# futsalBoard 7

## Professional Led Display Scoreboard Software

USER MANUAL

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LANGUAGE SUPPORT



futsalBoard supports all languages. You can use special characters from any language such as Arabic, Chinese, Hebrew, and other Asian alphabets in the application.

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# 1. Introduction

## 1.1 What futsalBoard 7 Does

futsalBoard 7 is scoreboard and match-graphics software for futsal and three related disciplines: beach soccer, netball and floorball. You run the match from the main window on the operator PC. The program draws the scoreboard in a separate board window that you place on a second display, a projector or an LED wall, or send over the network as an NDI video stream.

The rules of the active discipline run in the background. The clock counts the period down (or up in floorball) and stops at its end, the interval or half-time clock starts by itself, the team fouls warn at the 5th foul, a sending-off starts its 2-minute timer and ends it when the opponent scores, and a golden goal or a two-goal lead ends the match by itself.




*Figure 1. The Standard board during the 2nd period of a futsal match: score 2-1, team fouls 3 and 2 in orange, the venue line with the time of day and the date line.*

Besides the score and the clock, futsalBoard 7 shows:

- the team names, the team logos and a league logo;
- the period (P1, P2, E1, E2 in futsal; Q1 to Q4 in netball; OT in floorball), the timeouts with their countdown and the status band: "Half-Time", "Interval", "Golden Goal", "Two-Goal Lead" and "Final";
- the accumulated team fouls with the 5th-foul warning and the DFKSAF plate from the 6th foul (futsal);
- yellow and red cards, the sent-off and penalty timers with the player number, and the kicks from the penalty mark;
- two text lines, for example the venue with the time of day and the date;
- info screens: Goal, Card / Suspension, Substitution, Accumulated Fouls, Power Play / One Short, Timeout, Penalty Kick, Shoot-Out, Period Result, Match Result, Match Statistics, Player of the Match, Starting Lineup, Player Intro, Officials, Standings and Results, and the Video Support screen;
- sponsor images, scrolling texts, banners, announcements, video playlists, camera pictures and screen captures.

You can also run the match from a phone or tablet over the network (the remote control, chapter 13) or from other software through the HTTP API on port 1907 (chapter 14).

## 1.2 The Four Disciplines

One installation covers four disciplines. The button with the discipline name at the top of the Game tab (for example "Futsal") opens the "Period & Penalty Settings" dialog, where you choose the discipline and change its rules (chapters 5 and 7). Each discipline starts with the factory rules below and keeps its own rules when you switch to another one.

| Discipline | Factory Periods | Clock | Intervals | Timeouts | Level at the End |
|---|---|---|---|---|---|
| Futsal | 2 × 20 min (P1, P2), extra time 2 × 5 min (E1, E2) | Counts down | Half-time 15 min | 1 per team per period, 60 s, none in extra time | Kicks from the penalty mark, 5 each, then one each |
| Beach Soccer | 3 × 12 min (P1, P2, P3), extra time 1 × 3 min (ET) | Counts down | 3 min after P1 and P2 | None | Penalties, 5 each, then one each |
| Netball | 4 × 15 min (Q1 to Q4), extra time 2 × 7 min (E1, E2) | Counts down | 4 / 12 / 4 min, 4 min before extra time, 1 min between its halves | None | Play on until a team leads by two goals |
| Floorball | 3 × 20 min (P1, P2, P3), overtime 10 min (OT) | Counts up | 10 / 10 min, 2 min before overtime | 1 per team per match, 30 s | Overtime: the first goal wins ("Golden Goal"); then penalty shots, 5 each |

What else differs:

- Futsal counts the accumulated team fouls. The yellow "Y" and red "R" buttons give a yellow card and a sending-off with a 2-minute numerical reduction.
- Beach soccer has the same cards and the 2-minute sending-off, without team fouls and timeouts. A blue card can be switched on in the rules; it is off at first.
- Netball has a caution ("W"), a 2-minute suspension ("S") and a 4-minute ordering off ("O"), and the centre pass indicator that changes sides after each goal.
- Floorball has a 2-minute bench penalty ("2"), a 2+2 major bench penalty, a 10-minute personal penalty ("10") and a match penalty ("MP"), with at most two penalties running per team.

The factory values follow the rule books named in the program (FIFA Futsal Laws of the Game 2025-26, FIFA Beach Soccer Laws of the Game 2024-25, World Netball Rules of Netball 2024, IFF Rules of the Game 2026). Appendix B lists every value.

> **Note:** The discipline cannot be changed while the match clock runs. During a match the program asks before the change resets the score, the penalties, team fouls, timeouts, cards, the shoot-out and the timeline.

## 1.3 Display Modes

The board has four display modes. You switch between them with the St, Sp, Ad and CK buttons at the top left of the Game tab (chapter 9).

- Standard (St): the full-screen scoreboard with the team names and logos, the score, the clock, the period, the team fouls and two text lines.
- Sponsored (Sp): the Standard scoreboard with a sponsor band at the bottom or the top that shows sponsor images or a scrolling text.
- Advertisement (Ad): a score column beside a large area for a video playlist, a camera or a screen capture, with banners.
- Chroma Key (CK): a compact scorebug and lower-third info graphics on a key colour (green at first), to be keyed over a live TV picture in a vision mixer.




*Figure 2. The Standard (left) and Sponsored (right) display modes. In both pictures Guarani's no. 6 is sent off: the 02:00 timer runs beside the fouls.*

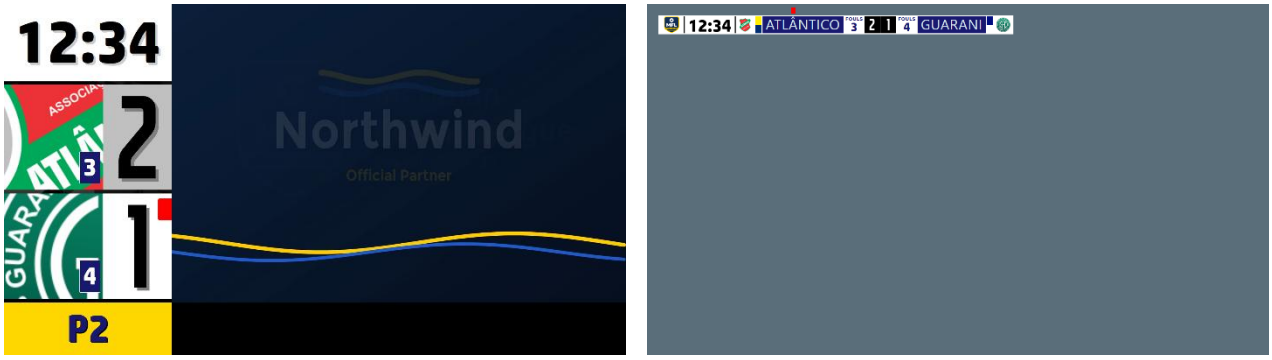



*Figure 3. The Advertisement mode with the demo clip in the media area (left) and the Chroma Key scorebug (right, shown over a grey test background).*

The Standard board comes with three factory designs, the Advertisement board with three and the Chroma Key board with four. You can change every element of a design in the design editor and save your own designs (chapter 11).

## 1.4 What's New in 7.6.10.13

- Intervals start by themselves. When a period clock runs out and the match goes on, the half-time or interval clock starts at once and the board shows "Half-Time" or "Interval" with the countdown. The

small "A" button next to the interval button on the Game tab switches this on (green) or off (grey); the same setting is the row "Start Interval Automatically" in the "Period & Penalty Settings" dialog and the Auto switch of the remote page (chapter 6).
- "Golden Goal" status. During a floorball overtime that the first goal ends, the board, the Game tab and the remote page show "Golden Goal" (chapter 6).
- A typed score asks first. When you type a score in the score box of the Game tab and it would decide the match (golden goal, two-goal lead), the program asks "End Match with This Score?". Yes ends the match, No plays on. A score set with the HTTP API commands set_home_score and set_guest_score never ends the match; a goal button (+1) does (chapter 6).
- Settings > Screen Properties: the row "Periods & Penalty Settings" names the active discipline, for example "Periods & Penalty Settings (Futsal)", and changes the period lengths of that discipline. The running match takes the new lengths at once (chapter 15).
- The remote page shows the program version: on the log-on page and on the More tab under Log Out (chapter 13).
- A new installation starts with the default Standard design: large team fouls and the 2-minute sent-off timers with the player number.
- The third Standard factory design shows the status ("Half-Time", "Interval", "Two-Goal Lead", "Golden Goal", "Final") in place of the venue line while a status is on.
- Uninstalling keeps your data: designs, teams, players, settings and translations stay in C:\futsalBoard7 (chapter 2).
- A smaller setup: about 39 MB instead of about 63 MB. Unused libraries and four demo videos were removed; five demo videos are left.
- A new match also sets the score to 0-0 and clears the timeline of the Stats tab. Teams, players, logos and settings stay (chapter 6.15).
- DEMO mode treats both teams alike: the scores, team fouls and team logos of both teams need a licence. The HTTP API and the remote page get the answer "#License Required (DEMO)" at once (chapter 3).
- Settings > Remote Control shows the state of the remote server next to "Disable": running on port 1907, stopped, no PIN, or an error with the reason (for example, the port is used by another program). The tooltip of the remote control icon shows the same (chapter 13).
- The setup installs the Microsoft Edge WebView2 Runtime when it is missing, and the program says so at its start when the runtime is not there (chapters 2 and 16).
- The info screen titles follow the program language; titles you typed yourself are kept (chapter 15).
- The design gallery: Apply in the CK mode replaces the working scorebug and lower thirds, every master is protected from Rename and Delete, designs saved in the Sp mode stay in the list, and Factory Settings brings back the master in use (chapter 11).
- Sponsors: "Set Default" is kept after closing the list and after a restart (chapter 12).
- HTTP API: the playlist commands accept 1 to 6 and answer "#Invalid Playlist Number (1-6)" otherwise; interval, auto_interval, centre_pass and unlock_scoring answer like every other command (chapter 14).

## 1.5 System Requirements

| Item | Requirement |
|---|---|
| Windows | Windows 10 or Windows 11, 64-bit. The setup stops on a 32-bit system (it offers futsalBoard6 instead); the program is a 64-bit program. |
| Processor | Minimum: Intel Core i5 8th generation or AMD Ryzen 5. Recommended for NDI, cameras and 4K: Intel Core i7 or AMD Ryzen 7. |
| Memory | Minimum 8 GB RAM, recommended 16 GB |

| Item | Requirement |
|---|---|
| Graphics | DirectX 11. A dedicated graphics card is recommended for NDI and LED outputs. |
| Disk | 1 GB free disk space |
| Display | 1920x1080 for the control window |
| .NET Framework | 4.7.2 or later. The setup checks it and offers the download from Microsoft. |
| Microsoft Edge WebView2 Runtime | Required: every board is drawn with it. When it is missing, the setup downloads and installs it (Internet connection needed during the setup). |
| Rights | Administrator rights for the setup. The desktop shortcut starts the program as administrator. |
| Board output | A second monitor, a projector, an LED wall controller or an NDI receiver for the board window |
| Network | For the remote control and the HTTP API (port 1907) and for NDI. Gigabit network for NDI. |
| Internet | Only for the "Youtube Tutorials" link and, when the WebView2 Runtime is missing, for its download during the setup |

> **Note:** If the WebView2 Runtime is removed after the installation, the program says "Microsoft Edge WebView2 Runtime Is Not Installed." when it starts and offers the download page (chapter 16).

## 1.6 How to Read This Guide

Chapters 2 to 4 cover the installation, the licence and the main window. Chapters 5 to 7 are the core of the work during a match: the disciplines, the control panel and the rules. Chapter 8 covers teams, players, photos and logos; chapters 9 to 12 the board output, the info screens, the designs and the media. Chapters 13 and 14 describe the remote control and the HTTP API, chapter 15 every setting and chapter 16 troubleshooting. The appendices list the keyboard shortcuts (A), the rules of each discipline (B), the HTTP API commands (C) and the files and folders (D).

- A pair block shows the board output on the left and the control panel that produced it on the right.
- A picture with numbered badges is followed by a table with the same numbers.
- Names of buttons and labels are written in "double quotes" as the English interface shows them. In another interface language the captions differ; the places are the same.
- Steps are numbered. Do them in this order.

> **Note:** The pictures show the program with its sample teams Atlântico and Guarani, the fictional Meridian Futsal League and fictional sponsors. Scores and clocks were set for the pictures. The program ran with a licence; without a licence the boards show the word DEMO (chapter 3).

Website and support:

- Website: www.footballscoreboardsoftware.com (shown in the title bar and on the License page of the settings)
- Support: arslan.ziya@gmail.com (shown on the License page of the settings, with the program version)

# 2. Installation and First Start

## 2.1 Installing

1. Close futsalBoard 7 if it runs.
2. Run the setup (futsalBoard7Setup.exe) and follow the wizard.
3. The program is installed in C:\futsalBoard7. The folder cannot be changed, and the setup creates no Start menu group.

Before the wizard starts, the setup checks the PC:

| Check | What Happens When It Fails |
|---|---|
| Administrator rights | "Administrator privileges are required to install this application." Yes starts the setup again as administrator. |
| 64-bit Windows | "For 32-bit systems, you can use futsalBoard6." Yes opens the download of futsalBoard6. The setup closes. |
| .NET Framework 4.7.2 or later | ".NET Framework 4.7.2 or later is required but not installed." OK opens the download page at Microsoft. The setup closes. |

Install the missing part and run the setup again.

The Microsoft Edge WebView2 Runtime, which draws the boards, is not a check that stops the setup. When it is missing, the setup downloads Microsoft's installer after "Install" is clicked and installs the runtime without questions, before it copies the program. This needs an Internet connection. If the download or the installation fails, the setup says "Microsoft Edge WebView2 Runtime could not be installed automatically (no internet connection?)." OK opens the download page at Microsoft; the installation of futsalBoard 7 goes on in any case. Install the runtime afterwards: until then the program shows a message at its start (chapter 16.1).

During the installation the setup also:

- installs the fonts of the boards in Windows ("Installing fonts..."): the eight font files of C:\futsalBoard7\common\font are copied to the Windows font folder and registered;
- adds four Windows firewall rules for port 1907, the port of the remote control and the HTTP API ("Configuring firewall rule..."; no window has to be closed): "futsalBoard 1907 TCP IN", "futsalBoard 1907 UDP IN", "futsalBoard 1907 TCP OUT" and "futsalBoard 1907 UDP OUT";
- creates two desktop shortcuts: "futsalBoard7" starts the program as administrator, "futsalBoard7 Help" opens this guide (C:\futsalBoard7\futsalBoard7Help.pdf).

Both steps can be repeated by hand, for example after a Windows reset or when a firewall rule was deleted:

- Firewall: right-click C:\futsalBoard7\open_firewall_1907.bat and choose Run as administrator. The window lists each rule as "Added" or "Exists" and waits for a key.
- Fonts: in a PowerShell window opened as administrator run powershell -ExecutionPolicy Bypass -File C:\futsalBoard7\install_fonts.ps1. Fonts that are already in the Windows font folder are not copied again.

> **Note:** The program also loads its fonts from C:\futsalBoard7\common\font for its own session at every start and unloads them when it closes, so the boards show the right fonts even when the Windows font installation failed.

## 2.2 First Start

Start futsalBoard 7 with the desktop shortcut "futsalBoard7". A small status card appears in the middle of the screen while the program loads:

- "futsalBoard Started..."
- "Checking license..." while the licence is read. Reading the Computer ID can take up to 30 seconds on a slow PC; the search for a USB licence up to 8 seconds.
- "Controls Initialized...", "Renderer Initialized..." and "Entering Main Loop..." while the control panel and the boards are prepared.

Then the main window opens at the bottom right of the screen with the Game tab, and the board window opens at the top left of the main screen.

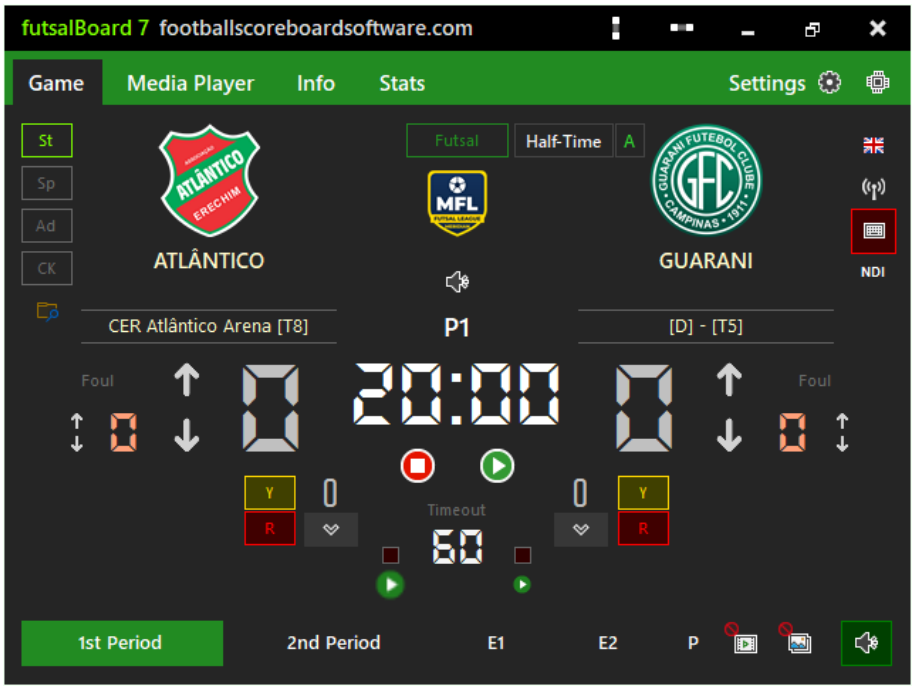



*Figure 4. The main window with the Game tab after the first start: futsal, 1st period, 20:00, 0-0.*

A new installation starts with these settings (the program writes them to C:\futsalBoard7\start.xml at the first start):

| Setting | First Start Value |
|---|---|
| Board window | Left 0, Top 0, 960 × 540 pixels |
| Display mode | Standard (St), the first Standard factory design |
| Discipline | Futsal, 2 × 20 minutes, extra time 2 × 5 minutes |
| Start Interval Automatically | On |
| Language | The language of the Windows regional format; English if the program does not have that language |
| Sample match | ATLÂNTICO and GUARANI with their logos, the league logo, the text lines "CER Atlântico Arena [T8]" and "[D] - [T5]" (venue with the time of day, date and time), score 0-0 |
| Background video | media\videos\BlackRoyal.mp4 |
| Sponsor band (Sp) | At the bottom, 64 pixels high |

| Setting | First Start Value |
|---|---|
| Chroma key colour | Green |
| Remote control | Off, PIN 123456 |
| Keyboard shortcuts | Off; the keys Esc (Main Timer Start - Stop), F9 (Home Score Up) and F12 (Guest Score Up) are already assigned |
| NDI sender name | Fs7_NDI, 59.94 frames per second |
| Licence | DEMO until a licence is entered (chapter 3) |

> **Note:** Run only one copy of futsalBoard 7. Two copies would write the same settings files, and only one of them can use port 1907 for the remote control.

