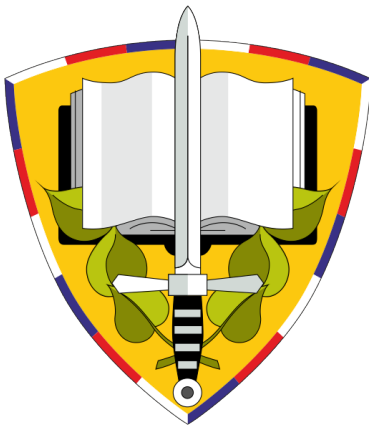# University of Defence

Faculty of Military Technology
Department of Communication and Information Systems

University of Defence

HomeLESS Hit Analyzer 1.3a

Creators:
LTC. Ladislav Hagara, Ph.D.
2LT. Miroslav Lábr

Content

1 HomeLESS

Home LASER Shooting Simulator (HomeLESS) is a multi-platform open source laser shooting simulator. Unlike expensive COTS (Commercial Off-The-Shelf) laser shooting simulators you can make this project by yourself. It is complete open-source solution. It embraces both open source hardware and open source software. No special device needed, just ordinary electro equipment and computer with installed software. HomeLESS is free software. Anybody can download the source code and improve it oneself. HomeLESS is used by several students of University of Defence for indoor shooting practice in their free time. HomeLESS is very useful for them.
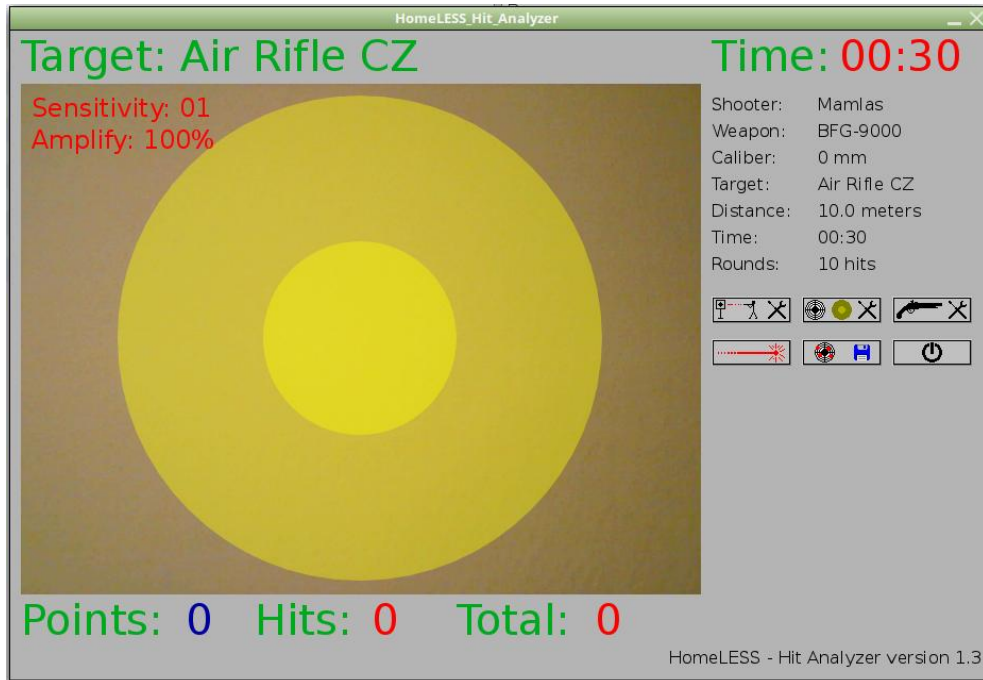
HomeLESS homepage is hosted on http://homeless-eng.webnode.com/. The source code of simulator and instructions how to modify some airsoft guns are published there. There are also instructions how to create DIY (Do It Yourself) gun from scratch for HomeLESS using.

Figure 1.1 Logo of HomeLESS Project

2 Hit Analyzer

This is main program of HomeLESS project. Thank to this you need only a webcam, laser pointer or special LASER gun (LaBr-gun) and printed paper target to enjoy safe firing at your home

Figure 2.1 Hit Analyzer version 1.3a

The program works in two modes, configuration and shooting mode. The first mode is for settings the simulator, for example: load and synchronization target, caliber set, shooting styles setting. In shooting mode software controls firing by number of hits or time. The firing can be recorded as shooting log file. This file can be exported as "slg" file in shootlog directory (will be crated automaticly in software directory). This file contains information of shooting for later processing like analysis or archiving.

2.1 User's modification

The HomeLESS Hit Analyzer can be easily modified by user in many ways. The easiest way is modifing and creating a new extension files. The "ini" file, "tgt" files, "lng" files. and "gun" files.

New targets can be easily created, modified and added with target files. They are created with simple rules, so everbody can modify or create it. Of course there are tweaks such as language packs. Other language versions can be created easily with language pack file. User can also modify the "ini" file in the program or manually with text editor. No one need be afraid of editing these files. Because if make a mistake, there is simple way to fix it, just delete the wrong file. If software not found these "basic" files, just creates new one (with default values).

2.2 News in version 1.3a

Here are few examples of news in program Hit Analyzer:

- 3th party GStreamer library was changed to Processing video Library,
- Better Webcam choosing (see the INI file page),
- Better GUI,
- Sounds,
- Code cleaning.
- Migrated to the Processing IDE from version 2 to version 3,

The most important new are hiden in source code. The change of video library is one of the most important new in new version. The previous library has running problems on different operation system. So with new library is easy to run Hit Analyzer.

