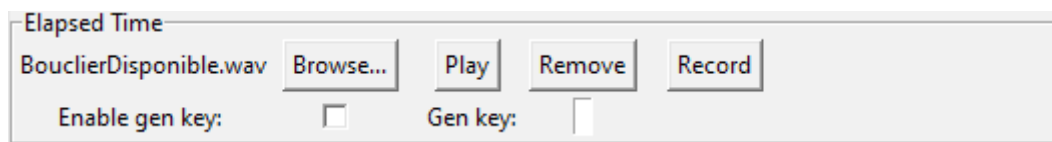
Background color frame

Background color

00:30 Color...

A color picker is available with « Color... » button to modify timer background color

Elapsed time frame

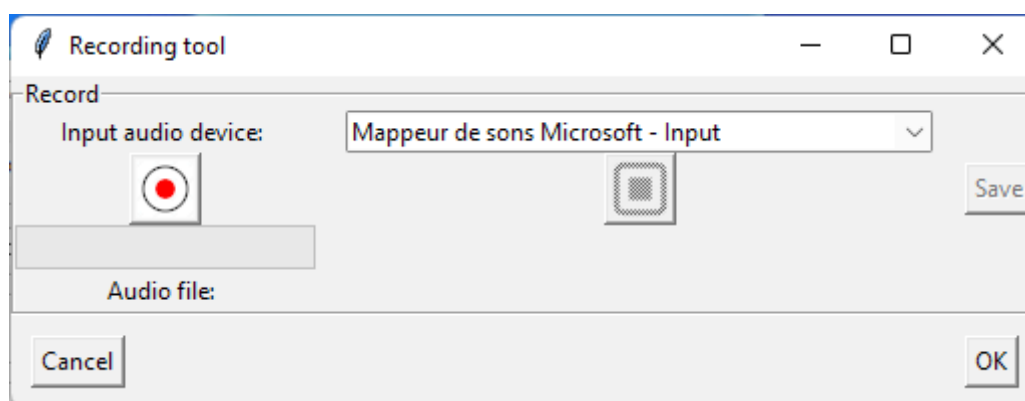


When timer duration is elapsed, an audio message may be played and a fake keystroke may be generated.

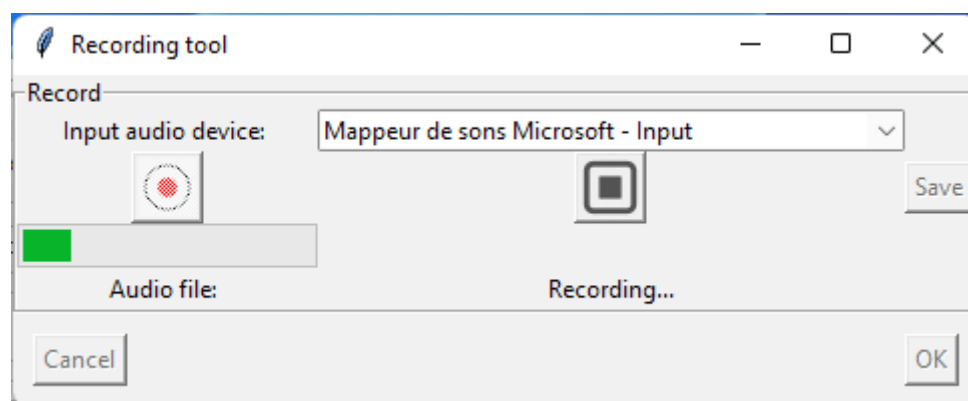
Audio message can be browsed, played (m4a, mp3 or wav on linux platform, wav audio files only on windows platform), removed or recorded (wav audio files).

Key event may be activated and if so, generated when timer duration elapsed. It may be useful to trigger a message for the team during gaming if game allows it.