## 2.3 Upgrading to a New Version

Close futsalBoard 7 and install the new version over the old one. The setup replaces the program and the factory content, and keeps your data:

| Kept | Replaced |
|---|---|
| start.xml (settings, rules of each discipline, keys) and futsal7License.xml: the setup does not ship them | futsalBoard7.exe, its libraries and futsalBoard7.exe.config |
| config.xml, configSp.xml, configAd.xml, configCK.xml (Banner, Announce, Sponsored, Advertisement and Chroma Key settings) | Fonts, images, sounds, remote pages and board scripts in common |
| Teams, players, events, standings, results, fixtures, officials, sponsors and playlists (common\data) | The factory designs in common\vizrt\storage (St, Sp, Ad, CK, the master designs and the factory design list) |
| Your working designs (common\vizrt\current), your saved designs and your design list (dataBoards.xml) | langFactory.xml, the remote command list API_Commands.txt, this guide, open_firewall_1907.bat and install_fonts.ps1 |
| Your translations (lang.xml), your info screen titles (title.xml) and the data in media\downloads | Factory media files with the same name in media (files you added are not touched) |

At the next start the program brings your files up to date:

- New texts of the new version are added to lang.xml in all languages. Your own texts are never changed and nothing is removed. Before the first change the old file is kept once as lang.xml.bak_premigration; every addition is listed in lang.migration.log in C:\futsalBoard7.
- A working design that you never changed is replaced by the new factory design. A design you changed is kept as it is; the log file notes it as a customised design.

> **Note:** Settings > Language > "Set Factory Reset" brings the new wording of existing texts, but it overwrites all languages of lang.xml at once (chapter 15).

## 2.4 Uninstalling

Open Windows Settings > Apps > Installed apps (or Apps & Features), find futsalBoard7 7.6.10.13 and choose Uninstall. The uninstaller asks first and says what it keeps: "Only the program files are removed. Your data is kept in C:\futsalBoard7: current and saved designs, teams, players and other data (common\data), settings (config*.xml, start.xml) and translations (lang.xml). To remove everything, delete that folder after the uninstall."

The uninstaller removes the program, its libraries, the factory files, the factory media and the desktop shortcuts. These stay:

- in C:\futsalBoard7: start.xml, config*.xml, the licence file futsal7License.xml, common\data, lang.xml, title.xml, the working and saved designs and the design list, media\downloads, media files you added, the logs folder and the backup copies of the settings files;
- in Windows: the fonts and the four firewall rules for port 1907.

At the end the uninstaller reports: "Your designs, data, settings and translations were kept. Delete C:\futsalBoard7 to remove them too." A new installation into C:\futsalBoard7 finds all of them again.

> **Note:** To remove everything, delete C:\futsalBoard7 after the uninstall. Copy the folder to a safe place first if you want to keep your licence file, designs, teams and players.

# 3. Licensing

## 3.1 PC (CPU) and USB Licences

futsalBoard 7 runs with a licence key. There are two kinds:

| | PC Licence (CPU) | USB Licence |
|---|---|---|
| Bound to | This PC, through its Computer ID (shown as "CPU ID") | One USB stick, through its USB ID |
| Key file | C:\futsalBoard7\futsal7License.xml | futsal7License.xml in the root folder of the stick |
| Use | Only on this PC | On any PC where the stick is plugged in |
| Checked | At every program start | At every program start, before the PC licence |

The licence is read when the program starts. When a valid USB licence is found, the PC licence is not read. After you save a key on a USB stick, restart the program with the stick plugged in.

The key also sets the largest board size and an expiry date:

- Max Resolution: the largest width and the largest height of the board window in pixels. Settings > Screen Properties does not accept a larger W: Width or H: Height, and a larger value in start.xml is cut back at the start.
- Expiry date: after this date the program runs in DEMO mode. Some keys have no expiry date.
- Options: the GPU badge on the License page shows that the key allows the GPU screen capture of the Advertisement and Chroma Key modes (chapter 12); the eMP badge shows the extra media player option.

The licence terms of each kind open from the License page (the question mark or green tick next to "Computer ID", and the question mark in the USB License Creator). Both terms pages say that you can ask for a new key when the PC breaks down, its hardware changes or the stick is lost, and that this is not always guaranteed.

## 3.2 DEMO Mode

Without a valid licence the program runs in DEMO mode. Everything can be tried, with these limits:

- The match clock on the boards (St, Sp, Ad and CK) reads DEMO for one second in every ten.
- When 10 minutes or less are left in the period, the clock of the Game tab and of the boards shows DEMO instead of the time. The clock keeps running in the background.
- The score of either team cannot be changed: the goal arrows, a typed score and the score keys show "License Required !" with "This action is not allowed in the DEMO version."
- The team-foul arrows and a typed team-foul value of both teams, and the team logos of both teams (choosing or removing them), show the same message. The board logo can be changed.
- The HTTP API and the remote page cannot change the scores or the team fouls either: the program answers "#License Required (DEMO)" and changes nothing; no message appears on the PC (chapter 14).
- The info-screen window, the media-player window and the media area of the Advertisement board show a DEMO label in the middle.
- The board size is not limited.

The licence icon at the right of the menu bar shows the state: a padlock without a licence, a USB stick with a USB licence, a CPU chip with a PC licence. Rest the mouse on it for the tooltip: "No License", "USB License Found" or "CPU License Found".

## 3.3 Entering a PC Licence

Open Settings > License.

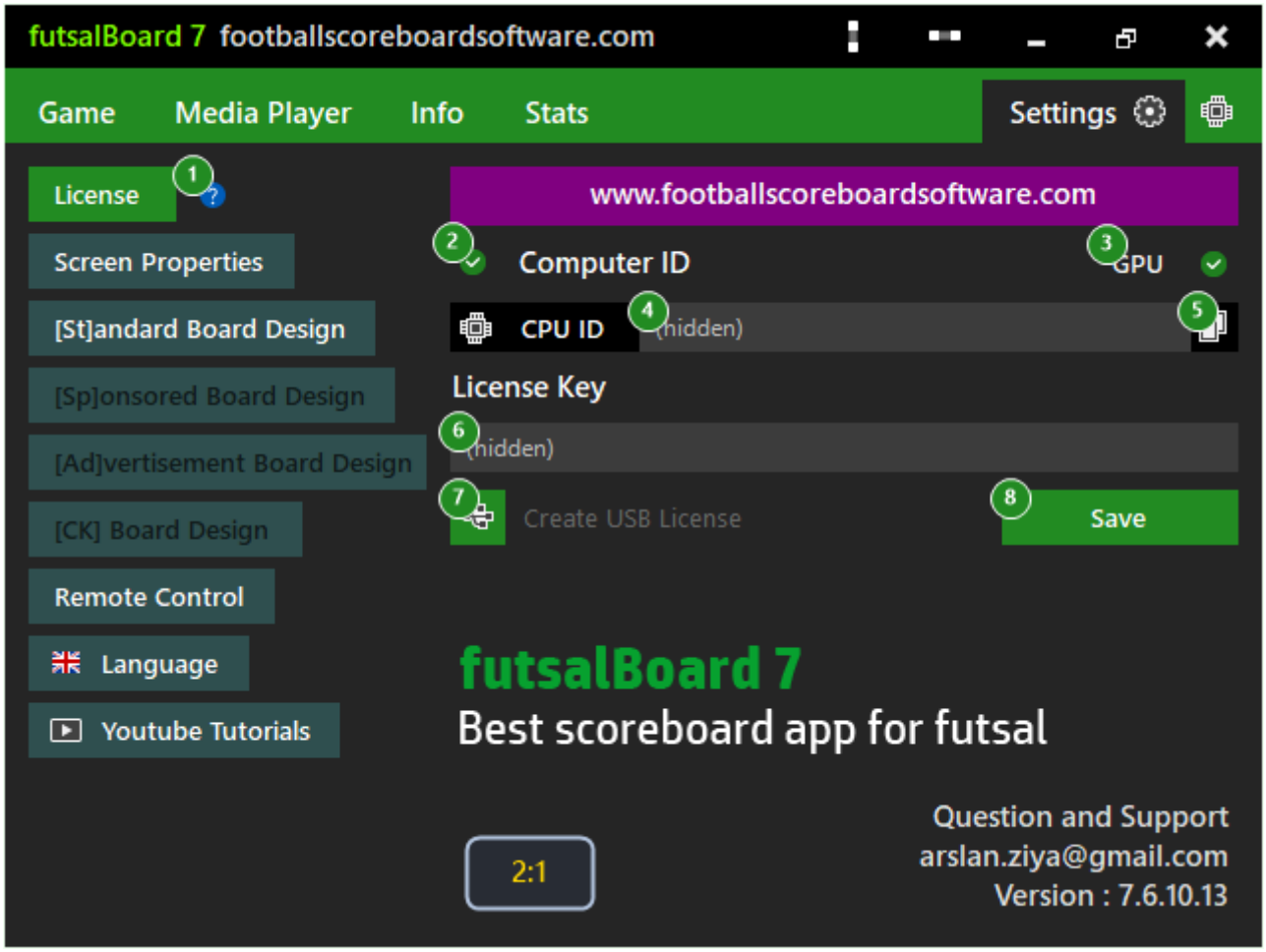
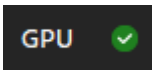



*Figure 5. The License page of a licensed PC. The Computer ID and the key are hidden in this picture.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **?** | Opens the License Info box: validation, Max Resolution, expiry date, model, options and the result of the date check. |
| 2 |  | **? / green tick** | Opens the CPU licence terms. Shows a green tick when the key in the License Key box fits this PC. |
| 3 |  | **GPU** | Shown when the licence key allows the GPU screen capture of the Advertisement and Chroma Key modes. |
| 4 |  | **CPU ID** | The Computer ID of this PC, the base of a PC licence. Read only. |
| 5 |  | **Copy** | Copies the Computer ID to the clipboard. |
| 6 |  | **License Key** | The licence key. Lime = the key fits this PC, light grey = it does not, pink = it fits but the date check failed. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 7 |  | **Create USB License** | Opens the USB License Creator. |
| 8 |   | **Save** | Checks the key and writes it to futsal7License.xml; then shows "License Key Valid. Please Restart Application.". |

1. Click the copy button at the right of the CPU ID box. The Computer ID is copied to the clipboard.
2. Send the Computer ID to the vendor (arslan.ziya@gmail.com) and order the licence.
3. Paste the key you receive into the box under "License Key". The box turns lime when the key fits this PC and light grey when it does not. It turns pink when the key fits but the date check fails (section 3.5).
4. Click "Save". The key is written to C:\futsalBoard7\futsal7License.xml and the program shows "License Key Valid. Please Restart Application."
5. Restart futsalBoard 7.

If the key does not fit, the program shows "License Key Not Valid!" and puts the saved key back into the box. If it fits but the date check fails, the box turns pink and nothing is saved.

- The question mark next to "Computer ID" opens the CPU licence terms. It turns into a green tick when the key in the box fits this PC.
- The question mark next to "License" opens the License Info box (section 3.5).
- The purple web address at the top opens the product website in the browser.
- The bottom of the page shows "Question and Support", the support address and the program version (Version : 7.6.10.13).

> **Note:** Do not type into the License Key box of a licensed PC. The box is checked on every keystroke: a text that does not fit makes the running session unlicensed at once, and the boards show DEMO until the right key is back in the box or the program restarts.

## 3.4 Creating a USB Licence

1. Plug a USB stick into the PC. It needs a drive letter.
2. Open Settings > License and click the USB button next to "Create USB License". The "USB License Creator" page opens.
3. Choose the stick in the list under "Select USB Device". Each stick is listed with its drive letter and name; a stick that already holds a key shows "- License Key Found". The USB ID of the stick appears below, and a key that is on the stick appears under "License Key".
4. Click the copy button at the right of the USB ID and send the ID to the vendor.
5. Paste the key you receive under "License Key" (lime = the key fits the stick) and click "Save". The key file futsal7License.xml is written to the root of the stick and the program shows "License Key Valid. Please Restart Application."
6. Restart futsalBoard 7 with the stick plugged in.

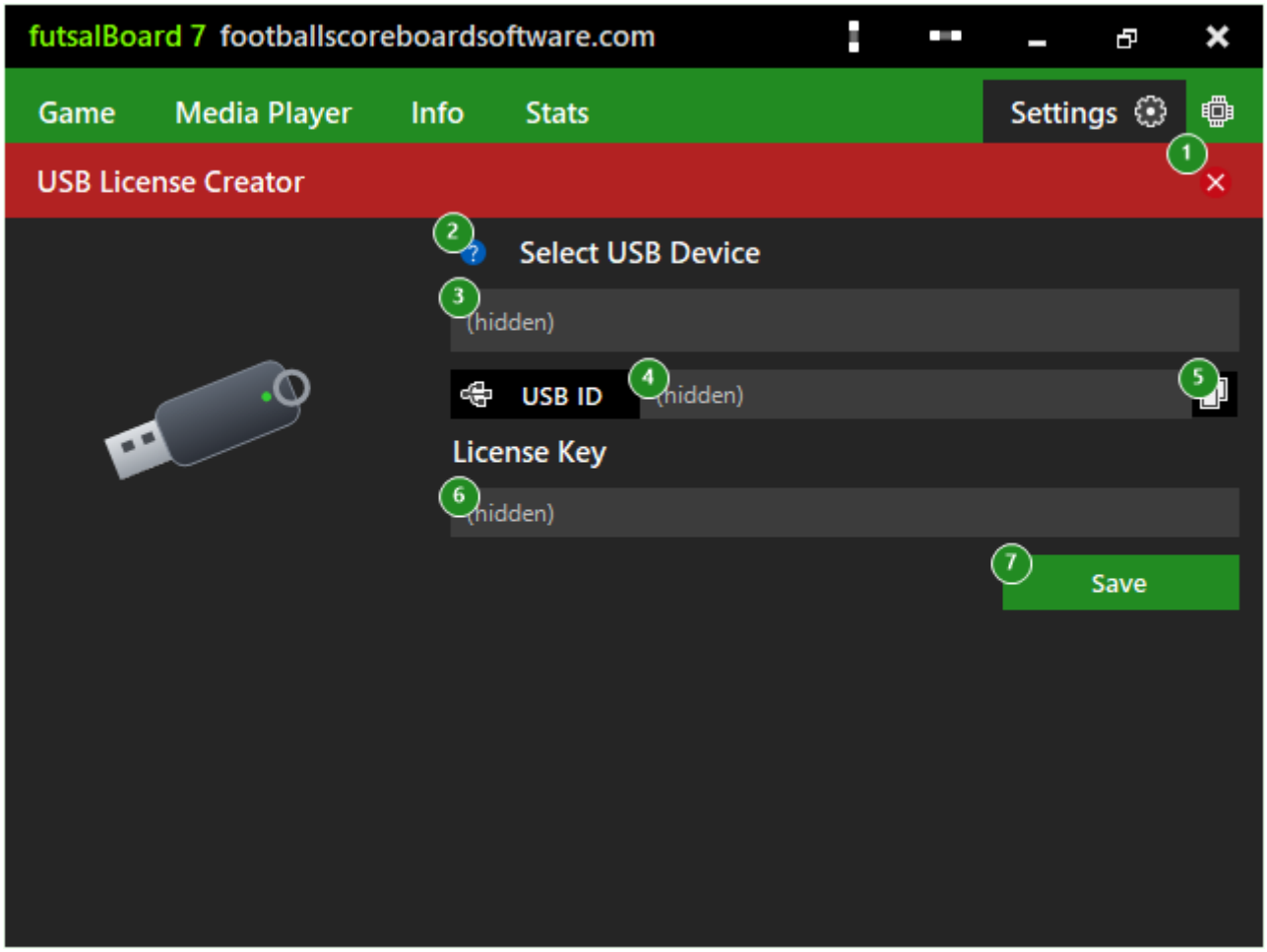



*Figure 6. The USB License Creator. The drive, the USB ID and the key are hidden in this picture.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the USB License Creator (also Esc). |
| 2 |  | **?** | Opens the USB licence terms. |
| 3 |  | **Select USB Device** | The USB sticks with a drive letter; " - License Key Found" marks a stick that already holds a key. |
| 4 |  | **USB ID** | The USB ID of the chosen stick, the base of a USB licence. Read only. |
| 5 |  | **Copy** | Copies the USB ID to the clipboard. |
| 6 |  | **License Key** | The key on the stick, or the new key to save. Lime = the key fits the stick. |
| 7 |  | **Save** | Checks the key and writes futsal7License.xml to the root of the stick. |

- The list is filled when the page opens. Plug in the stick first; if it is missing, close the page and open it again.
- Esc or the close button (X) at the right of the red title band leaves the page.

- "Please select a valid USB device." appears when Save is clicked without a stick chosen, "Selected USB drive is not available. Please check the connection." when the stick was pulled out.

When a valid USB licence is found at start, the License page shows "USB License Detected" with the USB ID, the key and the GPU / eMP badges of the key.

## 3.5 Licence Status

The question mark next to "License" on the License page opens the "License Info" box:

| Line | Meaning |
|---|---|
| Validation | Yes with a valid PC or USB licence, No in DEMO mode |
| Max Resolution | The largest board width and height allowed by the key |
| Expire Date | The end of the licence (year.month.day) |
| Model | The licence model number |
| GPU Enabled, Extra Player, Record & Replay | Options of the licence model |
| Last line | The result of the date check: "All license checks passed.", "[2099]. Skipping check." for a key without an expiry date, or the reason of a failure (the licence expired, or the system clock was set back) |

The date check runs at every start and whenever the Settings tab opens. Each passed check stores the time of the check (encrypted) in start.xml. If the PC clock is later set to an earlier time, or the licence has expired, the program runs in DEMO mode without a message.

