Introduction (1/2, Oct10 2018): Underwaterrugby (UWR) game timer control and logging application for referee on PC/notebook

It allow a referee to take full control of game timers, timepenalty timers (6 players maximum in total), penalty timer, break timer, timeout timer with a PC/notebook.

This programm is NOT controlled by the accoustic (electrical) signal and it dont gives (for now) any command to any accoustic signal: it is separated from any hardware/electrical connection. Reason? Personal experience with poor and/or defect hardware in league games in the south germany area: the keeper of that application timers will be the person making the match reports at the table nearby the game area.

Historical happenings of hardware defects (since persons requested a mandatory link between this application and hardware; such a link could be optional):
1. defect accoustic equipment due to defect connector during the first "landesliga" game in 2017/2017 in germany and no replacement equipment available on site
2. official VDST clock hanging during the women league game in a game in stuttgart in the period 2017/2018
.. making the necessity to act with several digital stopwatches during the games and non precise time keeping (and stress for the referees). This application will manage all timers in the hands of 1 person and keep it easy.

After maturity of this application, a link between accoustic hardware will be developped: it must stay optional in case hardware/SW issues at the accoustic signal exists (experienced several times; see above).

Introduction (2/2)

Attention: the use of PC/notebooks/screens in humid area of swimmingpools reduce massively their lifetime; especially where chlorid is iused. Please use a cheap notebook in a first step. A water tight PC/notebook hardware and/or methods to protect screens will be analyzed the next months and posted here.

Furthermore,
- It creates logfiles for the reporting of the game events and any activity on the scoreboard (no paper reporting with handwriting necessary anymore)
- For external viewing persons, it offer a simplified viewing of the score and timers in a activable separate window
- It stores the settings into a separate file which can be uploaded again when the scoreboard application is used again

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Based on underwaterrugby rules available on www.vdst.de and referee training in baden-wuerttemberg by kneer@gmx.net

No warranty: all sport recommendations/rules of www.vdst.de remain valid.

Application tested on

1. Linux 4.9.0-6-amd64 #1 SMP Debian 4.9.82-1+deb9u3 (2018-03-02) x86_64 GNU/Linux on a Notebook Lenovo T560 screen resolution 1920x1080 GNOME desktop with the latest packages python3 gtk+3.0 python3-pygobject python3-gi (not exhaustiv).

Application NOT tested for now on

1. Windows7 or Windows10 PCs
2. Rasperry PI

Installation advice (1/2)

The application consist of 3 files
- scoreboard_uwr.py
- scoreboard_uwr.glade
- scoreboard_gui_styles.css

The file scoreboard_uwr.glade was created with the application "GLADE" for GUI creation in GTK+
It can be placed in any directory; please identify the path: example, /home/uwr_scoreboard/.

The file scoreboard_uwr.py can be placed in any directory; please identify the /pathtothescript/. It will be started from a terminal/console in this path with the command "python3 /pathtothescript/scoreboard_uwr.py".

Before the application starts, do following,

1. modify in the scoreboard_uwr.py the paths of the scoreboard_uwr.glade and scoreboard_gui_styles.css files
3. install all necessary packages in your PC: python3 gtk+3.0 python3-pygobject (not exhaustiv)

Installation advice (2/2)

Start the application with "python3 /pathtothescript/scoreboard_uwr.py" from a terminal console

For creation of an icon; for gnome, see
https://developer.gnome.org/integration-guide/stable/desktop-files.html.en#ex-sample-desktop-file

Example of a file /home/family/.local/share/applications/uwr-scoreboard.desktop with the picture uwr-pic.png

[Desktop Entry]
Name=uwr-scoreboard
Exec=python3 /home/family/glade/scoreboard_uwr/scoreboard_uwr.py
Icon=/home/family/.local/share/applications/uwr-pic.png
Type=Application
Categories=GTK;GNOME;Utility;

Explanation of startmenue "control" (1/2): main control area of a game

(1) button to start/stop the game; the timer for the period of time countdown which is above that button will be affected.

(2) area where to put the number of a player which will be sent for a timepenalty. "activate" will make the timer countdown running (except the game is stopped; in that case the countdown of the timepenalty will run after the game is started again = the main countdown is running). Click "clear" when the timepenalty entry has to disappear.

(3) by clicking on + or – the points will increase or decrease.

(4) area in order to control the time interruption due to break or penalty or timeout event. The start / stop button will manage the timers (the game is stopped for this area to work).

(5) area for controlling the given timeouts to both teams and the periods of the game.