To record an audio file, use « Record » button . The following window pops up:

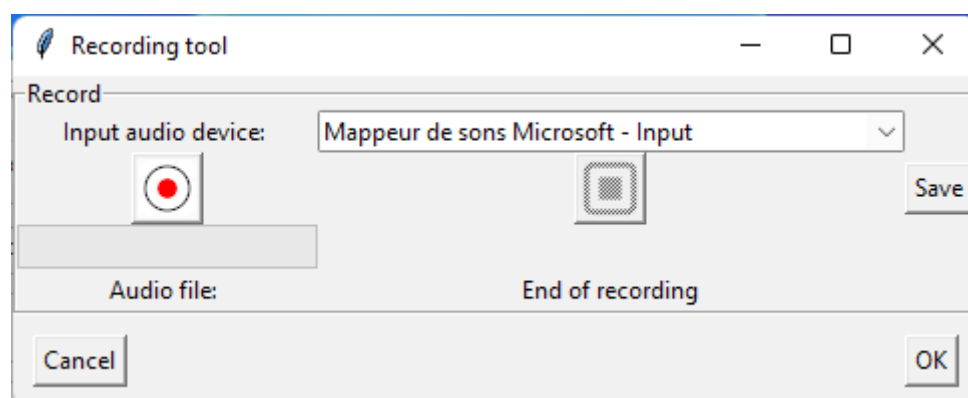


Select appropriate input device (generally the first or with MIC in the name of input device) and push red button to record your audio message.



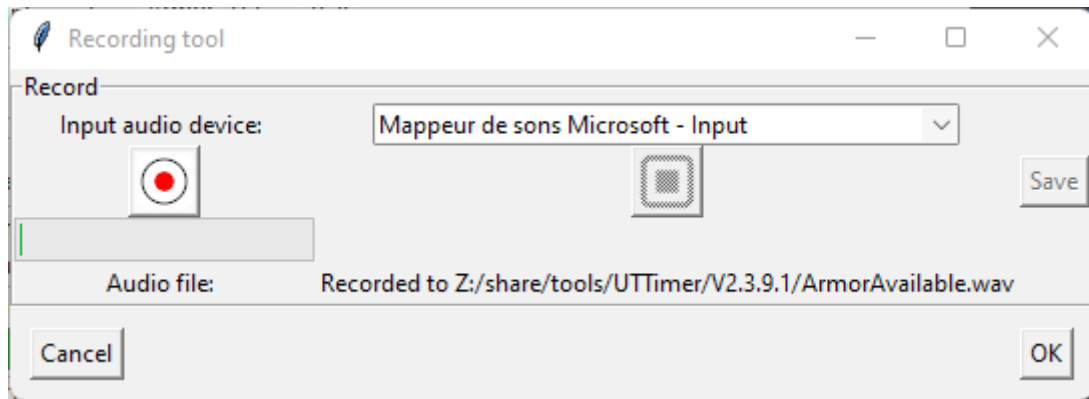
A green bar fluctuates while recording, thus indicating voice detection.

To stop recording, use the black button. The window content changes as shown below:

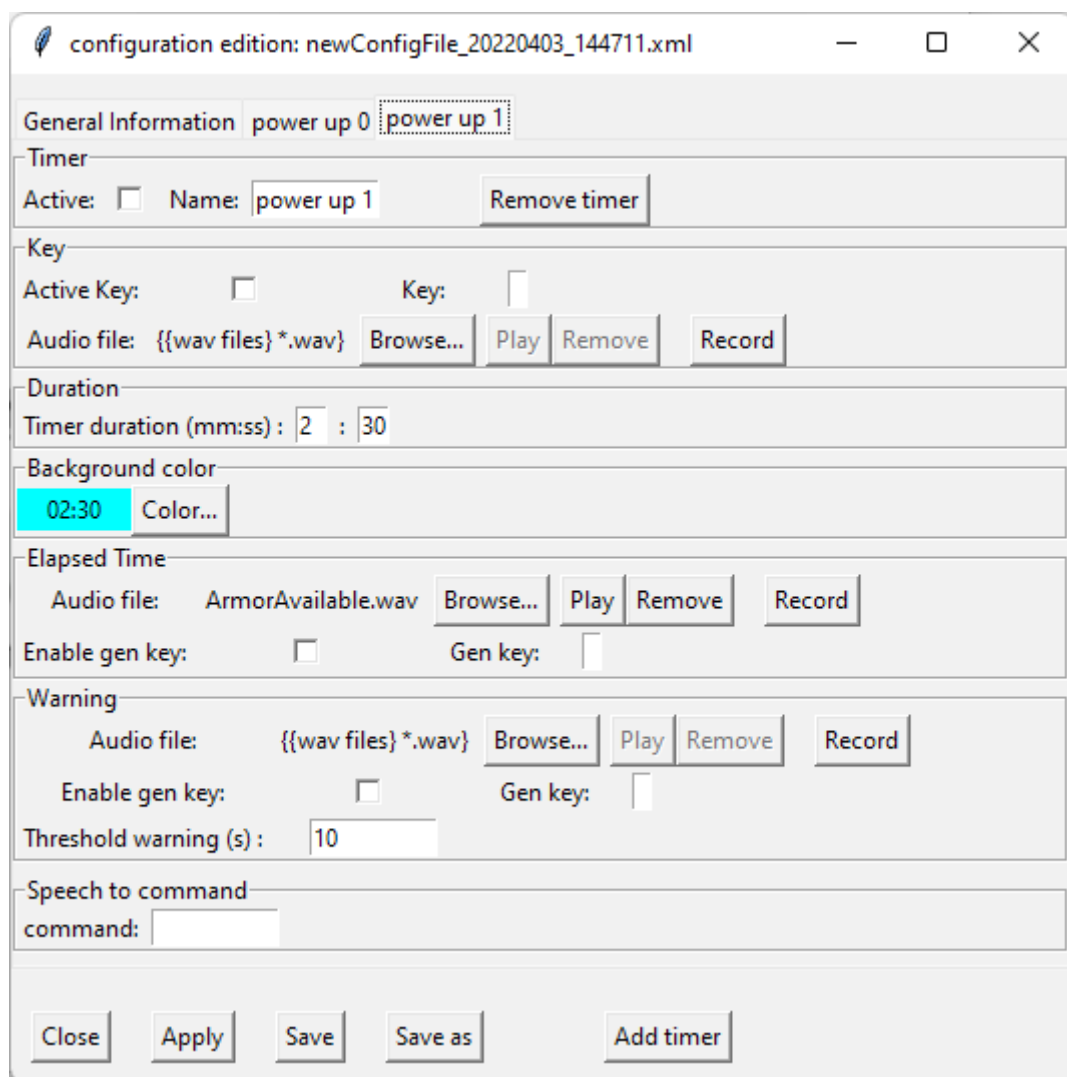


The audio message may be saved using « Save » button with a file chooser.

Once chosen, the recording tool window looks like:

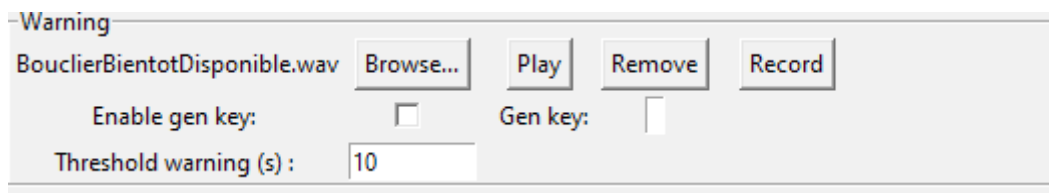


File may be then associated with OK button (recording tool window closes) and filename is displayed at the left of the browse button of Elapsed Time frame as shown below.



Warning frame

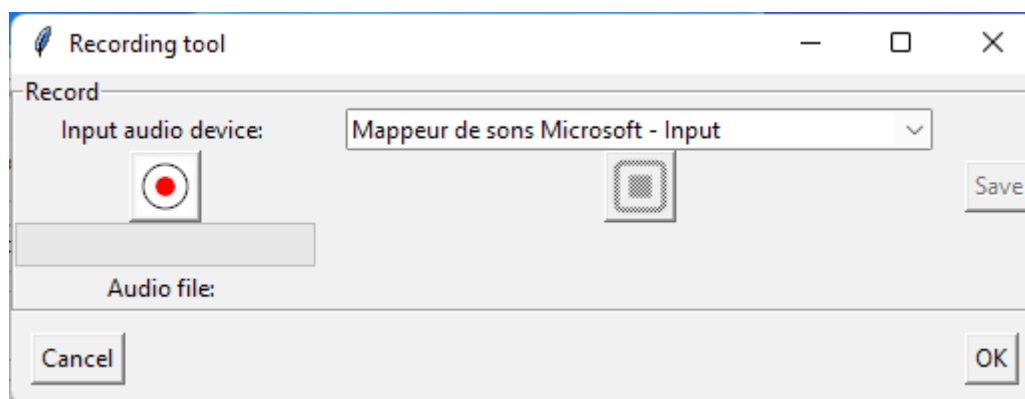
When warning threshold is reached, an audio message may be played and a fake keystroke may be generated.