When the licence is not accepted:

| What You See | Reason and Fix |
|---|---|
| "License Key Not Valid!" | The key belongs to another PC or stick. A PC key stops working after a hardware change: send the new Computer ID to support. |
| The CPU ID box shows ?WMI-UNAVAILABLE | Windows could not report the hardware data (WMI) within 30 seconds. A notice "License check unavailable - Windows WMI error. Try: winmgmt /verifyrepository" appears at the bottom right of the screen after the start. Run that command in a command prompt opened as administrator and restart (chapter 16). |
| It worked before and now shows DEMO | The licence expired, or the PC clock is earlier than the last check. Open the License Info box: the last line names the reason. Correct the Windows date and time, then restart. |
| The License Key box turns pink | The key fits, but the date check failed (expired, or clock set back). |
| USB licence not found | The stick must be plugged in before the program starts. The search for the stick takes up to 8 seconds. |

# 4. Main Window and Menus

## 4.1 Title Bar and Window Sizes

The main window is the operator's window. It opens at 640 × 480 pixels at the bottom right of the screen and cannot be made smaller. It has three parts: the title bar, the menu bar with the tabs, and the page of the selected tab.

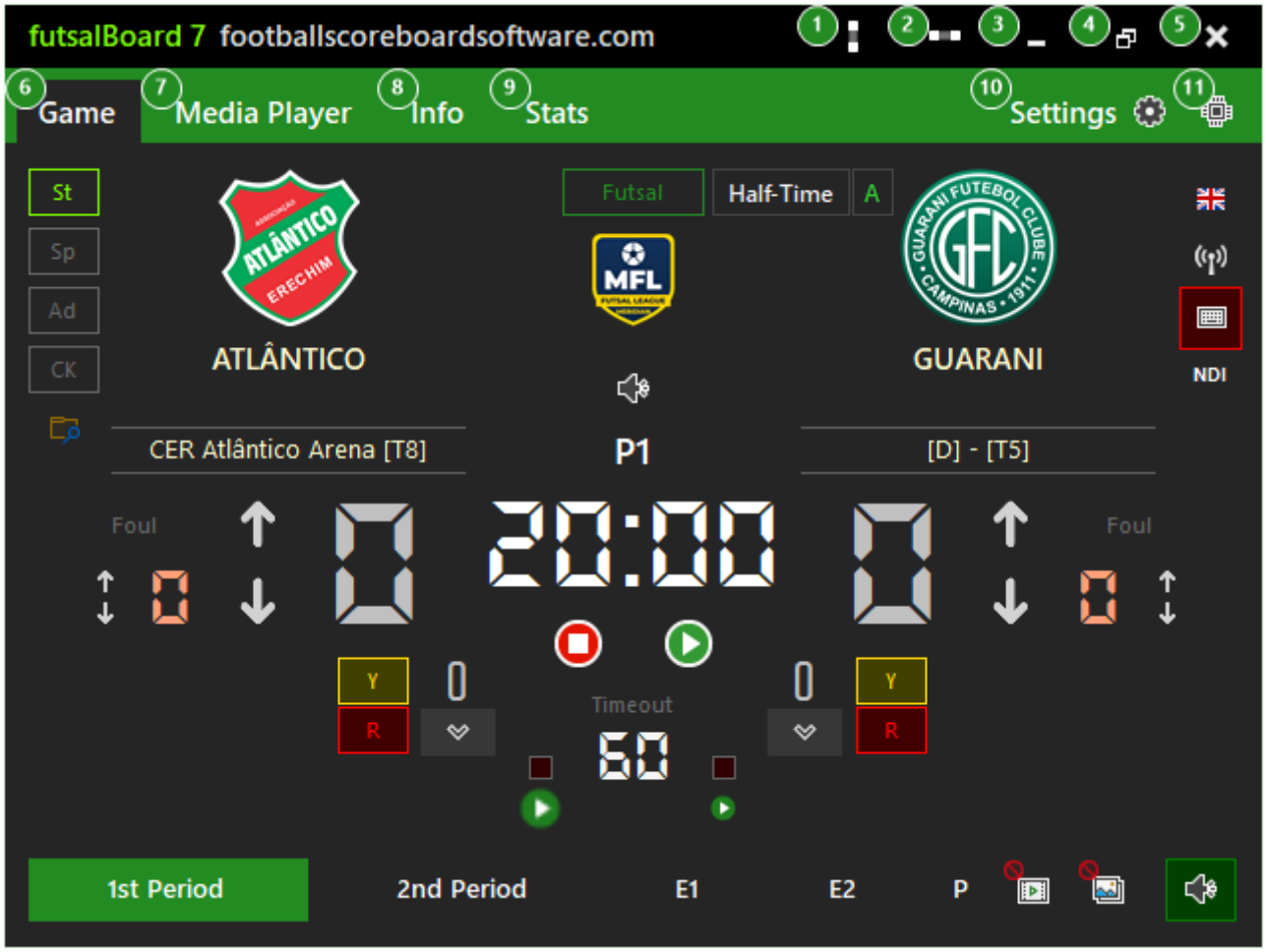
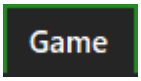
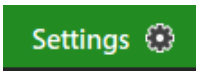



*Figure 7. The main window: title bar, menu bar and the Game tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Column (vertical bar icon)** | Makes the main window a full-height column, 640 pixels wide, at the right edge of the screen. A second click gives 640 × 480 at the bottom right. |
| 2 | | **Strip (horizontal bars icon)** | Makes the main window a full-width strip, 480 pixels high, along the bottom of the screen. A second click gives 640 × 480 at the bottom right. |
| 3 | | **Minimise** | Minimises the main window. The board windows stay on. |
| 4 | | **Maximise** | Fills the screen with the main window; a second click restores it. |
| 5 | | **Close (X)** | Asks "The Application Will Be Closed! Are You Sure?" and closes the program after Yes. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 6 |  | **Game** | Opens the control panel and brings the match board back on air (stops a media clip, takes an info screen off). |
| 7 |  | **Media Player** | Opens the six playlists and the URL list of the media player. |
| 8 |  | **Info** | Opens the info screens of the discipline, Banner, Announce, Sponsors and Classic Screens. |
| 9 |  | **Stats** | Opens the match timeline, statistics, standings, results and fixtures. |
| 10 |  | **Settings** | Opens the settings: licence, screen properties, board designs, remote control and language. Shows the time left of a playing clip. |
| 11 |  | **CPU License Found** | Licence state: padlock = no licence, USB stick = USB licence, CPU chip = PC licence. The tooltip names the state. |

The title bar shows "futsalBoard 7" and the product website. Drag the title bar to move the window. Its buttons, from left to right:

| Button | What It Does |
|---|---|
| Column (vertical bar) | Makes the window a full-height column of 640 pixels at the right edge of the screen. Click again for 640 × 480 at the bottom right. |
| Strip (horizontal bars) | Makes the window a full-width strip of 480 pixels along the bottom of the screen. Click again for 640 × 480 at the bottom right. |
| Minimise | Minimises the main window. The boards stay on. |
| Maximise | Fills the screen. Click again to go back. |
| Close (X) | Closes the program after a question (section 4.4). |

- Drag any edge or corner to resize the window. The window snaps to the screen edges and to other windows.
- The column and the strip are useful when the main window shares the screen with other programs, for example a vision mixer.
- The page of the Game tab keeps its size in a larger window and stays in the middle.

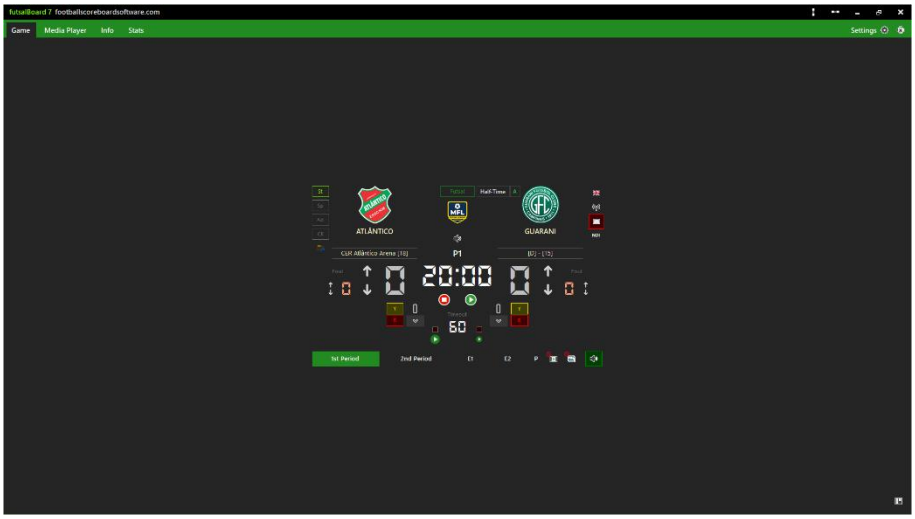



*Figure 8. The maximised main window. The Game tab keeps its size and is centred.*

## 4.2 Menu Tabs

| Tab | Opens | Chapter |
|---|---|---|
| "Game" | The control panel: score, clock, periods, fouls, timeouts, cards, display modes, designs | 6 |
| "Media Player" | Six playlists of videos and pictures and a list of web addresses ("URL") | 12 |
| "Info" | The info screens of the discipline, "Banner", "Announce", "Sponsors", "Hide Info Screen" and "Classic Screens" | 10, 12 |
| "Stats" | The match timeline ("Timeline"), "Stats", "Standings", "Results" and "Fixtures" | 10 |
| "Sp", "Ad" or "CK" | The page of the Sponsored, Advertisement or Chroma Key mode | 9, 12 |
| "Settings" | Licence, screen properties, board designs, remote control, language and the "Youtube Tutorials" link | 15 |
| Licence icon (right) | Shows the licence state; rest the mouse on it for the text | 3 |

- The fifth tab appears between "Stats" and "Settings" only in the Sponsored, Advertisement and Chroma Key display modes; its caption is "Sp", "Ad" or "CK". In the Standard mode it is hidden.
- A click on "Game" also brings the match board back on air: it stops a clip of the media player and takes an info screen off the board (in the Chroma Key mode a lower third stays on).
- While a clip plays in the media-player window, the "Settings" tab shows the time left in the clip instead of its caption, for example ▶ 0:42.

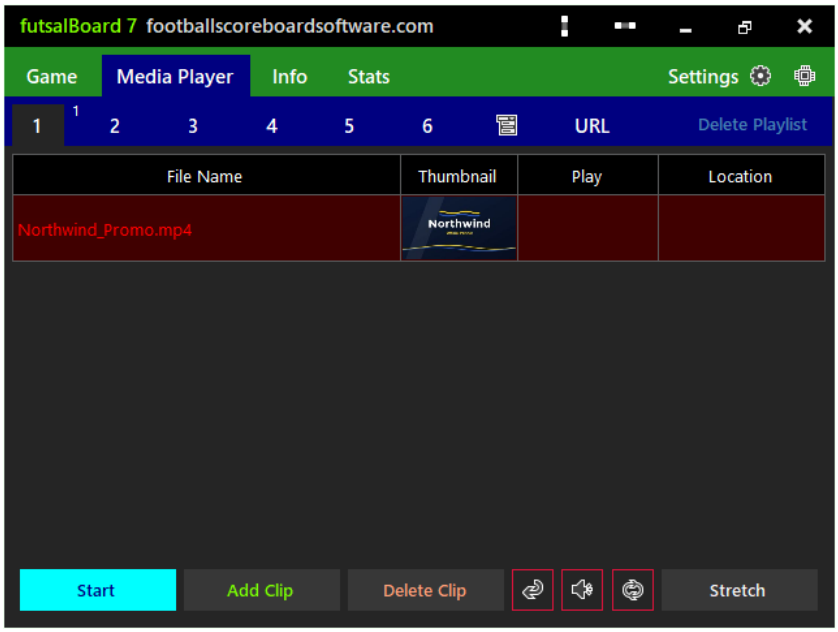



*Figure 9. The Media Player tab with playlist 1.*

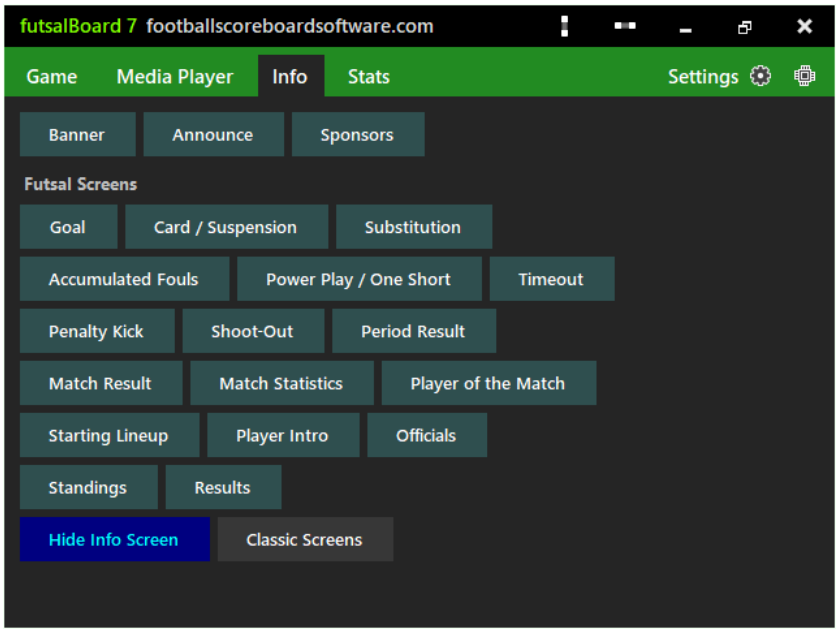



*Figure 10. The Info tab with the futsal info screens.*

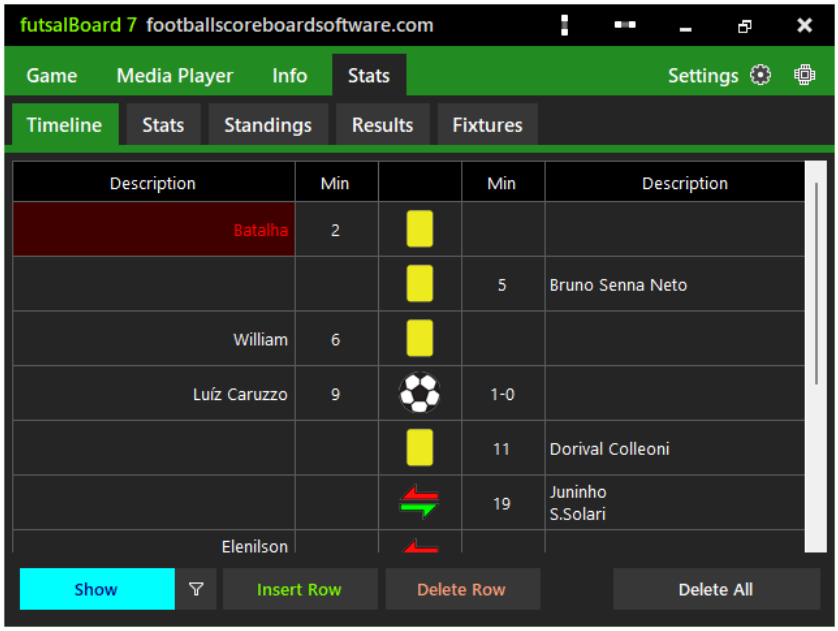



*Figure 11. The Stats tab with the match timeline.*

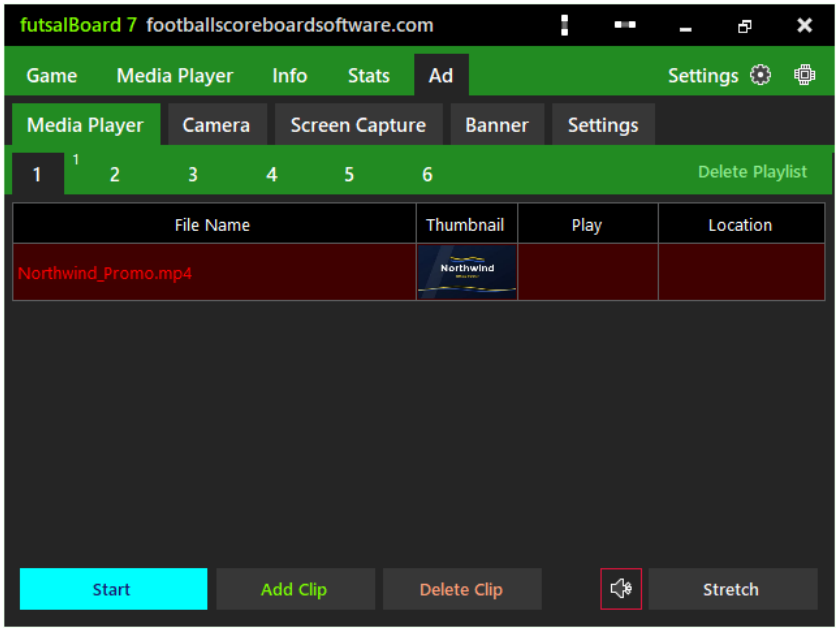



*Figure 12. The Advertisement mode: the extra "Ad" tab is open on its Media Player page.*

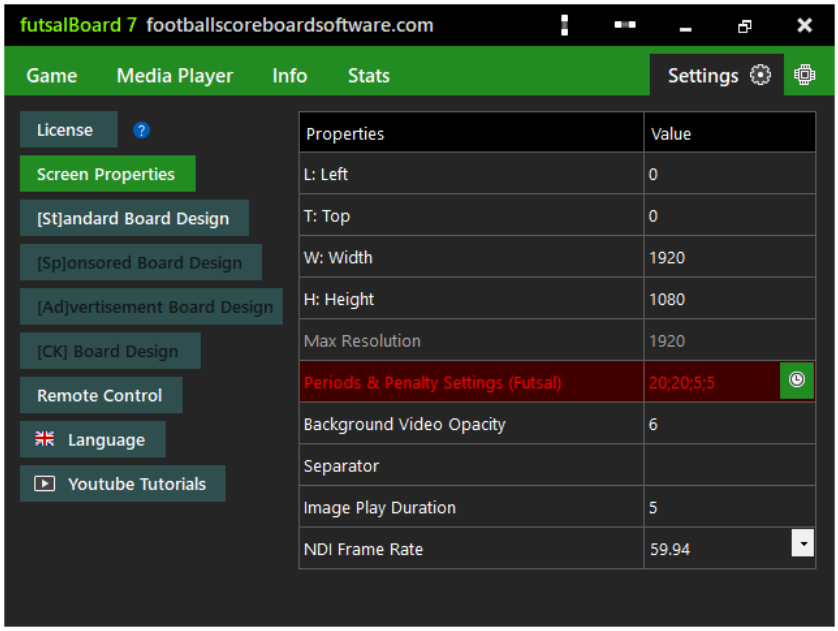



*Figure 13. The Settings tab with Screen Properties.*

## 4.3 Board Windows and Screens

The boards are separate windows without a frame. Only the board of the current display mode is shown:

| Window | Shows |
|---|---|
| Scoreboard window | The Standard board; in the Sponsored mode the same window with the sponsor band at the bottom or the top |
| Advertisement window | The Advertisement board with its media area and banners |
| Chroma Key window | The Chroma Key scorebug and the CK lower thirds on the key colour |
| Info screen window | The full-page info screens of the Standard, Sponsored and Advertisement modes |
| Media window | The clips and pictures of the Media Player tab and of Show Pictures |

All board windows share one position and size, set in Settings > Screen Properties: "L: Left", "T: Top", "W: Width" and "H: Height", in pixels of the Windows desktop (chapters 9 and 15). To show the board on a second monitor or an LED controller output, set Left to the x position of that output in the Windows display arrangement, for example 1920 for a monitor to the right of a full-HD main screen, and Width and Height to its resolution.