(6) area to adjust the timer.

(7) button for clearing the countdown to its initial value (when a first period is completed for example)

Startmenue "control"; game stopped with (1) and logging activated in "tools"

Activities Scoreboard_uwr.py ▾   Wed 22:34   de ▾   📶 🔊 🔋 ▾

scoreboard uwr   ×

control   tools   settings   exit

| color | | team | | rest play time | | team | | color |

TeamBLUE

TeamWHITE

scoreboard_uwr.py   ×

logging data entry

countdown stopped penalty
43

B / W	Nb	warning	time penalty	player ejection	player change	timeout	penalty cancel	penalty	goal	comment
☐ ☑		☐	☐	☐	☐	☐	☐	☐	☑	
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org contact

Ms./Mr.

points

+

0

−

clear / reset
rest play time
to standard

0   − +

ve data:
2 clicks rest play time

the game

+

half time >   team right

0   − +

; please select

remark referee

remark scripter

save &
exit   cancel

○ break   ● penalty

vent; please select
○ clear/reset

| 1st player | | time penalty |
1st player
put number here   00:00
○ activate   ● clear

2nd player
put number here   00:00
○ activate   ● clear

3rd player
put number here   00:00
○ activate   ● clear

9   event time countdown (timeout / break / penalty)

00:43

3rd player
put number here   00:00
○ activate   ● clear

logging activated in "tools",
logfile in a scrolled window
"view", separate window appear

scoreboard_uwr.py

click here to hide logview (show again via "tools")

```
points results blue: 0   white: 0
STOP
  at scoreboard countdown: 14:58 min:s
  points status   blue :  0   white:  0
  timepenalty blue                timepenalty white:
        00:00 min:s                    00:00 min:s
        00:00 min:s                    00:00 min:s
        00:00 min:s                    00:00 min:s
*  detailled log
at countdown: 14:58
                                                    |
                                                    | ne
event ->                                            |
col | nb | warning | time      | player   | player  | ti
    |    |         | penalty   | ejection | change  |
    |    |         |           |          |         |
_W  | _  | _____  | _____    | _____   | _____  | __
B__ | _  | _____  | _____    | _____   | _____  | ye
_W  | 5_ | yes____  | _____    | _____   | _____  | __
B__ | 8_ | _____  | yes____   | _____   | _____  | _
remark referee :
remark scripter:
activate penalty mode
  at scoreboard countdown: 14:58 min:s
start penalty
  at scoreboard countdown: 14:58 min:s
stop penalty
  at penalty countdown   : 43 s
*  detailled log
```

Explanation of startmenue "control" (2/2):

(8) in case the logging functionality is activated previously in "tools", when the stop button is clicked, a new log dialog window appear. All reasons why the stop button was clicked, can be introduced there; comments can be made.

(9) in case the logging functionality is activated previously in "tools", when the stop button of a running penalty is clicked, a new log dialog window appear. All reasons why the stop button was clicked, can be introduced there; comments can be made.

Activities   ▣ Scoreboard_uwr.py ▾   Wed 22:40   de ▾ 🛜 🔊 🔋 ▾

scoreboard uwr   ✕

control   **tools**   settings   exit

separate game view for spectator friendly display

1

◉ off   ○ on

in case game view "on", view

◉ copy of control view   ○ inversion of control view

7

reset all time data
(watch start/stop mode)

log functionality – the file "tournament_teamBLUE_teamWHITE.log is created

2

◉ off / close   ○ on / open

8

if log "on", logfile in a window

○ view   ◉ hide

log file name (no ending log necessary)

6

tournament_teamBLUE_teamWHITE.log

entry if any log comment required during any phase

put a first text line here

5

put a second text line here

| store above text (if log on) | data dialog on (if log on) | penalty dialog on (if log on) |

click here to swap the side of
the team status of blue/white
in both control and view windows

3

save scoreboard settings
"date-tournament".settings

settings to be restored from file..

4

(None)

Explanation of menue "tools":

(1) additional windows can be opened in case a second desktop is available for presentation to other persons. That window can be an inversed view of the control window (side white and blue are exchanged); see next page for having a look at that additional window which will come.

(2) an automatic logging of all data is activated there. The name of the log file can be introduced into (6). A separate scrolled log window can be activated/deactivated. It allow to look at all happenings of the previous minutes.

(3) the side white and blue teams of bothe control and view screens will be exchanged by clicking on that big button.

(4) the settings of the tournament can be stored into a file which can be retrieved later in order to keep the same parameter across the same tournament or type of tournament.