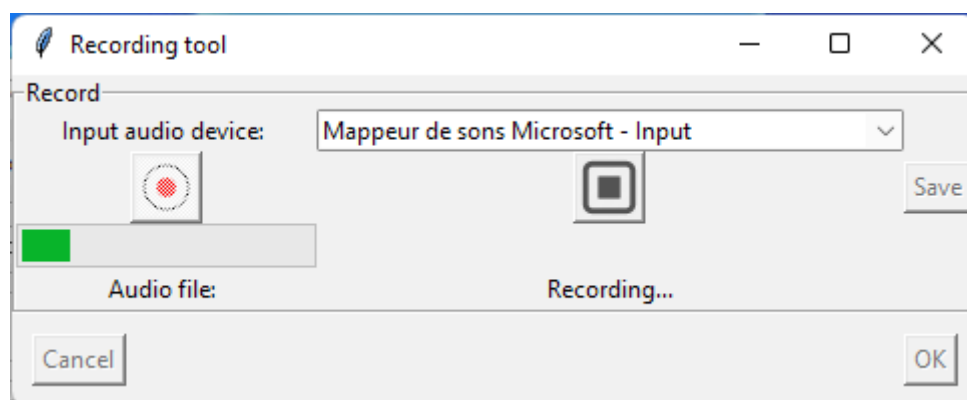
Audio message can be browsed, played (m4a, mp3 or wav on linux platform, wav audio files only on windows platform), removed or recorded (wav audio files).

Key event may be activated and if so, generated when warnig threshold is reached. It may be useful to trigger a message for the team during gaming if game allows it.

To record an audio file, use «Record» button . The following window pops up:

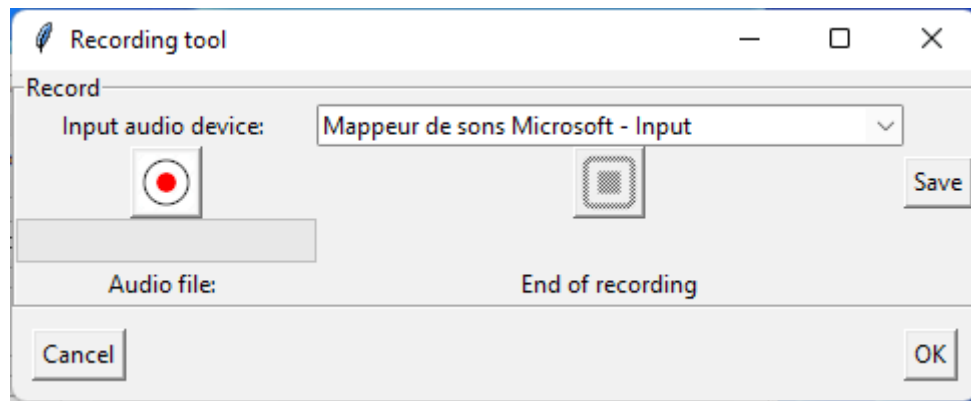


Select appropriate input device (generally the first or with MIC in the name of input device) and push the red button to record your audio message.