- Negative values of Left and Top are used as 0. Arrange the board display to the right of or below the main screen in the Windows display settings.
- Width and Height cannot be larger than the "Max Resolution" of the licence (chapter 3).
- The board windows stay on when the main window is minimised.
- With NDI on, the window on air is sent as the NDI stream (chapter 12).

## 4.4 Closing the Program

1. Click the Close button (X) in the title bar.

2. The program asks "The Application Will Be Closed! Are You Sure?". Click "Yes".

The program saves the team names and the two text lines, stops the clocks, closes the boards and all other windows, unloads its fonts, writes the open settings files and ends. "No" or Esc keeps the program running.

> **Note:** Always close futsalBoard 7 with its own Close button. Ending the program from the Windows taskbar or the Task Manager skips these steps. The score, the clock and the period are not kept in any case: after a restart the match starts again at 0-0 in the 1st period.

Questions and messages of the program cover the page with a coloured title band (red for warnings) and "Yes" / "No" or "Ok" buttons; Esc answers "No" (or "Ok"). Short notices, for example about a settings file that was repaired at the start or an internal error that was logged, appear for a few seconds as a small dark card at the bottom right of the main screen; a click closes it.

# 5. Disciplines

futsalBoard 7 runs four disciplines: Futsal, Beach Soccer, Netball and Floorball. Each discipline has its own rules: the periods and their lengths, the intervals, the clock direction, the timeouts, the team fouls, the cards and timed penalties, and how a level match is decided. The control panel, the board, the info screens and the remote page follow the discipline that is active.

Every discipline keeps its own set of rules. When you change the rules of one discipline, the other three keep theirs. The factory rules follow the rule books named in the program (FIFA Futsal Laws of the Game 2025-26, FIFA Beach Soccer Laws of the Game 2024-25, World Netball Rules of Netball 2024, IFF Rules of the Game 2026); Appendix B lists every factory value, and chapter 7 explains how to change them.

> **Note:** Check the rules against the regulations of your competition before the first match, for example the length of the periods in a youth competition or the number of kicks in a shoot-out. Every value can be changed in the rules dialog (chapter 7).

## 5.1 Futsal

Futsal is the discipline of a new installation.

| Rule | Factory Value |
|---|---|
| Periods | 2 × 20 minutes ("1st Period", "2nd Period"), board labels P1 and P2 |
| Clock | Counts down, stopped clock |
| Half-time | 15 minutes after the 1st period |
| Extra time | 2 × 5 minutes ("Extra Time - 1", "Extra Time - 2"), labels E1 and E2, no interval before or between them |
| Level after extra time | Kicks from the penalty mark: 5 per team, then one each until decided |
| Timeouts | 1 per team per period, 60 seconds, none in extra time |
| Team fouls | Counted per team and period; the 5th foul is a warning, from the 6th foul every foul gives a direct free kick from the second penalty mark (DFKSAF) |
| Cards | "Yellow Card" (Y), "Sending-Off" (R); a second yellow for the same player is a sending-off |
| Sending-off | 2 minutes of numerical reduction, ended earlier when the team with more players scores |
| Players on court | 5 |

On the control panel futsal has the team foul boxes, the timeout lights and buttons, the Y and R buttons and the period buttons 1st Period, 2nd Period, E1, E2 and P (the kicks from the penalty mark). The board shows the team fouls beside the scores (chapter 6.5).

**Board Output** **Control Panel**

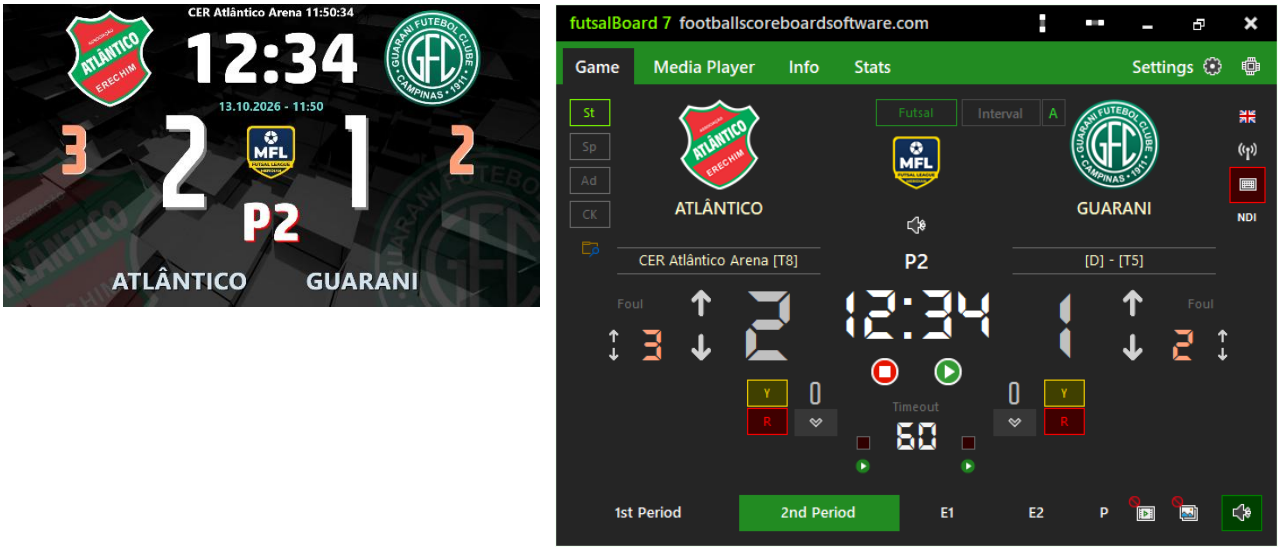



*Figure 14. Futsal, 2nd period at 12:34: Atlântico leads 2-1, team fouls 3-2. The board shows the fouls in orange beside the scores.*

## 5.2 Beach Soccer

| Rule | Factory Value |
|---|---|
| Periods | 3 × 12 minutes ("1st Period", "2nd Period", "3rd Period"), labels P1, P2, P3 |
| Clock | Counts down, stopped clock |
| Intervals | 3 minutes after the 1st and after the 2nd period, none before extra time |
| Extra time | 1 × 3 minutes ("ET"), label ET |
| Level after extra time | Kicks from the penalty mark: 5 per team, then sudden death |
| Timeouts | None |
| Team fouls | Not counted |
| Cards | "Yellow Card" (Y), "Sending-Off" (R) as in futsal; "Blue Card" (B, 2 minutes) is available but switched off |
| Sending-off | 2 minutes of numerical reduction, ended earlier when the team with more players scores |
| Players on court | 5 |

The control panel has no team foul boxes and no timeout area in beach soccer; the board shows no team fouls. The Blue Card is not part of the FIFA Laws; switch it on in the rules dialog only when your competition uses it (chapter 7).

**Board Output** **Control Panel**

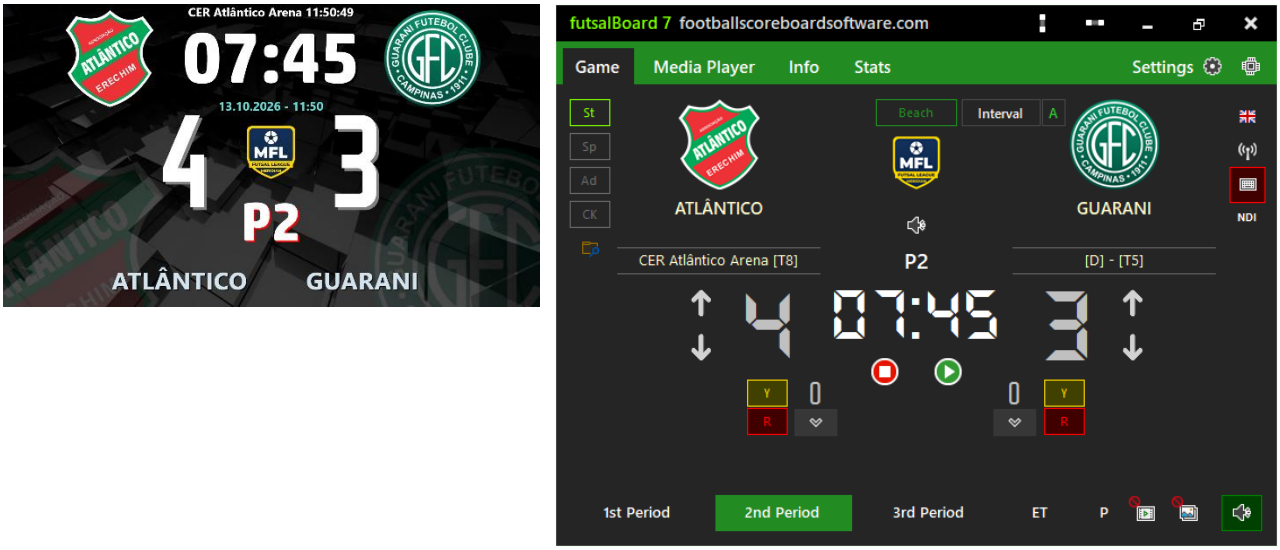



*Figure 15. Beach soccer, 2nd period at 07:45, 4-3. There are no team fouls and no timeouts; the period buttons show the three periods, ET and P.*

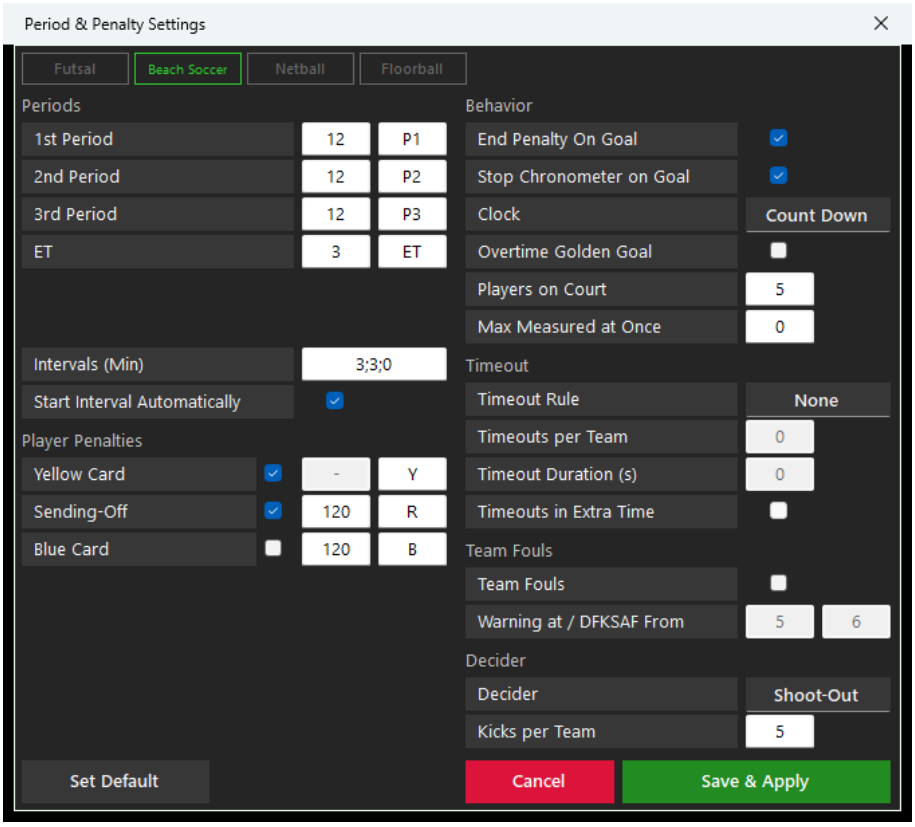



*Figure 16. The factory rules of beach soccer in the rules dialog.*

## 5.3 Netball

| Rule | Factory Value |
|---|---|
| Periods | 4 × 15 minutes ("1st Quarter" to "4th Quarter"), labels Q1 to Q4 |
| Clock | Counts down |

| Rule | Factory Value |
|---|---|
| Intervals | 4 minutes after Q1, 12 minutes after Q2 (half-time), 4 minutes after Q3, 4 minutes before extra time, 1 minute between the extra time halves |
| Extra time | 2 × 7 minutes ("Extra Time - 1", "Extra Time - 2"), labels E1 and E2 |
| Level after extra time | Play goes on until a team leads by two goals (Two-Goal Lead) |
| Timeouts | None |
| Team fouls | Not counted |
| Sanctions | "Caution" (W), "Suspension" (S, 2 minutes), "Ordered Off" (O, 4 minutes); a goal never ends them |
| Centre pass | Alternates after each goal; the panel and the board show the team that takes the next centre pass |
| A goal | Does not stop the clock |
| Players on court | 7 |

On the control panel netball shows two "Centre Pass" buttons where the foul boxes are in futsal, the W, S and O buttons, and six period buttons (1st Quarter to 4th Quarter, E1, E2). There is no shoot-out button. The board shows a yellow dot beside the name of the team that takes the next centre pass (chapter 6.12).

**Board Output** **Control Panel**

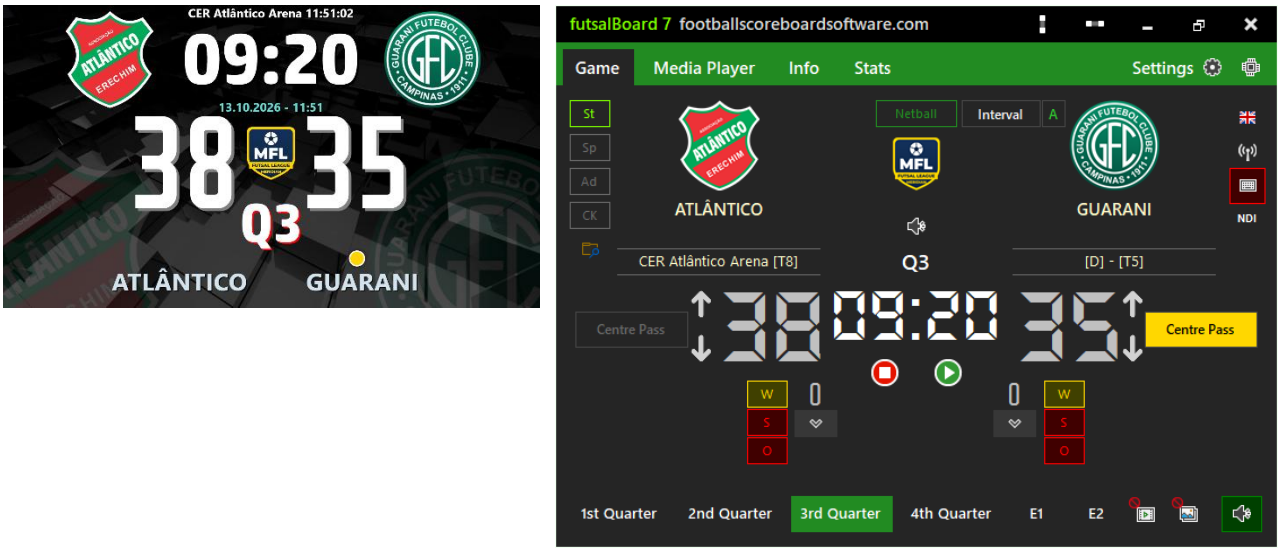



*Figure 17. Netball, 3rd quarter at 09:20, 38-35. The lit "Centre Pass" button on the panel and the yellow dot on the board: Guarani takes the next centre pass.*

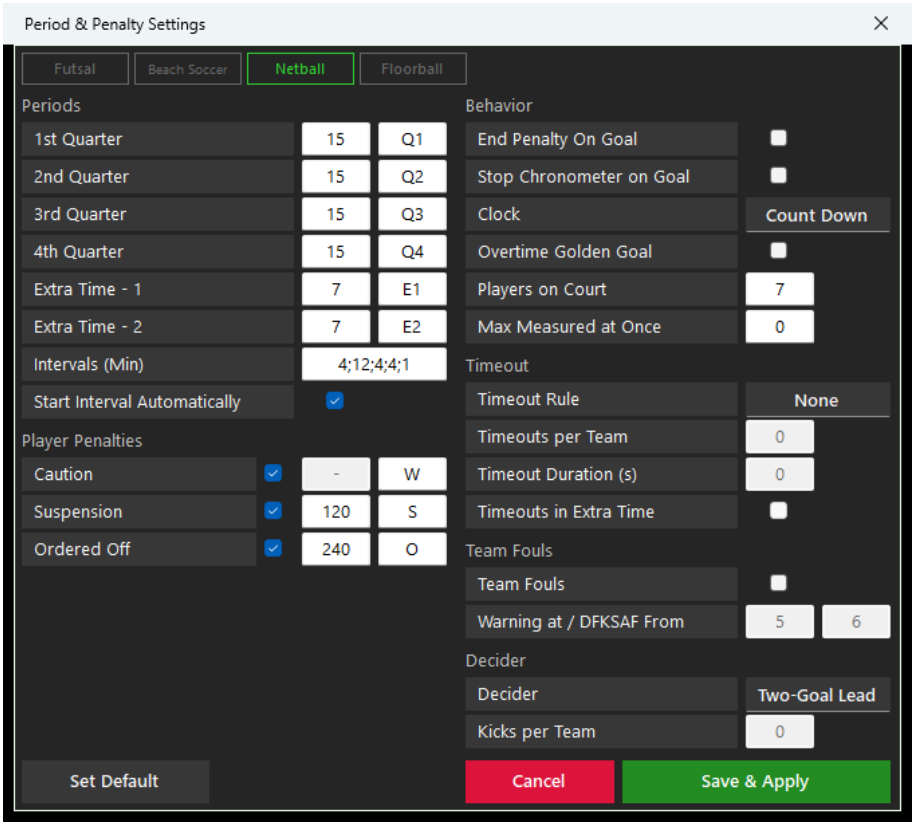



*Figure 18. The factory rules of netball in the rules dialog.*

## 5.4 Floorball

| Rule | Factory Value |
|---|---|
| Periods | 3 × 20 minutes ("1st Period", "2nd Period", "3rd Period"), labels P1, P2, P3 |
| Clock | Counts up from 00:00 to the period length |
| Intervals | 10 minutes after the 1st and after the 2nd period, 2 minutes before overtime |
| Overtime | 10 minutes ("Overtime"), label OT; the first goal ends the match (golden goal) |
| Level after overtime | Penalty shots: 5 per team, then sudden death |
| Timeouts | 1 per team per match, 30 seconds, also in overtime |
| Team fouls | Not counted |
| Penalties | Bench penalty (2), major bench penalty (2+2), 10-minute personal penalty (10), match penalty (MP); a 5-minute penalty (5) is available but switched off |
| Penalties measured at once | At most 2 per team and 1 per player; further penalties wait in the queue |
| Players on court | 6 |

On the control panel floorball shows the four penalty buttons 2, 2+2, 10 and MP for each team, the timeout area, and the period buttons 1st Period, 2nd Period, 3rd Period, OT and P (the penalty shots). The clock counts up: 16:05 on the panel means 16 minutes and 5 seconds played.