2.3 New webcam settings

Number of selected webcam or name of your selected webcam. Numbers 0 5 works only at GNU/Linux version of HomeLESS Hit Analyzer. For windows version set number 6. Default value for GNU/Linux version is 0, default value for windows version is 6.

You can write name of your camera device. This name you can found in consola output as show picture below. The name is betwen words "name=" and ", size =xxx". In this case the name of device is "/dev/video0" (the last character is zero). In MS Windows system there be some thing like "USB Video Device".
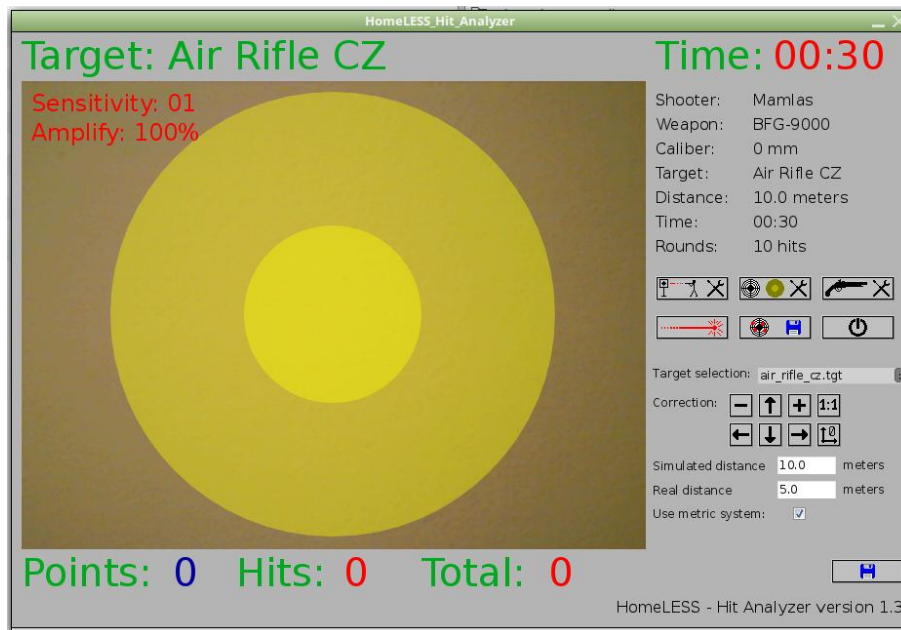

Figure 2.2 Showing a webcam name in GNU/Linux consola output.

Also is possible to change the resolution of webcam, but be sure to that resolution is supported and enabled. The example bellow shown a webcam settings in MS Windows system.
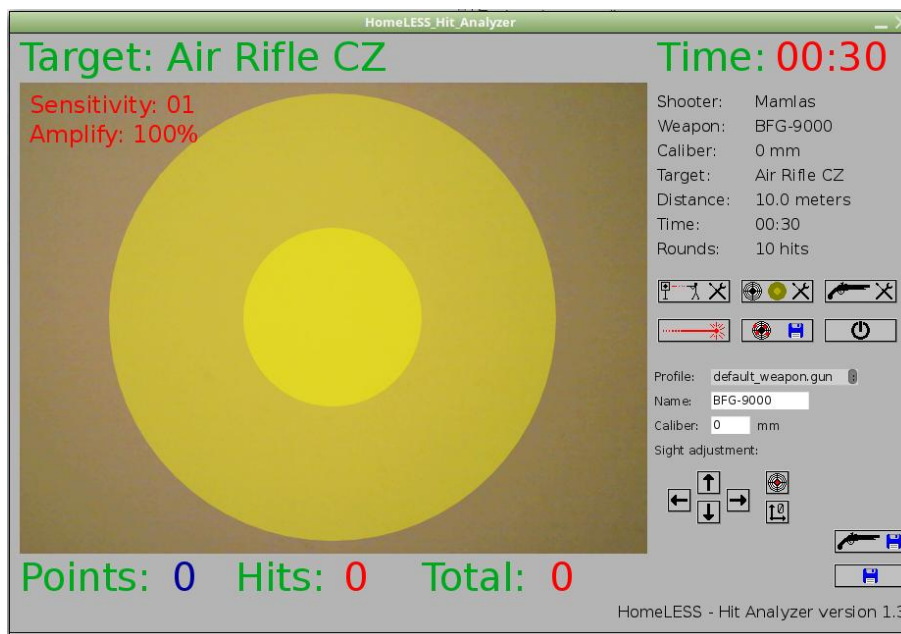
```
Webcam = USB Video Device
Video width = 640
Video height = 480
```

2.4 New GUI

Instead of previous version, that uses multiple windows to manage the program. This new version has all settings in main window. The settings views are shown and

Figure 2.3 Target selection in main window.

Figure 2.4 Weapon selection in main window.

hidden on demand. For example, the target selection (Fig. 2.3) views and weapon selection (Fig. 2.4)shares the same place but they are not displayed at same time.

3 Conclusion

HomeLESS Hit Analyzer is slowly upgrading at the first view. But the most important changes in new version are inside. The second most important change is improvement GUI.

HomeLESS project can serve for a cheap shooting practice. It could run everywhere - for example in your living-room. Since it is open-source, everyone can make it by himself at home for free.

Figure 3.1 Complet solution of HomeLESS Project

Read more: http://homeless-eng.webnode.com