(5) if the log functionality in (2) is activated, at any moment of the match (running countdowns or not), any comment can be stored into the log file.

(7) reset button for all timers.

(8) activation of a viewer windows of the same data than in the log file.

scoreboard_uwr.py

view   exit

color	team	rest play time	team	color
	Les BLEUS	**05:09**	Molly	
	tournament		organisation	
	Seepferdle		Pascal	

points	timeout	timeout	points
1	0	0	**0**
	game period		
	1		

time penalty

player nb		special time event		time penalty	
player nb		none		player nb	
	00:00	status event			00:00
player nb		none		player nb	
	00:00	rest time			00:00
player nb		**none**		player nb	
	00:00				00:00

Menue "settings"

scoreboard uwr

control   tools   **settings**   exit

tournament name	contact person tournament	team blue cap	team white cap
Seepferdle	Pascal	Les BLEUS	Molly

period time (standard 15min)
10   − +

penalty duration (standard 45s)
45   − +

break time (standard 5min)
5   − +

timeout time (standard 1min)
1.0   − +

time penalty duration (standard 2min)
2   − +

watch will be stopped during the game
○ no   ⦿ yes   [2]

warning timepenalty before it ends (standard 10s)
10   − +   [1]

optional additional time (in case the watch will run continuously)
2   − +

warning break/timeout before it ends (standard 20s)
20   − +

[3]

set to standard VDST settings

Explanation of menue "settings" (1/2)

All relevant game and tournament data are included there.

(1) Warning entries allow a control of the blinking of the countdown before it comes to end (zero). Example: in the previous page, 10s before the end of timepenalty, the countdown will start blinking additionally to counting the seconds down to zero (the player sitting at the timepenalty area is informed anyway according the VDST rules, 10s are left before it come to zero); 20s before the end of the timeout or break period, the coundown indication of the timeout / break will start blinking. It allows the referee to inform the players early enough to go to their start position in the water and avoid unnecessary longer match.

(2) A selection "watch will be stopped" allow a continuous running of the clock (not within the VDST rules; sometime this is used in friendly games where the time cannot be extended too long due to match interruptions). This mode should be avoided: its interpretation is NOT defined at the CMAS/VDST and is subject to wrong use (example: why a game should not be stopped when a player is injured? Is this an injury or a simulation of injury? The player in timepenalty will be positively advantaged of any game interruption or delay in releasing a free because its timepenalty is not stopped? Etc.). However an own interpretation is defined here in the function. The autor DONT RECOMMEND to use this functionality.
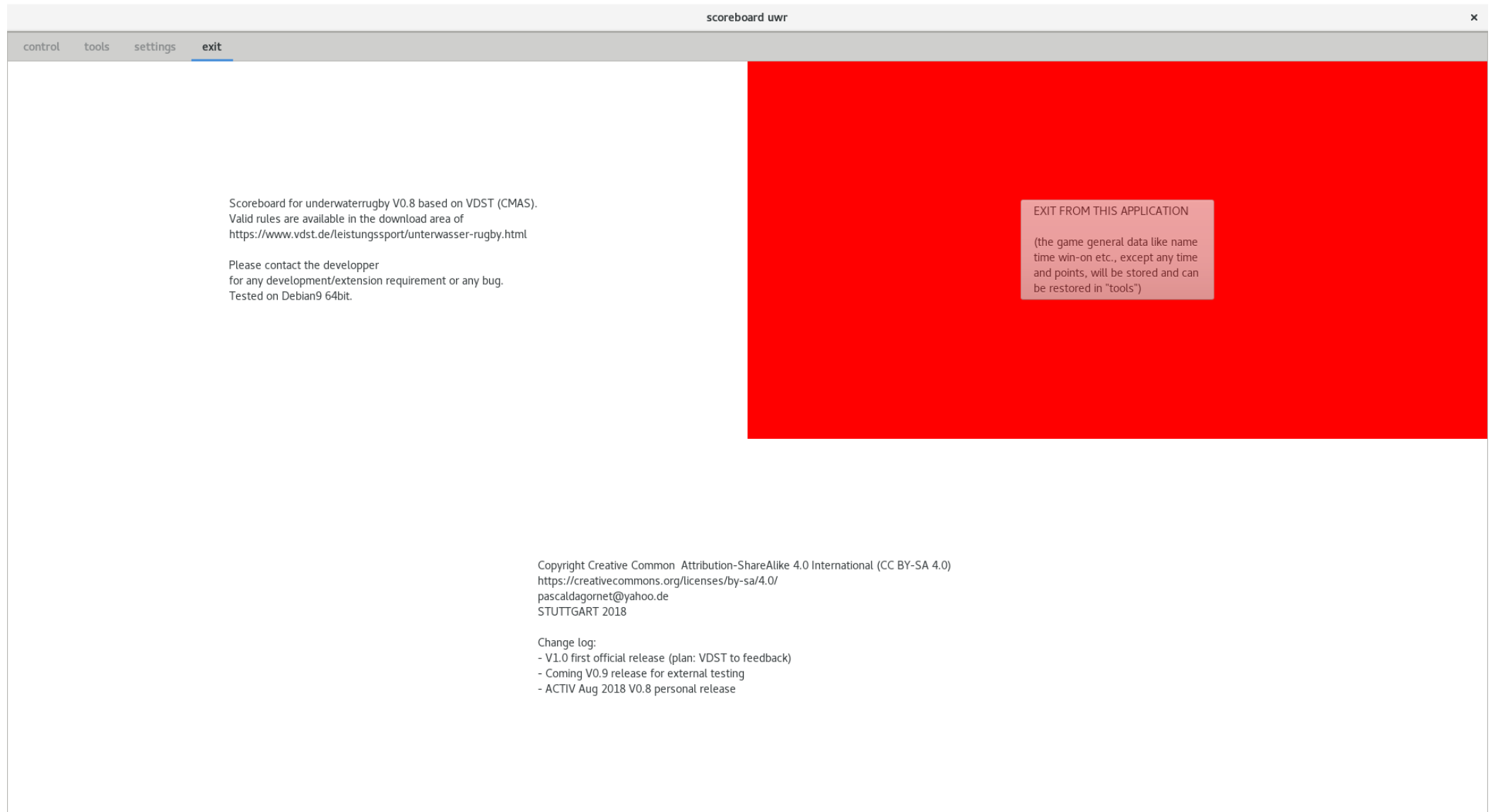
(3) The standard VDST/CMAS setups can be recalled here; the entries of the mask "settings" will be filled/stored automatically by clicking this button.