**Board Output** **Control Panel**

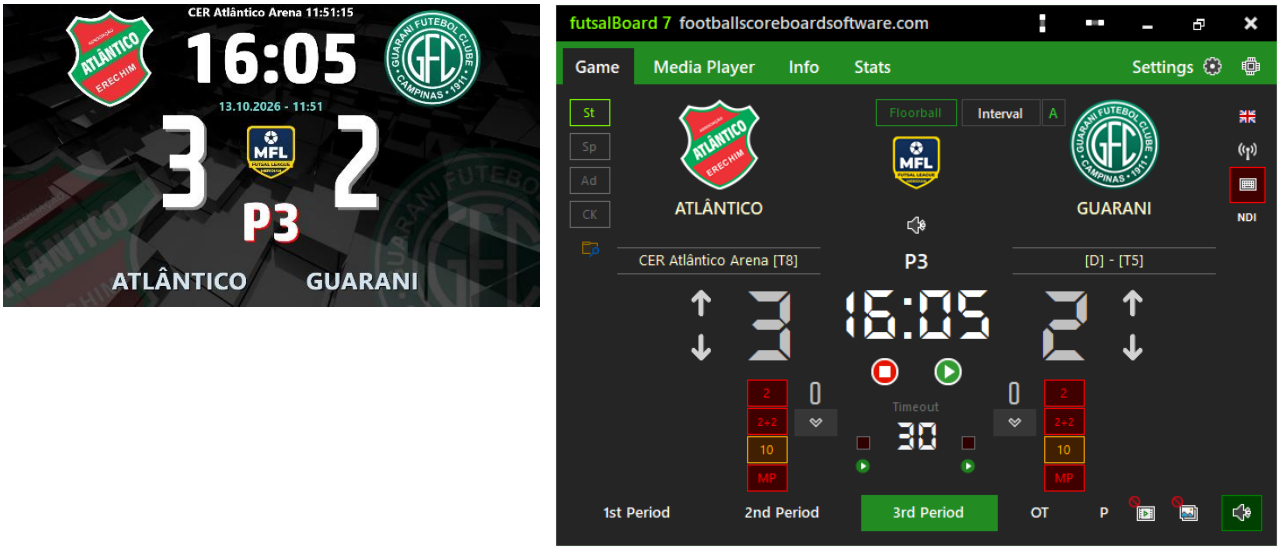



*Figure 19. Floorball, 3rd period at 16:05 (counting up), 3-2. The panel shows the penalty buttons 2, 2+2, 10 and MP for each team.*

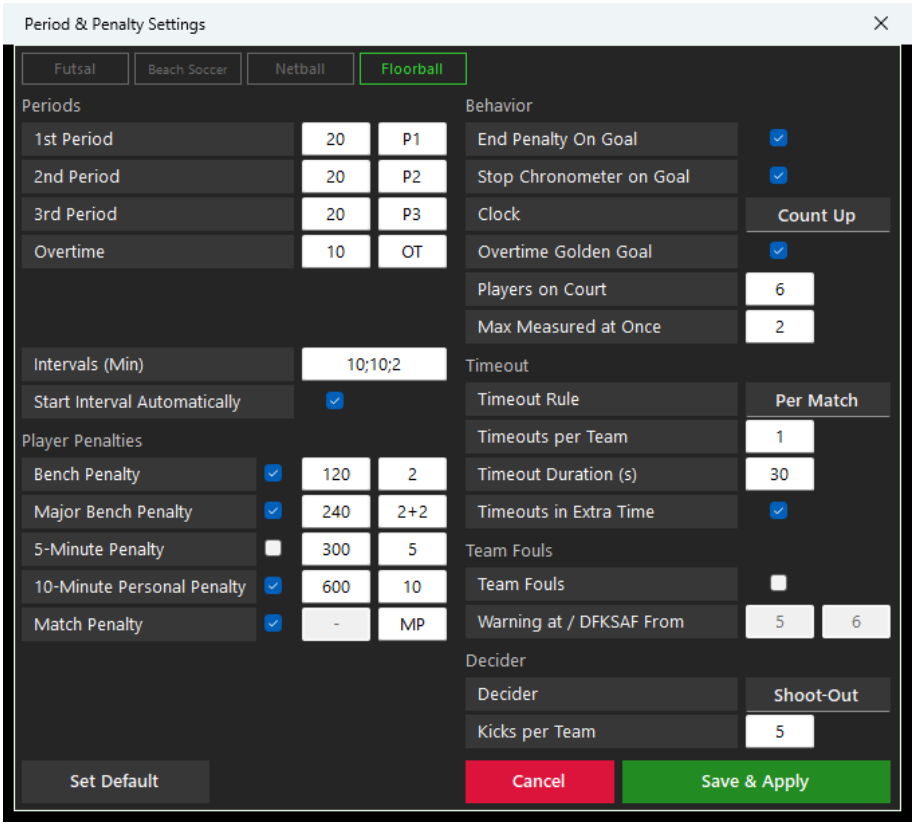



*Figure 20. The factory rules of floorball in the rules dialog.*

## 5.5 Switching the Discipline

The active discipline is shown on the discipline button of the Game tab, in the top row between the logos (for example "Futsal"). To switch:

1. Stop the match clock.

2. Click the discipline button on the Game tab. The rules dialog "Period & Penalty Settings" opens (chapter 7). You can also open it from Settings > Screen Properties: select the row "Periods & Penalty Settings (<discipline>)" and click the small clock button at its right end (chapter 7.3).
3. Click the discipline at the top of the dialog: "Futsal", "Beach Soccer", "Netball" or "Floorball". The rows show the saved rules of that discipline.
4. Click "Save & Apply".

- While the match clock runs, the switch is refused with the message "Stop the Clock Before Changing the Discipline."
- When something of the current match would be lost, the program asks first: "This Resets the Score, Penalties, Team Fouls, Timeouts, Cards, the Shoot-Out and the Timeline. Continue?" Click Yes to switch, No to stay in the dialog. The question comes when the match is in period 2 or later, has a score, a penalty, a team foul, a used timeout, a card, a shoot-out attempt, a running timeout or interval, or has been ended by a rule.
- The remote control and the HTTP API cannot switch the discipline.

## 5.6 What Changes

A switch to another discipline starts a new match in that discipline:

- The period buttons are rebuilt from the periods of the discipline, and the panel selects the 1st period with its clock at the start (for example 12:00 in beach soccer, 00:00 in floorball).
- The score, the penalties and sent-off timers, team fouls, timeouts, cards (also the red card marks on the board), the shoot-out, a running interval, the centre pass, the end of a match and the timeline of the Stats tab are cleared, as in a new match (chapter 6.15).
- The panel shows only what the discipline uses: the team foul boxes (futsal), the timeout area (futsal, floorball), the card and penalty buttons of the discipline (at most four per team), the shoot-out button P (futsal, beach soccer, floorball) and the "Centre Pass" buttons (netball).
- The board hides the team fouls when the discipline does not count them and shows the centre pass dot in netball.
- The info screens offer only the screens of the discipline: the Fouls screen in futsal, the Timeout screen in futsal and floorball, the Penalty and Shoot-Out screens in futsal, beach soccer and floorball (chapter 10). The 2-minute card of the card editors is named for the discipline: "Sent off – 2 min" (futsal, beach soccer), "Suspension – 2 min" (netball), "2-min penalty" (floorball).
- The remote page shows the buttons of the discipline (chapter 13), and the HTTP snapshot reports the discipline and its features (chapter 14).

What a switch keeps:

- the team names, players, logos and the two text lines, the display mode and the design;
- the rules of every discipline, including the ones you changed.

> **Note:** A change of the rules of the same discipline (for example a period length) does not start a new match. Chapter 7.4 explains what happens to a match in progress.

# 6. Control Panel

The control panel is the Game tab of the main window. Everything you need during a match is on this one page: the clock, the periods, the score, the team fouls, the timeouts, the cards and timed penalties, the intervals, the shoot-out and the display mode. The page fits the 640 × 480 main window, so it also works on a small screen beside the board.

The panel follows the active discipline (chapter 5): it shows only the boxes and buttons the discipline uses. The pictures in this chapter show futsal unless the caption says otherwise.

## 6.1 The Game Tab at a Glance

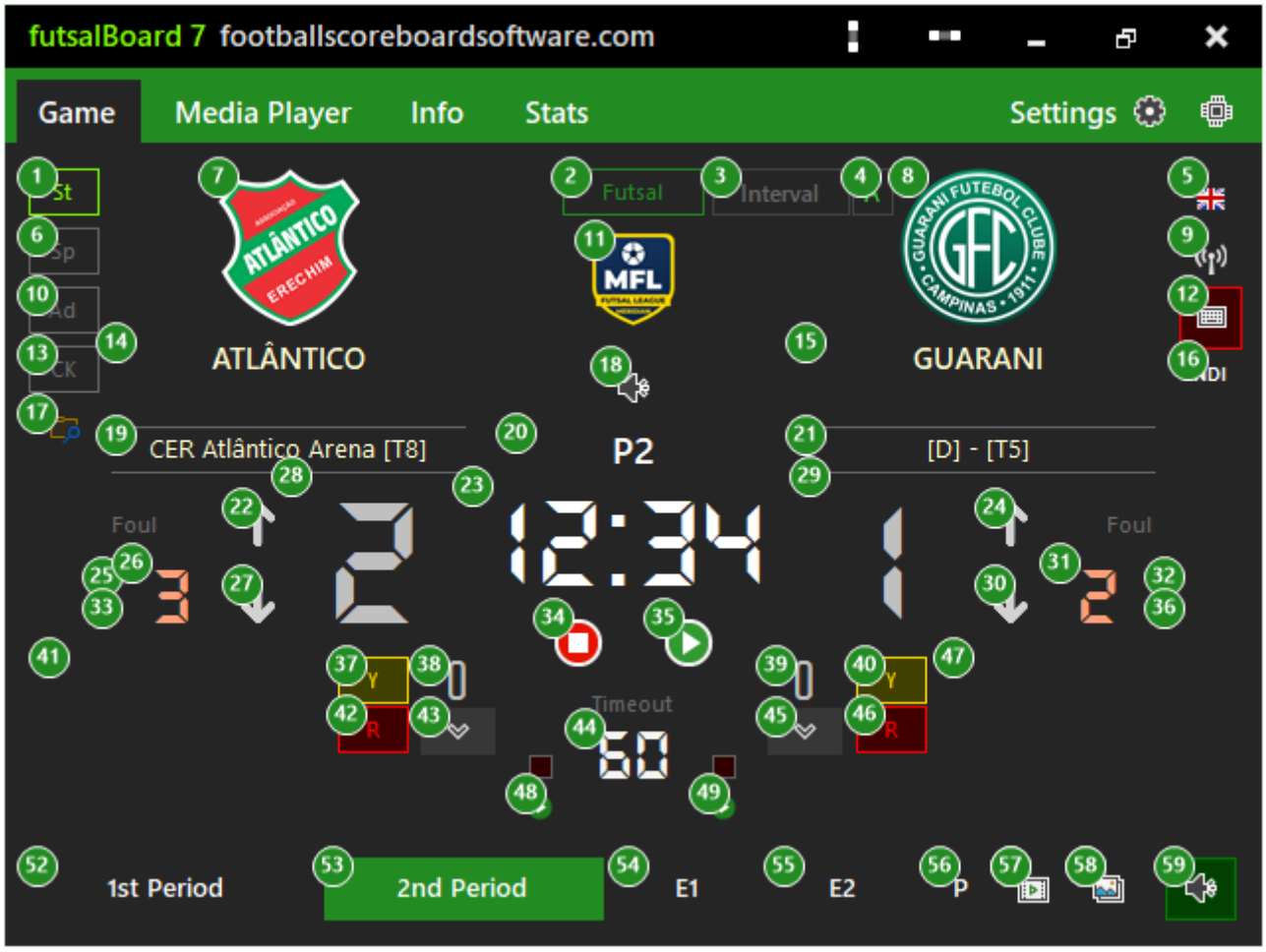
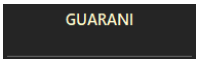
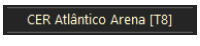
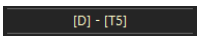
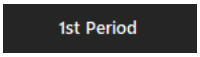
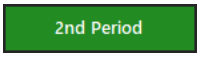
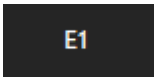



*Figure 21. The Game tab in futsal: 2nd period at 12:34, Atlântico leads 2-1, team fouls 3-2.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | St | **St** | Standard display mode: the full scoreboard (chapter 9). The active mode is green. |
| 2 | Futsal | **Futsal** | Shows the active discipline (Futsal, Beach, Netball, Floorball) and opens the rules dialog "Period & Penalty Settings" (chapter 7). |
| 3 | Interval | **Interval** | The interval after the current period ("Half-Time" or "Interval"): click to start it with the clock stopped, click the green countdown to end it. The tooltip shows its length or "No Interval" (chapter 6.8). |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 4 |  | **A** | "Start Interval Automatically": green = the interval starts by itself at the end of a period, grey = start it by hand. A click switches it. |
| 5 |  | **Language Settings** | Opens the language settings (chapter 15). |
| 6 |  | **Sp** | Sponsored display mode: the scoreboard with the sponsor band (chapter 9). |
| 7 |  | **Home logo** | Click to choose the logo of the home team (chapter 8). An erase button appears when the mouse is on the logo. |
| 8 |  | **Guest logo** | Click to choose the logo of the guest team (chapter 8). An erase button appears when the mouse is on the logo. |
| 9 |  | **Remote Control** | Opens the remote control settings (chapter 13). |
| 10 |  | **Ad** | Advertisement display mode: the score column beside media, camera or capture (chapter 9). |
| 11 |  | **Board logo** | Click to choose the logo in the middle of the board, for example the competition logo. An erase button appears when the mouse is on the logo. |
| 12 |  | **Keyboard Active** | Opens the Keyboard Hook Manager. Green = the global keyboard shortcuts are on, red = off (Appendix A). |
| 13 |  | **CK** | Chroma Key display mode: the scorebug for a TV production (chapter 9). |
| 14 |  | **Home team name** | The name of the home team on one or two lines (Enter starts the second line). The box turns black when it has more than two lines. |
| 15 |  | **Guest team name** | The name of the guest team on one or two lines (Enter starts the second line). The box turns black when it has more than two lines. |
| 16 |  | **NDI** | Starts and stops the NDI output of the board (chapter 12). Red = on. |
| 17 |  | **Select Design** | Opens the design gallery to choose another board design (chapter 11). |
| 18 |  | **Horn** | Sounds the horn. Shown only while the sounds are on. |
| 19 |  | **Text line 1** | The first text line of the board, for example the venue. Codes: [D] the date, [T] the time, [T8] and [T5] the first 8 or 5 characters of the time. |
| 20 |  | **Period label** | The label of the current period (P1, Q3, E1, OT ...), also on the board. Set by the period buttons; can be overwritten by hand. |
| 21 |  | **Text line 2** | The second text line of the board, with the same codes as line 1, for example [D] - [T5]. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 22 |  | **Home goal** | A goal for the home team with all the goal rules (reduction, centre pass, clock stop, golden goal, two-goal lead). |
| 23 |  | **Match clock** | The match clock, counting down or up by the rules. With the clock stopped, type a time (mm:ss or seconds): the clock starts from it at the next Play. |
| 24 |  | **Guest goal** | A goal for the guest team with all the goal rules (reduction, centre pass, clock stop, golden goal, two-goal lead). |
| 25 |  | **Home foul +1** | One team foul more for the home team. Stops the running clock. |
| 26 |  | **Home team fouls** | Futsal: the team fouls of the home team in this period. Yellow at the warning (5th foul), red with DFKSAF from the 6th foul. A number can be typed. |
| 27 |  | **Home goal back** | One goal less for the home team: a correction without rules. |
| 28 |  | **Home score** | The goals of the home team. Type a number and press Enter: a higher number counts as goals with the goal rules, a lower number is a correction (chapter 6.4). |
| 29 |  | **Guest score** | The goals of the guest team. Type a number and press Enter: a higher number counts as goals with the goal rules, a lower number is a correction (chapter 6.4). |
| 30 |  | **Guest goal back** | One goal less for the guest team: a correction without rules. |
| 31 |  | **Guest team fouls** | Futsal: the team fouls of the guest team in this period. Yellow at the warning (5th foul), red with DFKSAF from the 6th foul. A number can be typed. |
| 32 |  | **Guest foul +1** | One team foul more for the guest team. Stops the running clock. |
| 33 |  | **Home foul -1** | One team foul less for the home team (a correction). |
| 34 |  | **Stop** | Running clock: stops it. Stopped clock: sets it back to the start of the period. |
| 35 |  | **Play / Pause** | Starts the match clock; click again to pause it. Greyed out during a timeout. |
| 36 |  | **Guest foul -1** | One team foul less for the guest team (a correction). |
| 37 |  | **Y** | First card or penalty button of the home team (futsal and beach soccer Y, netball W, floorball 2). Gives it to the shirt number in the number box; the tooltip names it (chapter 6.7). |
| 38 |  | **Home shirt number** | The shirt number for the next card or penalty of the home team. |
| 39 |  | **Guest shirt number** | The shirt number for the next card or penalty of the guest team. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 40 |  | **Y** | First card or penalty button of the guest team (futsal and beach soccer Y, netball W, floorball 2). Gives it to the shirt number in the number box; the tooltip names it (chapter 6.7). |
| 41 |  | **Home penalties** | The timed penalties of the home team: cancel cross, time left, shirt number. Grey = waiting in the queue, orange = personal penalty. With the clock stopped, double click the time or the number to correct it. |
| 42 |  | **R** | Second card or penalty button of the home team (futsal and beach soccer R = sending-off 02:00, netball S, floorball 2+2). A timed penalty adds a row to the penalty list. |
| 43 |  | **Select Player** | Opens the shirt numbers of the home player list; the number chosen goes into the number box. |
| 44 |  | **Timeout** | The length of the timeout in seconds; counts down in red while a timeout runs. Another length can be typed before the start. |
| 45 |  | **Select Player** | Opens the shirt numbers of the guest player list; the number chosen goes into the number box. |
| 46 |  | **R** | Second card or penalty button of the guest team (futsal and beach soccer R = sending-off 02:00, netball S, floorball 2+2). A timed penalty adds a row to the penalty list. |
| 47 |  | **Guest penalties** | The timed penalties of the guest team: cancel cross, time left, shirt number. Grey = waiting in the queue, orange = personal penalty. With the clock stopped, double click the time or the number to correct it. |
| 48 |  | **Home timeout** | Starts a timeout of the home team (only with the clock stopped and a timeout left); click again to end it early. |
| 49 |  | **Guest timeout** | Starts a timeout of the guest team (only with the clock stopped and a timeout left); click again to end it early. |
| 50 |  | **Remove video** | Removes the background video. |
| 51 |  | **Remove image** | Removes the middle layer image. |
| 52 |  | **1st Period** | Selects the 1st period (1st Quarter in netball). From a later period this starts a new match after a question. |
| 53 |  | **2nd Period** | Selects the 2nd period (2nd Quarter in netball). Only with the clock stopped. |
| 54 |  | **E1** | Selects the third period of the discipline: E1 in futsal, 3rd Period in beach soccer and floorball, 3rd Quarter in netball. |
| 55 |  | **E2** | Selects the fourth period of the discipline: E2 in futsal, ET in beach soccer, 4th Quarter in netball, OT in floorball. |
| 56 |  | **P** | The shoot-out: kicks from the penalty mark (futsal, beach soccer) or penalty shots (floorball). Not in netball. |
| 57 |  | **Background video** | Chooses a video for the background layer of the board. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 58 |  | **Middle image** | Chooses an image for the middle layer of the board, between the background video and the scoreboard. |
| 59 |  | **Sound** | Switches the sounds (start, stop, horn, end of a timeout or penalty) on (green) and off (red). |

Many controls show a tooltip when you rest the mouse on them, for example "Sending-Off (02:00)" on the R buttons, "Kicks from the Penalty Mark" on the P button or "Start Interval Automatically: On" on the A button. The period buttons show their full name in the tooltip when the button shows only the short label (E1 = "Extra Time - 1").