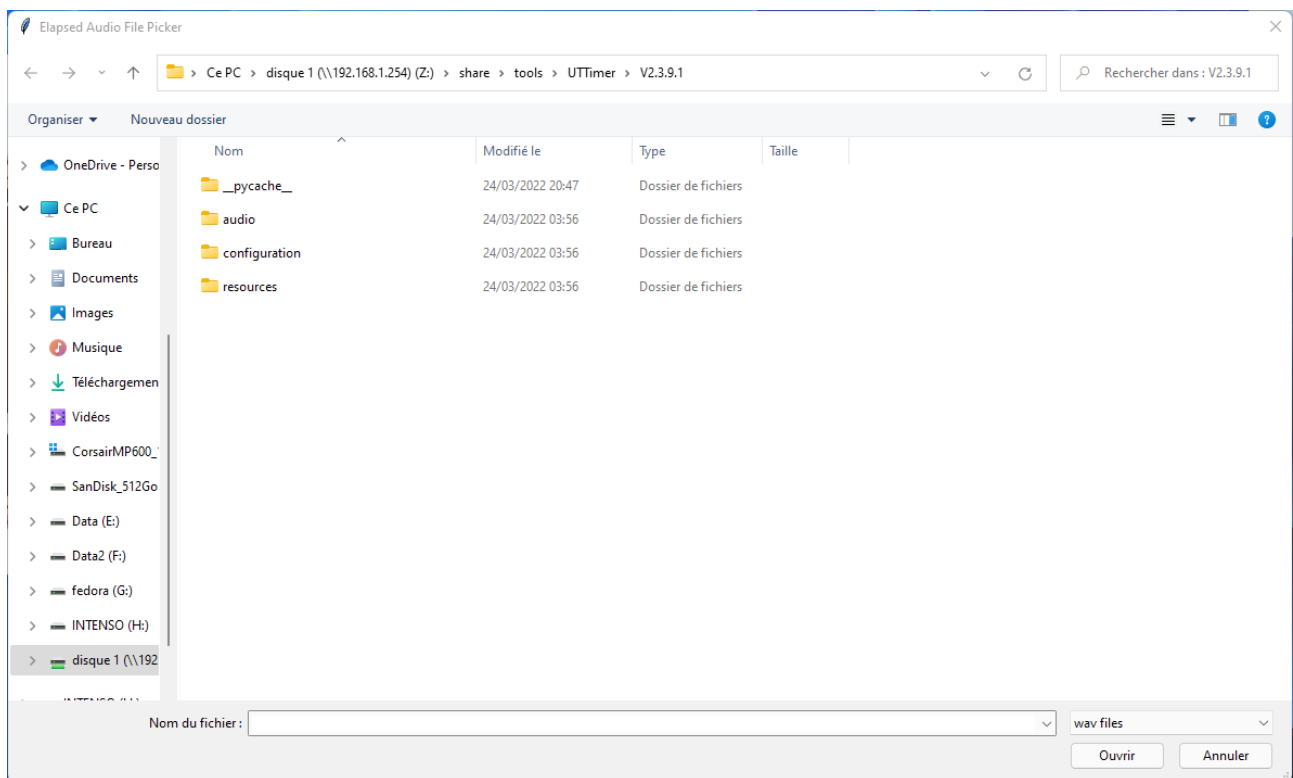


A green bar fluctuates while recording, thus indicating voice detection.

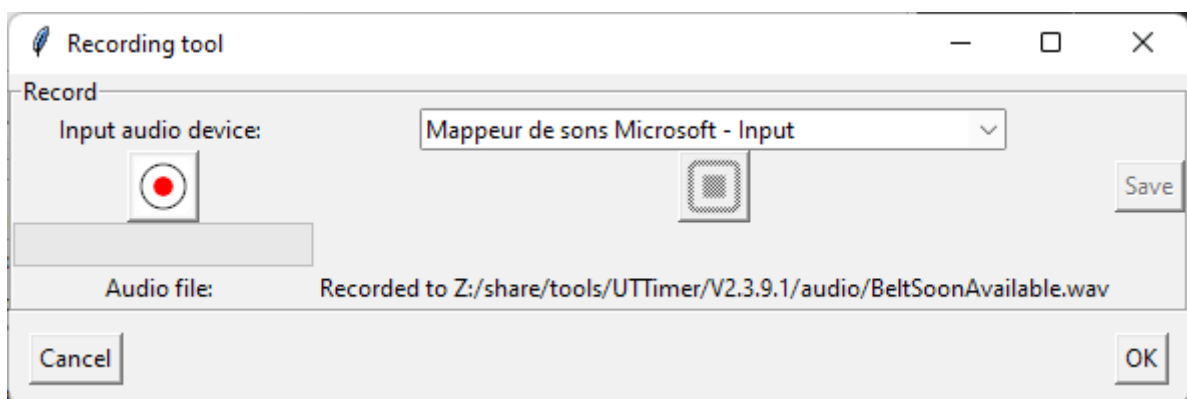
To stop recording, use the black button. The window content changes as shown below:



The audio message may be saved using « Save » button with a file chooser.



Once chosen, the recording tool window looks like below:



File may be then associated with OK button (recording tool window closes and filename is displayed at the left of the browse button of Warning frame as shown below.

configuration edition: newConfigFile_20220403_144711.xml

General Information power up 0 power up 1

Timer

Active: ☐ Name: power up 1 Remove timer

Key

Active Key: ☐ Key: ☐

Audio file: {{wav files} *.wav} Browse... Play Remove Record

Duration

Timer duration (mm:ss) : 2 : 30

Background color

02:30 Color...