Explanation of menue "settings" (2/2)

change time settings before the game starts: else it will impact some timers.
If settings like team name are changed when the game runs, the data will be updated in the
control and separate views.

scoreboard uwr

control   tools   settings   **exit**

Scoreboard for underwaterrugby V0.8 based on VDST (CMAS).
Valid rules are available in the download area of
https://www.vdst.de/leistungssport/unterwasser-rugby.html

Please contact the developper
for any development/extension requirement or any bug.
Tested on Debian9 64bit.

EXIT FROM THIS APPLICATION

(the game general data like name
time win-on etc., except any time
and points, will be stored and can
be restored in "tools")

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STUTTGART 2018

Change log:
- V1.0 first official release (plan: VDST to feedback)
- Coming V0.9 release for external testing
- ACTIV Aug 2018 V0.8 personal release

Further comments

When "cancel" of logging is clicked (in menue "tools"), a confirmation mask will pop-up. When "reset" of the timers is clicked, too: critical actions will be asked to be confirmed by a confirmation dialog "yes / cancel".

To be done..
- Further test will the help of users in order to improve the functionality
- Connection to an electtric signal coming from the accoustic hardware equipment; example interface connection via USB to the PC
- Hardware list proposal: the use of laptops and standard screens in pool area will shorten massively the livetime of the hardware. A chapter describing good hardware solutions has to be worked out
- Release of the logging format and its use as reporting during official league matches (this application and its logging has NO RELEASE for official use by the VDST and/or CMAS for now)
- Test in other linux versions, Microsoft Windows and make necessary improvements of the python script and/or README in order to make the application running out of the box in diverse environment
- Move GUI from Gtk3 to Qt5 for use on android tablets
- Review the role of an accoustic signal and link to this programm; review of the role of the main referee who dont have full control of a game due to the underwater-referee acting independantly (subject to discussions with the VDST referee trainers)

Use

Start the application with "python3 /pathtothescript/scoreboard_uwr.py" from a terminal console.

Fill the data in the menue "Settings": times, name of the teams etc.

Choose the additional functionality in the menue "Tools": start a separate window if you have another big screen for people and players to look at, activate the logging (after having decided the name of the log file)

Go to the menue "control" and
- start the game, first period (click on "1" of the control window)
- when the game countdown come to zero, clear/reset the playtime (click on "7" of the control window)
- exchange the side of the teams which appear on the board in the menue "tools" (click on "3")
- start again the game (the second period will run; click on "1" of the control window)