The match state tag appears in the top row, left of the discipline button, when the match is in a special state. It is hidden during normal play.

| Tag | Colour | When |
|---|---|---|
| "Half-Time" | Blue | The half-time interval runs (section 6.8). |
| "Interval" | Blue | Another interval runs, for example after the 1st period in beach soccer. |
| "Golden Goal" | Gold | An overtime in which the first goal ends the match, floorball by default (section 6.10). Tooltip: "Overtime: First Goal Ends the Match". |
| "Two-Goal Lead" | Gold | Netball, level after the last period: play goes on until a team leads by two goals (section 6.11). Tooltip: "Level After Extra Time: Play Until a Team Leads by Two Goals". |
| "Final" | Green | A rule has ended the match and scoring is locked (section 6.14). The tooltip names the winner, for example "ATLÂNTICO Wins – Scoring Locked: Click to Unlock". The tag flashes red when a goal is refused. |

The board shows the same states in its status label (in the Standard design a yellow plate above the scores): "Half-Time", "Interval", "Golden Goal", "Two-Goal Lead" and "Final".

> **Note:** In DEMO mode the score arrows, the team-foul arrows and the team logos of both teams ask for a licence ("License Required !", chapter 3).

## 6.2 Clock

The big clock in the middle of the panel is the match clock. It counts down from the period length (futsal, beach soccer, netball) or up from 00:00 to the period length (floorball). The direction is the rule "Clock" in the rules dialog (chapter 7).

| Control | What It Does |
|---|---|
| Play / Pause (green) | Starts the clock; click again to pause it. The clock continues from its exact value, so no fraction of a second is lost at a stoppage. |

| Control | What It Does |
|---|---|
| Stop (red) | While the clock runs: stops it. While it is stopped: sets it back to the start of the period (for example 20:00 counting down, 00:00 counting up). |
| Clock box | Click in the box and type a time, for example 12:34, 2:05, 75 (seconds) or 0:45.5. The clock starts from the typed time the next time you click Play. |

- At the end of the period (00:00 counting down, the period length counting up) the clock stops by itself and the horn sounds. When the match goes on, the interval to the next period starts by itself (section 6.8).
- A goal stops the running clock when the rule "Stop Chronometer on Goal" is on (futsal, beach soccer and floorball by default, not netball). A team foul always stops it (section 6.5).
- The clock cannot be started during a timeout: Play and Stop are greyed out while a timeout runs (section 6.6).
- Starting the clock ends a running interval.
- The timed penalties run only while the clock runs (section 6.7).
- The speaker button at the bottom right switches the sounds on (green) and off (red). While the sounds are on, the horn button below the logo sounds the horn by hand.

## 6.3 Periods

The period buttons along the bottom of the panel follow the periods of the discipline: futsal 1st Period, 2nd Period, E1, E2 and P; beach soccer 1st Period, 2nd Period, 3rd Period, ET and P; netball 1st Quarter to 4th Quarter, E1 and E2; floorball 1st Period, 2nd Period, 3rd Period, OT and P. A period with 0 minutes in the rules has no button. A button shows the full name when it fits, otherwise its short label; the tooltip always shows the full name.

To change the period:

1. Stop the clock. The period buttons do nothing while the clock or a timeout runs.
2. Click the period button. It turns green, the clock is set to the start of the period, and the period label above the clock (P1, P2, E1, Q3, OT ...) changes. The board shows the same label.

- Going back to the 1st period from a later period starts a new match and asks first (section 6.15).
- The penalties keep their remaining time into the next period and into extra time; only a new match clears them.
- The team fouls follow the period (section 6.5) and the timeouts follow the timeout rule (section 6.6).
- In floorball, going from overtime to the penalty shots ends every penalty except a match penalty.
- The period label box above the clock can be overwritten by hand, for example for a special period name; the next period button sets it again.

## 6.4 Score and Corrections

The score boxes left and right of the clock hold the goals of each team. There are three ways to change a score:

| Way | How | What Happens |
|---|---|---|
| Goal | The up arrow beside the score, the keyboard (Appendix A), the remote or the HTTP command | One goal with all the rules of the discipline: a sent-off reduction may end (section 6.7), the centre pass changes (netball), the clock stops when "Stop Chronometer on Goal" is on, and a |

| Way | How | What Happens |
|---|---|---|
| | set_home_score_up / set_guest_score_up | goal can end the match by a rule (golden goal, two-goal lead). |
| Correction down | The down arrow beside the score, or a lower number typed in the score box | One goal less, without any rule: a reduction that has ended is not started again, the centre pass is not moved back. |
| Typed score | Click the score box, type the number, press Enter (or click elsewhere) | A higher number counts as that many goals, each with the goal rules. A lower number is a correction. A typed score never ends the match by itself (see below). |

When a typed score decides the match by a rule (a team ahead in a golden-goal overtime, or a two-goal lead in netball), the program asks "End Match with This Score?" with the team names and the score.

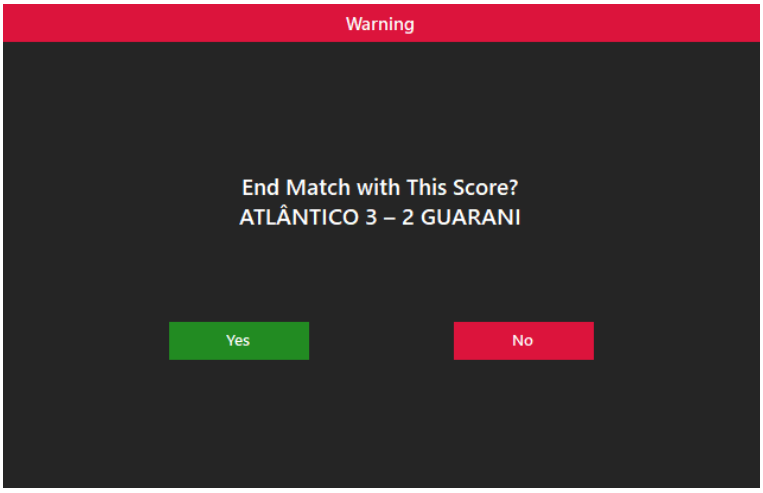



*Figure 22. The question after a typed deciding score in floorball overtime.*

- Yes ends the match: the "Final" tag appears, the clock stops and scoring is locked (section 6.14).
- No keeps the match going. The next goal with the arrow (or the keyboard, or the remote score up) then ends it.

A score set by the remote page or by the HTTP commands set_home_score / set_guest_score works like a typed score but never asks and never ends the match: a deciding score stays pending until the next goal or until you end it on the panel (chapter 14).

> **Note:** While the match is over (the "Final" tag), every score change is refused, also a correction down. The tag flashes red. Unlock scoring first (section 6.14).

## 6.5 Team Fouls (Futsal)

In futsal the panel has a foul box for each team, at the far left and right of the scores, with small arrows beside it. The board shows the fouls beside the scores.

- Click the small up arrow to add a foul. A foul stops the running clock.
- Click the small down arrow to take a foul back.
- You can also click in the box and type the number.

The fouls are counted per team and period: the 2nd period starts again at 0. Extra time continues the count of the 2nd period. When you go back to an earlier period, the box shows the count of that period again.

| Fouls | Panel | Board |
|---|---|---|
| 0-4 | Orange number, title "Foul" | Orange number |
| 5 (the warning) | Yellow box, title "Foul Warning", tooltip "Next Foul: DFKSAF" | Yellow plate |
| 6 and more | Red box, title "DFKSAF", tooltip "Direct Free Kick from the Second Penalty Mark" | Red plate |

The warning and DFKSAF limits are rules ("Warning at / DFKSAF From", 5 and 6 by default, chapter 7). The remote has a foul reset for the current period (HTTP foul_reset).

**Board Output** **Control Panel**

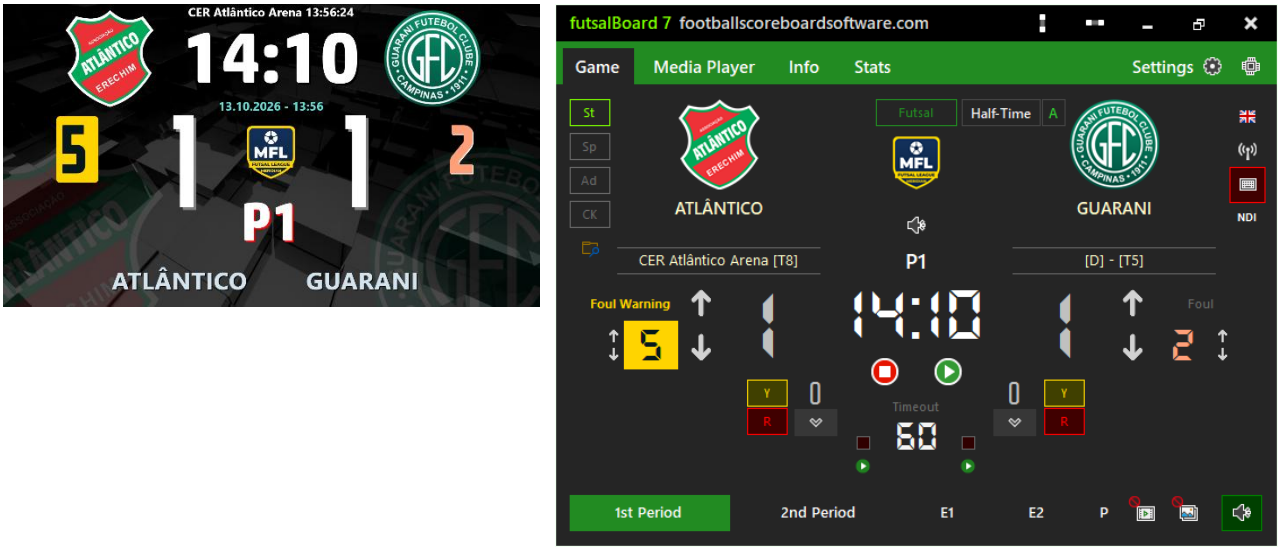



*Figure 23. The 5th team foul of Atlântico in the 1st period: the yellow warning on the panel and on the board.*

**Board Output** **Control Panel**

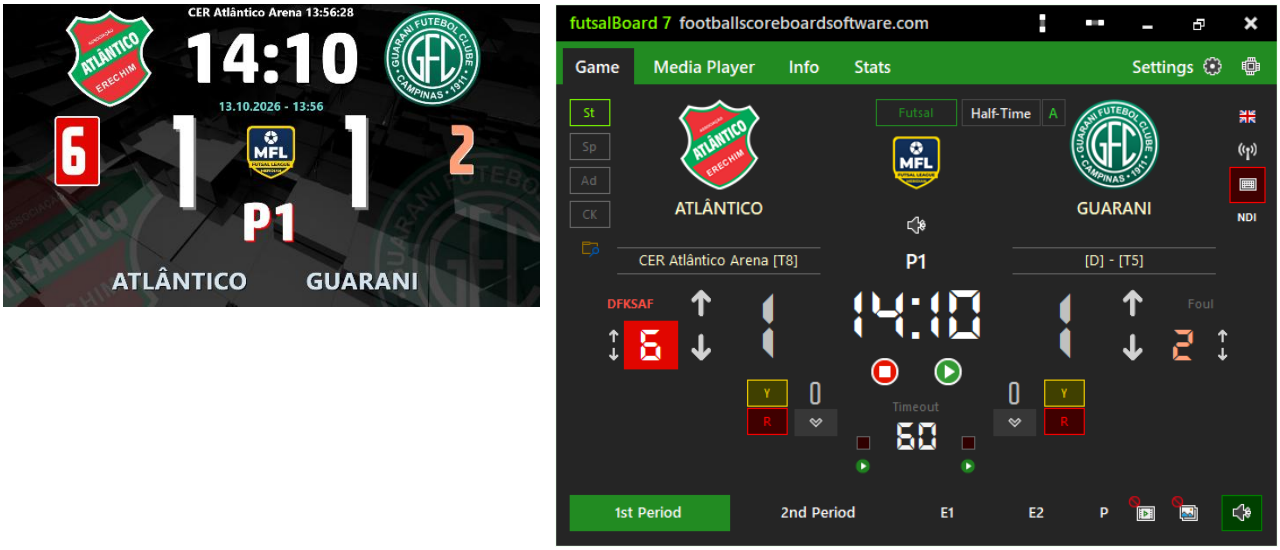



*Figure 24. The 6th team foul: from now on every foul gives a direct free kick from the second penalty mark. Panel and board turn red.*

Beach soccer, netball and floorball do not count team fouls: the boxes are hidden and the board shows no fouls.

## 6.6 Timeouts

The timeout area below the clock is shown in futsal (1 timeout per team per period, 60 seconds, none in extra time) and floorball (1 timeout per team per match, 30 seconds, also in overtime). Beach soccer and netball have no timeouts; the area is hidden.

- The small squares are the timeout lights, one per timeout allowed: dark = left, red = used.
- The number between them is the length of the timeout in seconds. You can type another length before you start a timeout.
- The green play button below the lights of a team starts its timeout. It is shown only while the match clock is stopped.

To give a team a timeout:

1. Stop the clock.
2. Click the play button of the team. Its light turns red and flashes, the number counts down in red, and the button becomes a stop button. Play, Stop and the button of the other team are not available meanwhile.
3. The board shows the countdown in place of the period label and the timeout light of the team.
4. The timeout ends at 0 (a sound plays when the sounds are on), or earlier when you click the stop button.

- A timeout is refused when the team has none left: in futsal one per period and none in extra time, in floorball one per match. No timeout is possible during the shoot-out.
- To correct the count, stop the clock and click a light: a click on a light sets the timeouts used up to that light; a click on the last red light takes it back.
- In futsal the lights start again in every period.

**Board Output** **Control Panel**

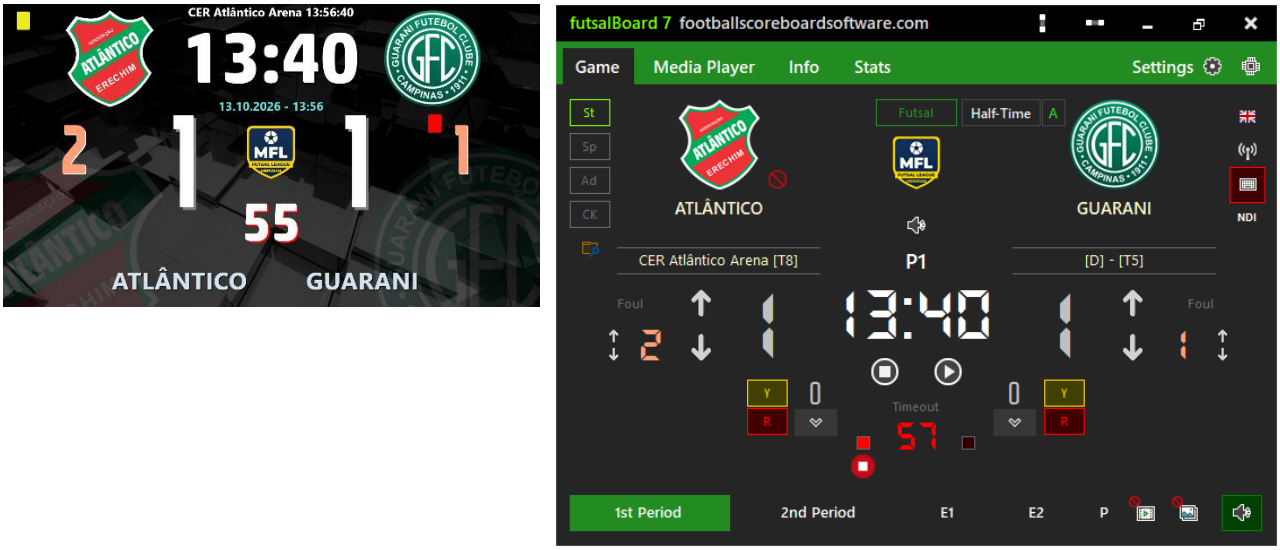



*Figure 25. A home timeout: the red countdown (57) on the panel, the board shows the countdown below the scores and the timeout light at the top left.*

## 6.7 Cards, Sent-Off and 2-Minute Timers

Each team has a column of card and penalty buttons below its score, a box for the shirt number and a list of the timed penalties. The buttons are those of the discipline that are switched on in the rules (at most four per team):

| Discipline | Buttons |
|---|---|
| Futsal | Y "Yellow Card", R "Sending-Off" (02:00) |
| Beach Soccer | Y "Yellow Card", R "Sending-Off" (02:00); B "Blue Card" (02:00) when switched on |
| Netball | W "Caution", S "Suspension" (02:00), O "Ordered Off" (04:00) |
| Floorball | 2 "Bench Penalty" (02:00), 2+2 "Major Bench Penalty" (04:00), 10 "10-Minute Personal Penalty" (10:00), MP "Match Penalty"; 5 "5-Minute Penalty" (05:00) when switched on |

To give a card or a penalty:

1. Type the shirt number in the number box of the team, or click the arrow button beside it and pick the number from the player list (chapter 8).
2. Click the button of the card or penalty.