Elapsed Time

Audio file: ArmorAvailable.wav Browse... Play Remove Record

Enable gen key: ☐ Gen key: ☐

Warning

Audio file: BeltSoonAvailable.wav Browse... Play Remove Record

Enable gen key: ☐ Gen key: ☐

Threshold warning (s) : 10

Speech to command

command:

Close Apply Save Save as Add timer

Speech to command frame

A word can be associated to command timer activation or reset.

Speech to command

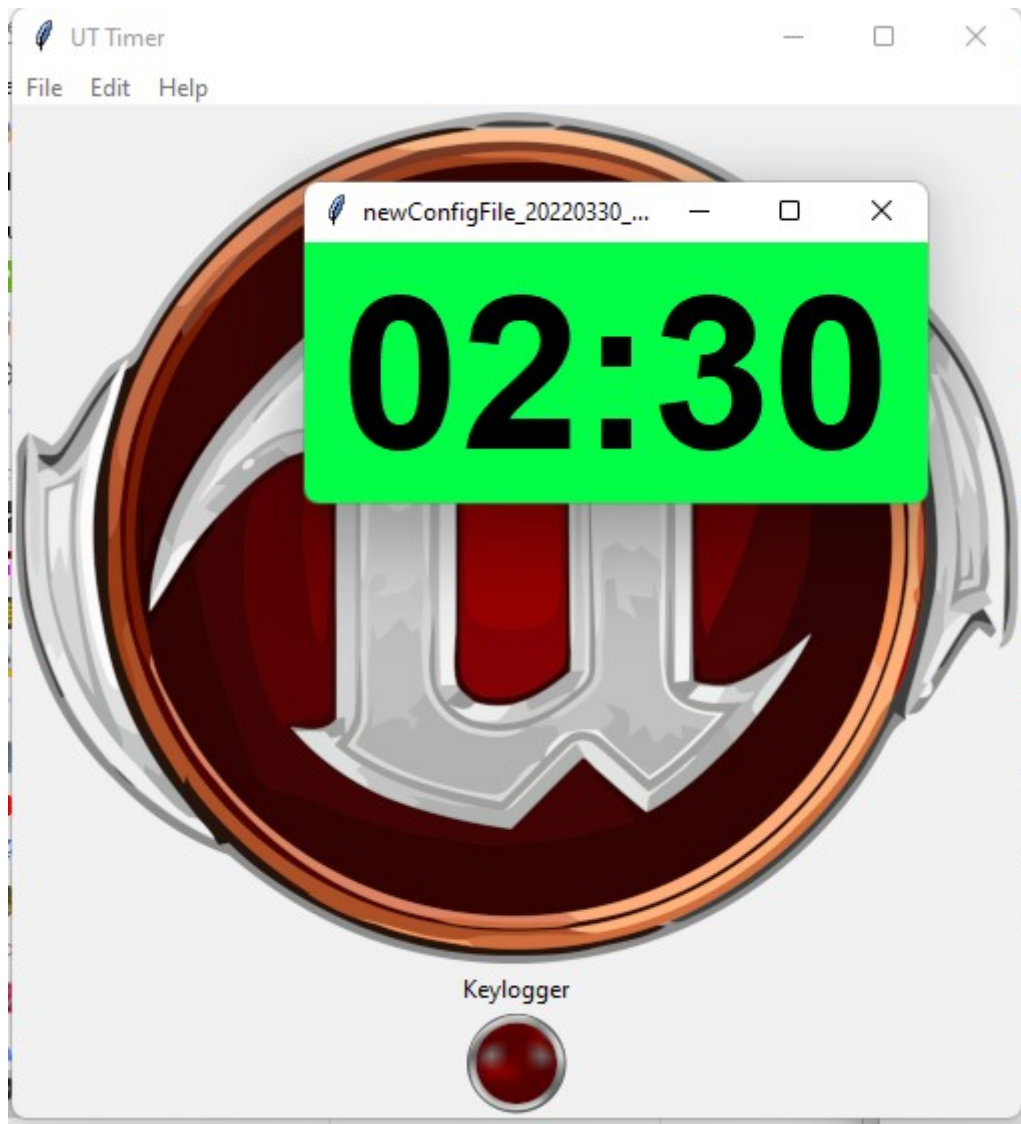
command: bouclier

A preliminary training is recommended to find the best word that could be easily recognized by the tool.