What happens:

- A yellow card, a caution or a warning is counted for the player; it has no timer.
- A timed penalty adds a row to the list of the team: the time left and the shirt number, with a red cross to cancel it. The time runs only while the match clock runs (playing time) and carries into the next period.
- When the time is up, the row goes and a sound plays (when the sounds are on).
- Futsal and beach soccer: a second yellow card for the same shirt number becomes a sending-off with its 2-minute reduction. A further card for a player who is already sent off is recorded but starts

no second reduction. Cards given without a number are counted for the team but never turned into a sending-off.

- A sending-off also adds a red card mark beside the team on the board.
- Every card and penalty button also writes a row in the match timeline of the Stats tab with the player name from the team list (or the number) and the minute of the match. Minute 1 is the first 60 seconds of playing time, whatever the clock direction.

**Board Output** **Control Panel**

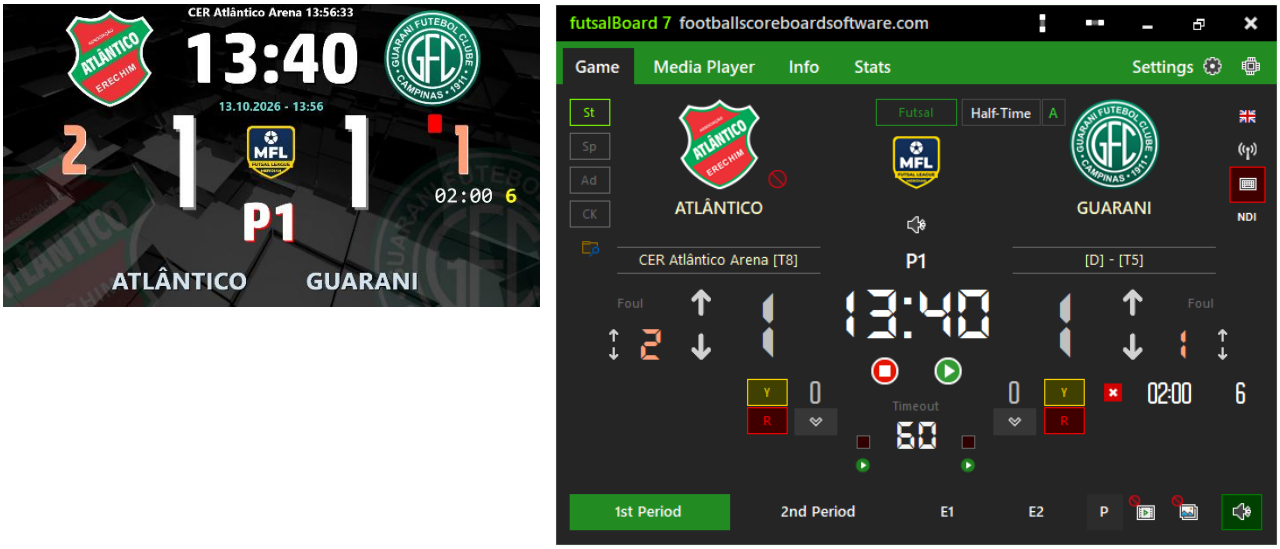



*Figure 26. Guarani no. 6 sent off: the 02:00 reduction in the list of the panel, and on the board the red card mark and the timer beside the fouls.*

When a reduction ends early (the rule "End Penalty On Goal", on by default in futsal, beach soccer and floorball):

- Futsal and beach soccer: when the team with more players scores, the team with fewer players gets one player back: the reduction with the least time left ends. 5 against 4 and 4 against 3: one player back. 5 against 3: only one player back. At equal strength (4 against 4) or when the team with fewer players scores, nothing ends.
- Floorball: a goal ends the bench penalty with the least time left of the team that conceded, unless the scoring team had fewer or the same number of players. A 2+2 is one penalty: a goal ends its first 2 minutes and the second 2 minutes start; only one part can end on a goal.
- Netball: a suspension or an ordering off never ends on a goal. The Blue Card of beach soccer does not end on a goal either.

Floorball has more rules:

- At most 2 penalties per team are measured at once, and only 1 per player (the rule "Max Measured at Once"). Further penalties wait in the queue: their rows are grey and start when a place becomes free, in the order they were given.
- A 10-minute personal penalty comes with a 2-minute bench penalty, a match penalty with a 2+2 bench penalty; both rows are added at once. The personal penalty starts after the bench penalties of the player, does not reduce the team and is shown in orange.
- A match penalty lasts for the rest of the match: its row shows MP instead of a time.
- With the 5-minute penalty switched on, the panel shows 2, 2+2, 5 and 10; the match penalty is then available on the remote only.

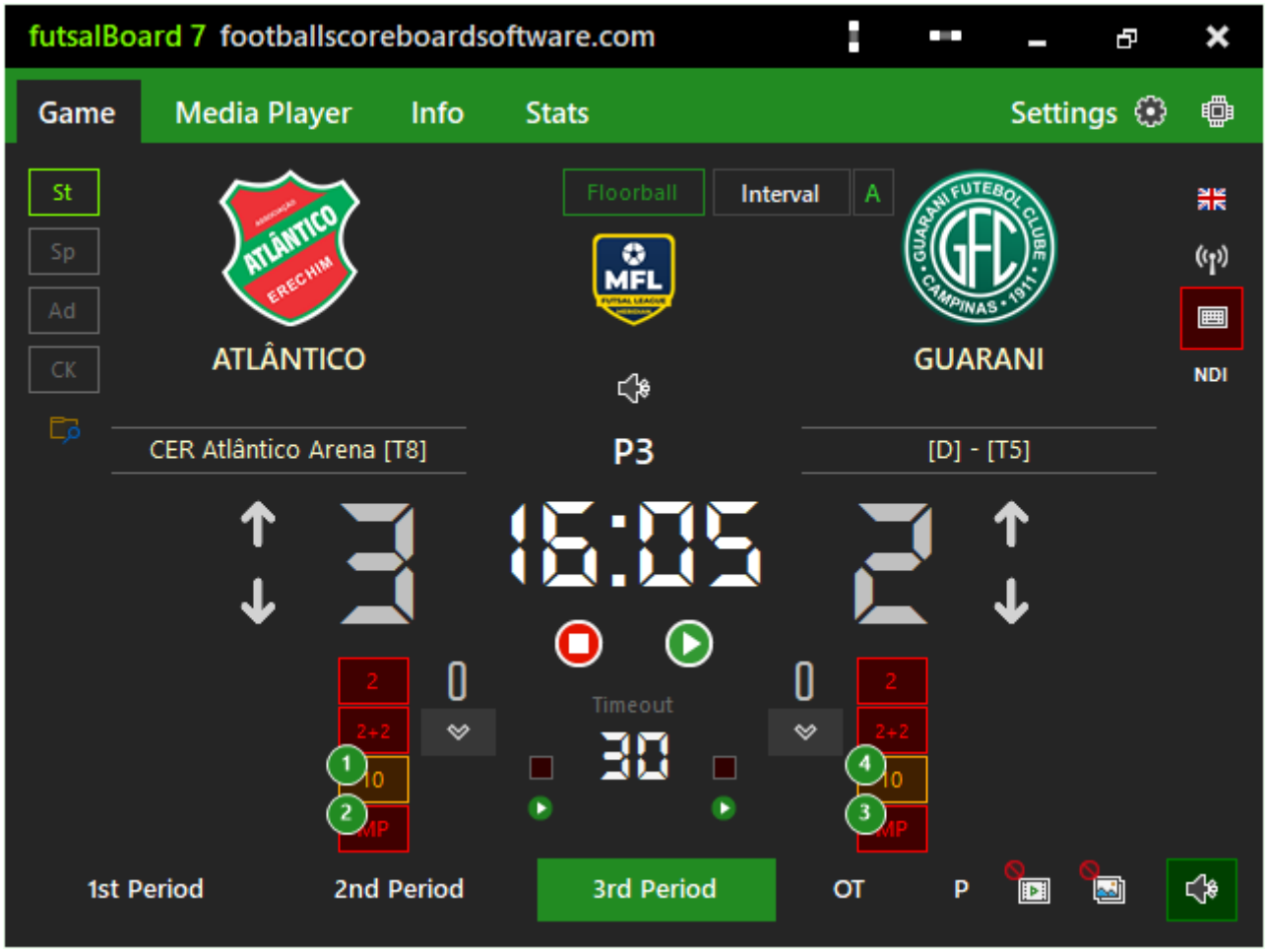



*Figure 27. Floorball: the four penalty buttons of each team.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | 10 | **2+2** | Third card or penalty button of the home team when the discipline has one (beach soccer B when switched on, netball O, floorball 10 or 2+2). The tooltip names it. |
| 2 | MP | **MP** | Fourth penalty button of the home team (floorball: MP, the match penalty with its 2+2 bench penalty; 10 when the 5-minute penalty is on). |
| 3 | MP | **MP** | Fourth penalty button of the guest team (floorball: MP, the match penalty with its 2+2 bench penalty; 10 when the 5-minute penalty is on). |
| 4 | 10 | **2+2** | Third card or penalty button of the guest team when the discipline has one (beach soccer B when switched on, netball O, floorball 10 or 2+2). The tooltip names it. |

Corrections in the penalty list:

- Click the red cross of a row to cancel the penalty. Queued rows move up.
- Stop the clock and double click the time or the number of a row to change it. Type the time as mm:ss (for example 01:30); 00:00 removes the row. Another form is not accepted: the cell stays open, and a red mark at the left of the row shows "The Time Must Be mm:ss (for Example 02:30)." when you rest the mouse on it. Esc cancels the change.

## 6.8 Intervals and Half-Time

The interval button in the top row (right of the discipline button) shows the name of the interval after the current period: "Half-Time" in the middle of an even number of periods (futsal after the 1st period, netball after the 2nd quarter), otherwise "Interval". The button is hidden when the discipline has no intervals at all.

| Discipline | Factory Intervals |
|---|---|
| Futsal | Half-time 15 minutes after the 1st period; none before extra time and between its halves |
| Beach Soccer | 3 minutes after the 1st and the 2nd period; none before extra time |
| Netball | 4 minutes after Q1, half-time 12 minutes after Q2, 4 minutes after Q3, 4 minutes before extra time, 1 minute between its halves |
| Floorball | 10 minutes after the 1st and the 2nd period, 2 minutes before overtime |

The interval starts by itself when the clock of a period reaches its end and the match goes on:

- always after a regular period that is not the last one, and between two extra periods;
- after the last regular period only when the score is level and extra time follows (a decided match has no interval);
- not after the last period of the match.

While the interval runs:

- the interval button is green and counts down; the tag shows "Half-Time" or "Interval";
- the board shows the interval countdown on its main clock and the status label "Half-Time" or "Interval";
- the match clock on the panel stays where the period ended (00:00), and the remote and the event minutes keep the period time;
- the interval counts real time, not playing time.

The interval ends when its time is up (the horn sounds), when you click the green interval button ("End Interval"), when you start the clock, or when you select another period.

**Board Output**




**Control Panel**

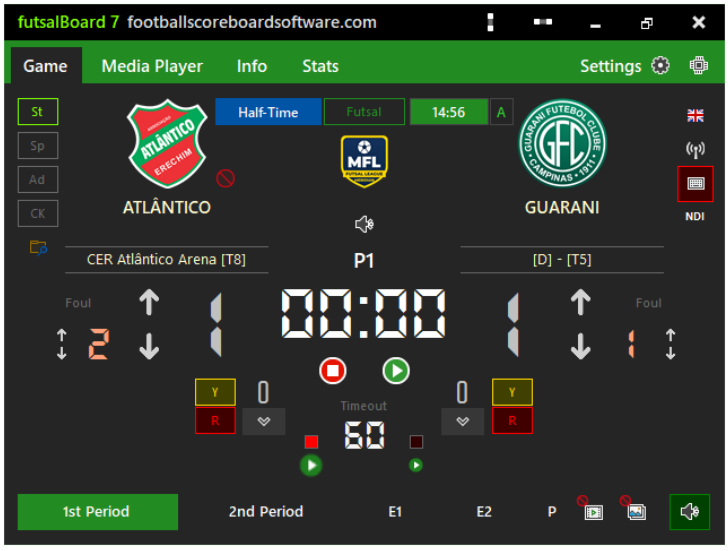


*Figure 28. Half-time after the 1st period: the blue "Half-Time" tag and the green countdown 14:56 on the panel, the "Half-Time" plate and the countdown on the board.*

Starting an interval by hand: stop the clock and click the interval button. Its tooltip shows the length, for example "Start Interval (15:00)", or "No Interval" when no interval follows the current period (the button text is grey then). The button does nothing while the clock or a timeout runs.

The "A" button beside it is the setting "Start Interval Automatically" (the same setting as in the rules dialog, chapter 7, and on the remote):

- green A: the interval starts by itself at the end of a period (factory setting);
- grey A: the program stops the clock and sounds the horn at the end of a period, and you start the interval with the interval button.

The tooltip shows the state, for example "Start Interval Automatically: On". The netball play-on for a two-goal lead (section 6.11) applies in both cases.

## 6.9 Extra Time

Extra time is played with the extra period buttons: E1 and E2 in futsal and netball, ET in beach soccer, OT (overtime) in floorball. The program does not move to extra time by itself: when the regular time ends level, select the first extra period (after the interval, if there is one), then start the clock.

- Futsal: 2 × 5 minutes; no timeouts; the team fouls of the 2nd period continue.
- Beach soccer: 1 × 3 minutes.
- Netball: 2 × 7 minutes with 1 minute between them; if still level, play goes on for a two-goal lead (section 6.11).
- Floorball: 10 minutes of golden goal overtime (section 6.10); the timeouts that are left can be used.

**Board Output** **Control Panel**

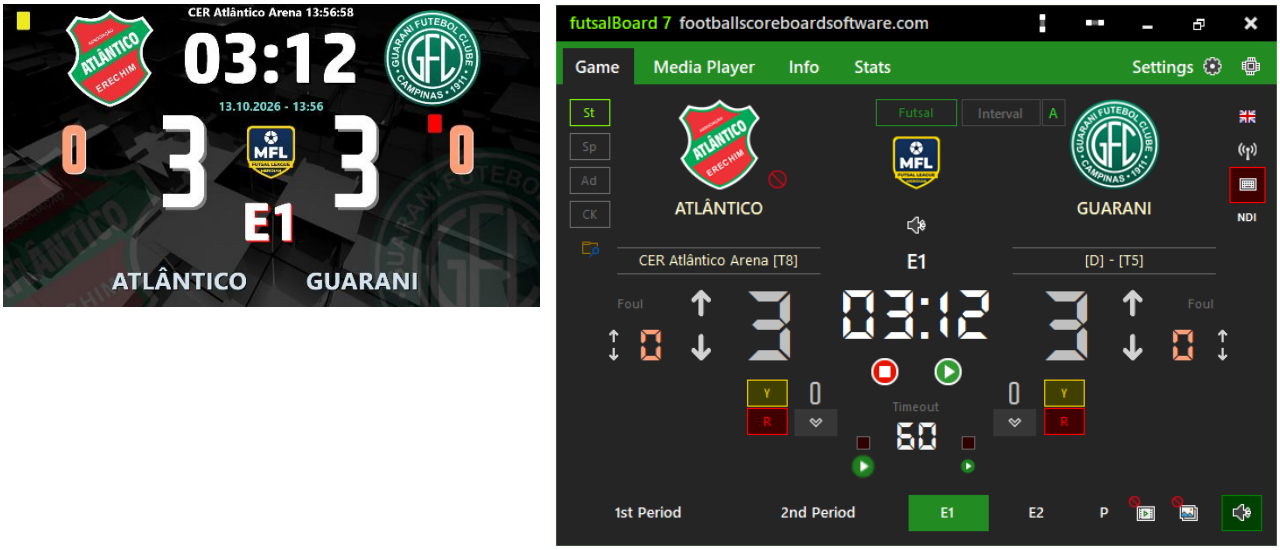



*Figure 29. Futsal extra time E1 at 03:12, 3-3.*

When extra time ends level, select P for the kicks from the penalty mark or the penalty shots (section 6.13).

## 6.10 Golden Goal and Overtime End

In floorball the overtime is a golden goal period (the rule "Overtime Golden Goal", chapter 7). While the overtime is selected, the tag and the board show "Golden Goal".

The first goal ends the match:

1. Click the up arrow of the scoring team (or use the keyboard or the remote score up).
2. The tag turns green "Final", the board shows "Final", the clock stops, and scoring is locked (section 6.14).

**Board Output** **Control Panel**

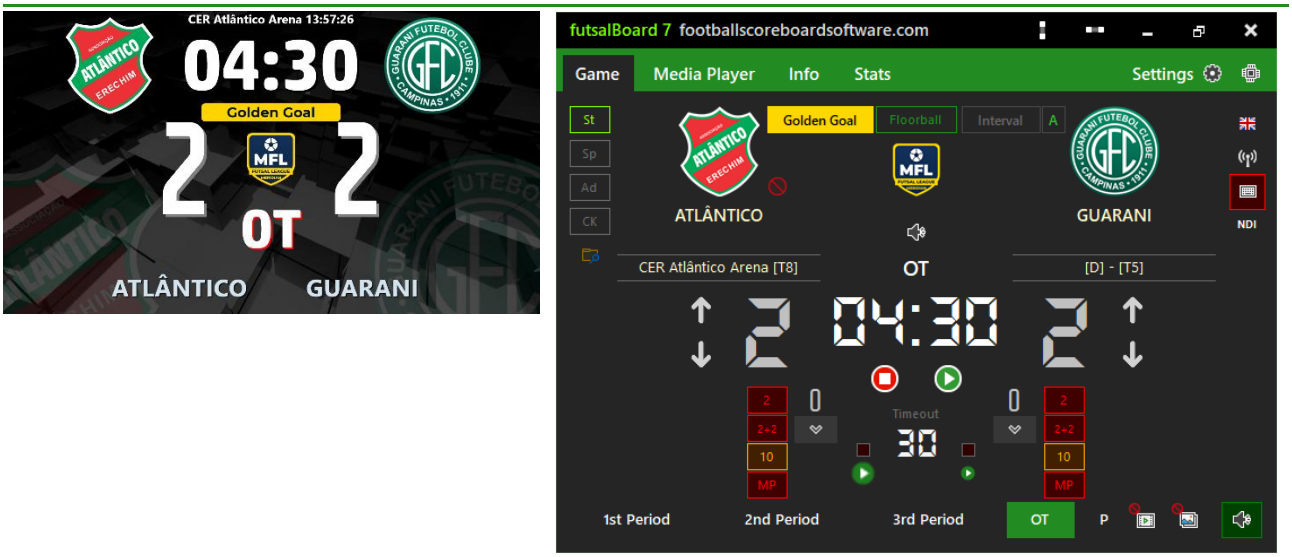



*Figure 30. Floorball overtime at 2-2: the gold "Golden Goal" tag on the panel and the "Golden Goal" plate on the board.*

A score typed in the score box asks first ("End Match with This Score?", section 6.4); a score set by the remote set_*_score command waits for you.