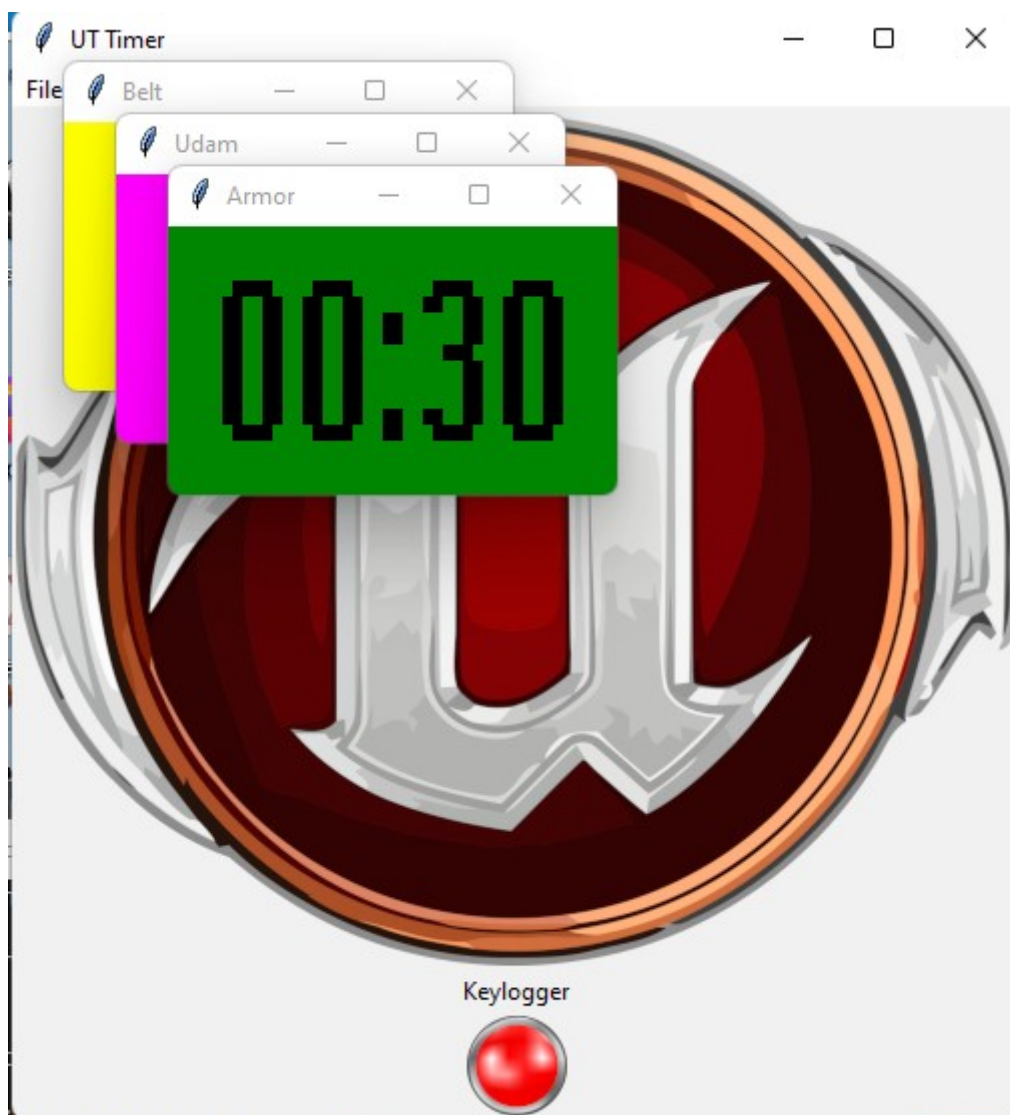
Keylogging

A keylogger executable is provided with UTTimer (cf §KeyLogger for exploitation information).

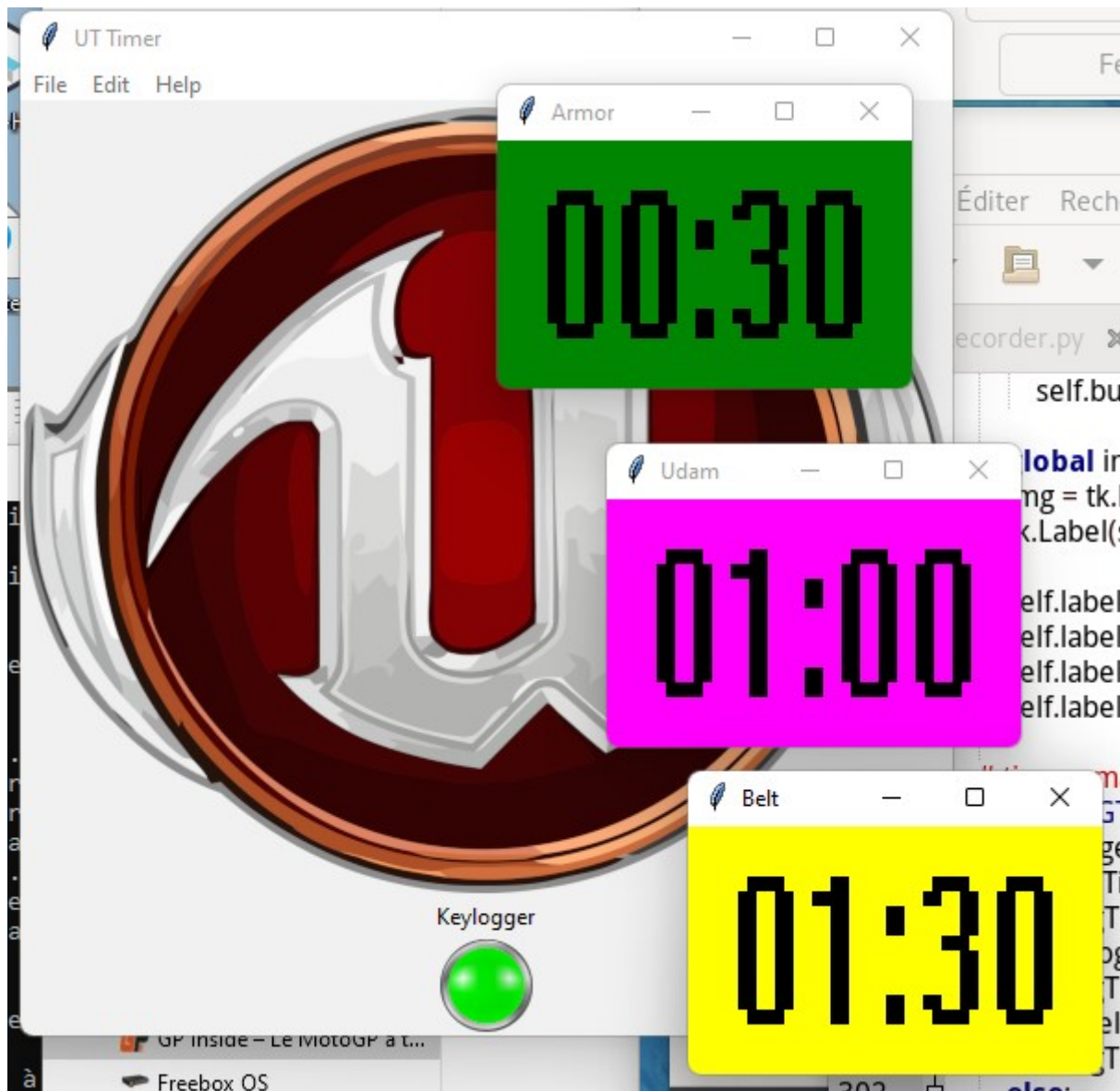
If the configuration has no active external keylogger, the status is given by a faint red led at the bottom of main windows as shown below.



If the configuration has a active external keylogger but keylogger is not connected, the status is given by a bright red led at the bottom of main windows as shown below.



If the configuration has an active external keylogger and keylogger is connected, the connected status is given by a bright green led at the bottom of main windows as shown below.



Note : if External Keylogger parameter is activated in a loaded configuration on windows platform, a keylogger is automatically launched.

Since keylogger needs root privilege on linux platforms, the keylogger is provided but not launched (cf §Linux)