**Board Output** **Control Panel**

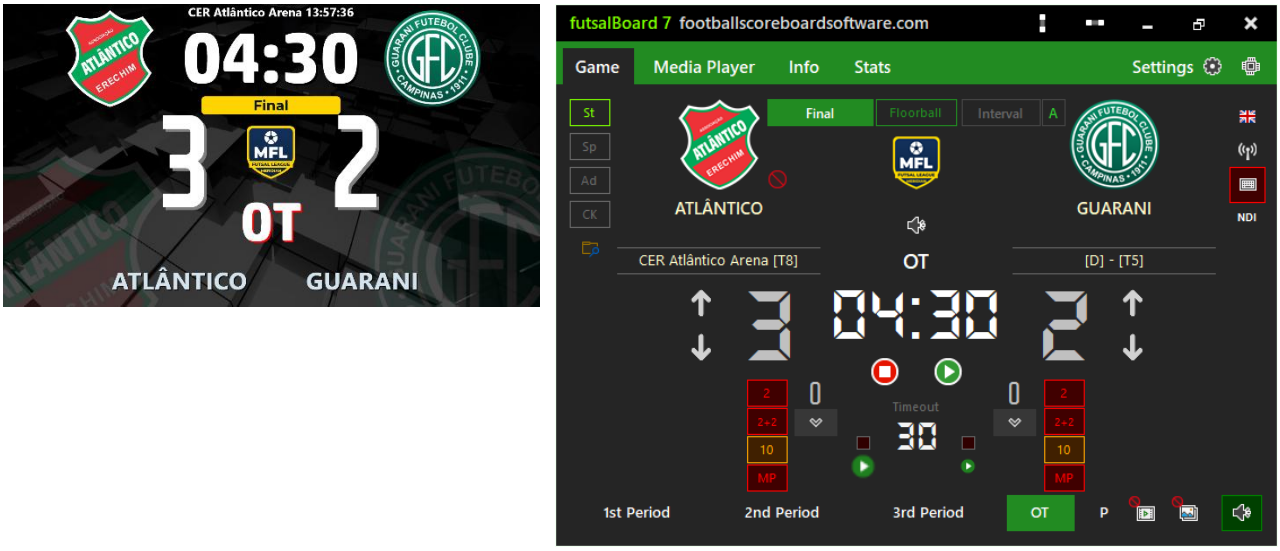



*Figure 31. After the golden goal: Atlântico wins 3-2. The green "Final" tag on the panel, "Final" on the board.*

The rule can be switched on for futsal and beach soccer too; their extra time is then a golden goal period as well. When the overtime ends without a goal, select P for the penalty shots.

## 6.11 Two-Goal Lead (Netball)

In netball a match that is level after the last period goes on until a team leads by two goals (the Decider "Two-Goal Lead"). The last period is the 2nd half of extra time, or the 4th quarter when extra time is set to 0 minutes.

1. The clock of the last period reaches its end with the score level.
2. The tag and the board show "Two-Goal Lead". The clock stays at 00:00: play goes on without time.
3. Score the goals as usual with the arrows.
4. When a team leads by two goals, the match ends: the tag and the board show "Final", the clock stops and scoring is locked.

**Board Output** **Control Panel**

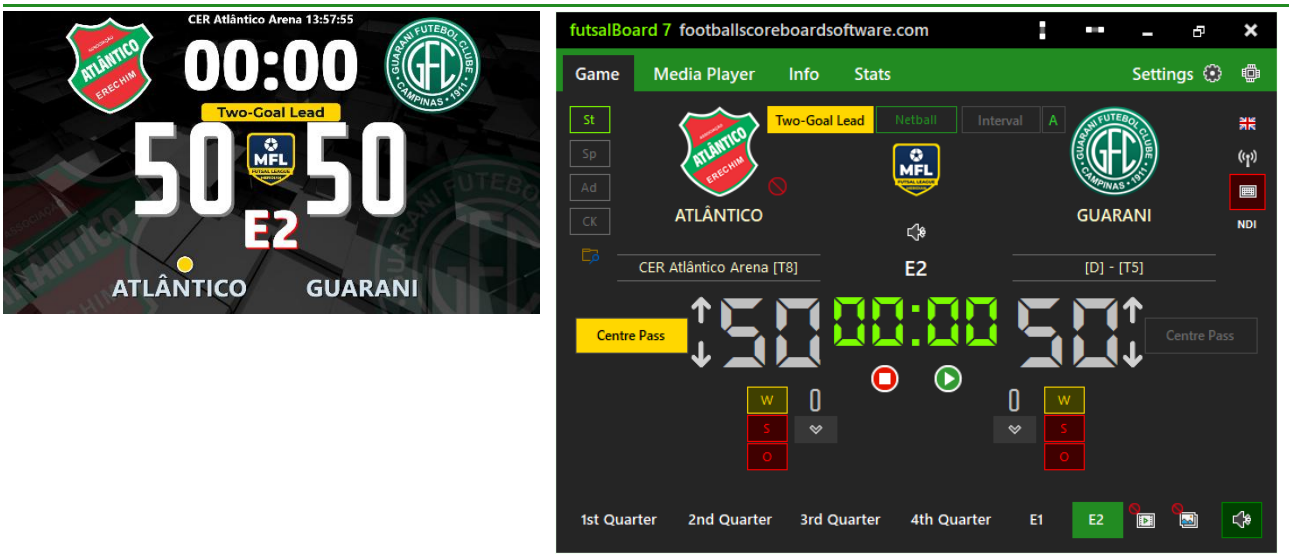



*Figure 32. Netball, extra time E2 ended 50-50: "Two-Goal Lead" on the panel and on the board. Atlântico takes the next centre pass.*

A typed score with a two-goal lead asks "End Match with This Score?" (section 6.4).

## 6.12 Centre Pass (Netball)

In netball two "Centre Pass" buttons are shown where the foul boxes are in futsal. The lit (gold) button marks the team that takes the next centre pass; the board shows a yellow dot beside its name.

- The centre pass changes to the other team after every goal, also after each goal of a typed or remote score.
- A correction down does not move it back.
- Click the button of a team to give it the centre pass, for example at the start of each quarter or after a correction.
- A new match gives the first centre pass to the home team.

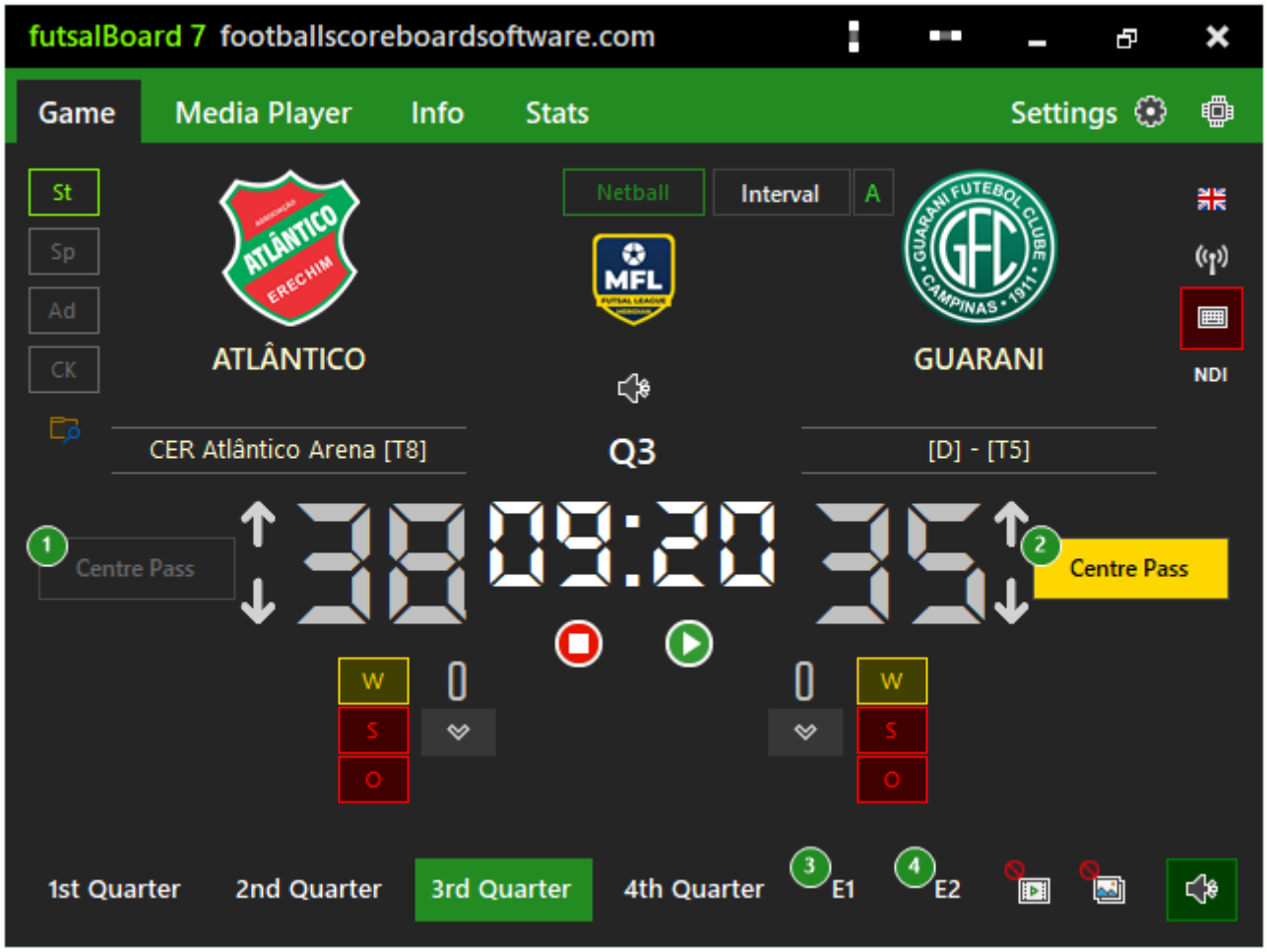



*Figure 33. Netball: the "Centre Pass" buttons and the extra time buttons E1 and E2.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Centre Pass | **Centre Pass** | Netball: lit (gold) when the home team takes the next centre pass. A click gives the centre pass to the home team. |
| 2 | Centre Pass | **Centre Pass** | Netball: lit (gold) when the guest team takes the next centre pass. A click gives the centre pass to the guest team. |
| 3 | E1 | **E1** | Netball: the first half of extra time (Extra Time - 1). |
| 4 | E2 | **E2** | Netball: the second half of extra time (Extra Time - 2). |

## 6.13 Penalty Shoot-Out

The P button at the right end of the period buttons opens the shoot-out: "Kicks from the Penalty Mark" in futsal and beach soccer, "Penalty Shots" in floorball. Netball has no shoot-out. The number of kicks per team is a rule ("Kicks per Team", 5 by default); after that it goes on one each until one team scores and the other does not.

1. Stop the clock and click P. The team names are replaced by the shoot-out marks, and a tick and a cross button appear for each team.
2. After each attempt click the tick (scored) or the cross (missed) of the team.

3. The panel shows every attempt, for example "[O] [O]  = 2" (O = scored, X = missed). When one team can no longer be caught, its marks turn green.
4. The board follows every attempt: ticks and crosses under the scores of the teams (the last five in sudden death).

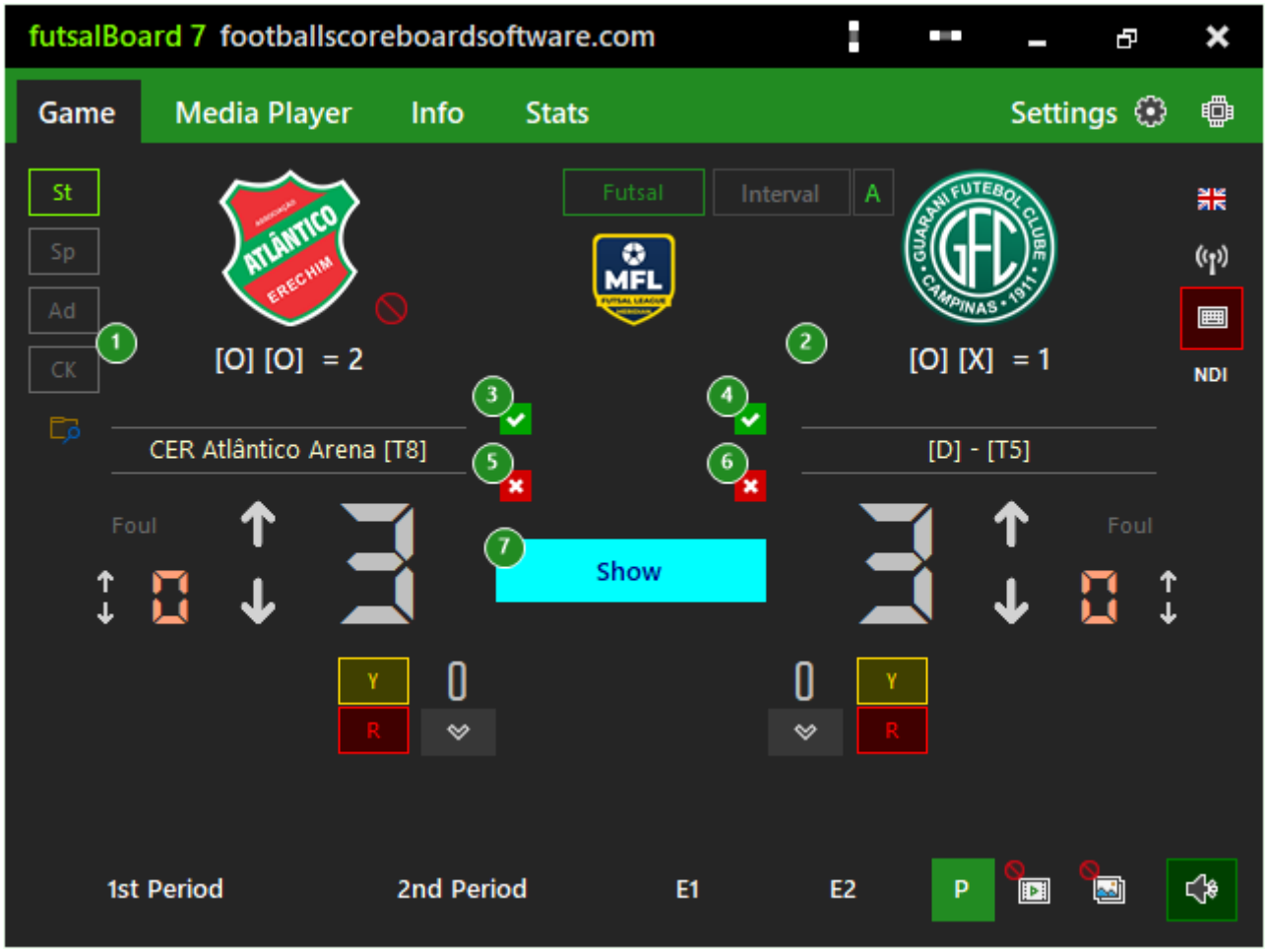



*Figure 34. The shoot-out after two rounds: Atlântico [O] [O] = 2, Guarani [O] [X] = 1.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | [O] [O] = 2 | **Home attempts** | Shoot-out: every attempt of the home team ([O] scored, [X] missed) and the goals; green when the team has won. Edit the marks to correct an attempt. |
| 2 | [O] [X] = 1 | **Guest attempts** | Shoot-out: every attempt of the guest team ([O] scored, [X] missed) and the goals; green when the team has won. Edit the marks to correct an attempt. |
| 3 | ✓ | **Home scored** | Shoot-out: the home team scored its attempt (a tick). |
| 4 | ✓ | **Guest scored** | Shoot-out: the guest team scored its attempt (a tick). |
| 5 | ✗ | **Home missed** | Shoot-out: the home team missed its attempt (a cross). |
| 6 | ✗ | **Guest missed** | Shoot-out: the guest team missed its attempt (a cross). |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 7 | Show | **Show** | Sends the shoot-out to the board. |




*Figure 35. The board during the shoot-out.*

- To correct an attempt, click in the marks box of the team and edit the marks, for example delete the last [X]. Only the marks [O] and [X] count.
- "Show" sends the shoot-out to the board again.
- The goals of the shoot-out do not change the match score.
- The remote and the HTTP API can remove the last attempt of a team (shootout_home undo) and clear the shoot-out (shootout_clear).

## 6.14 Final and Unlock Scoring

The "Final" tag appears only when a rule ends the match: the golden goal of an overtime (section 6.10) or the two-goal lead in netball (section 6.11), with the goal button or after Yes to "End Match with This Score?". When the time of the last period simply runs out, there is no "Final" tag and scoring is not locked.

While the match is over:

- every goal and every score correction is refused, on the panel, the keyboard and the remote; the "Final" tag flashes red;
- the tooltip of the tag names the winner.

To re-open the match, for example to correct a wrong goal:

1. Click the "Final" tag.
2. The program asks "Unlock Scoring?". Click Yes.
3. The tag disappears and the scores can be changed again. In netball the match goes back to "Two-Goal Lead".

The remote page has an Unlock Scoring button with its own question; the HTTP command unlock_scoring unlocks without a question. A new match also unlocks scoring.

## 6.15 New Match

There is no New Match button on the control panel. A new match starts:

- when you click the 1st period button while the match is in a later period (with a question);
- when you switch to another discipline (chapter 5.5);
- with the remote command new_match (no question; refused while the clock or a timeout runs).

When you go back to the 1st period, the program asks:

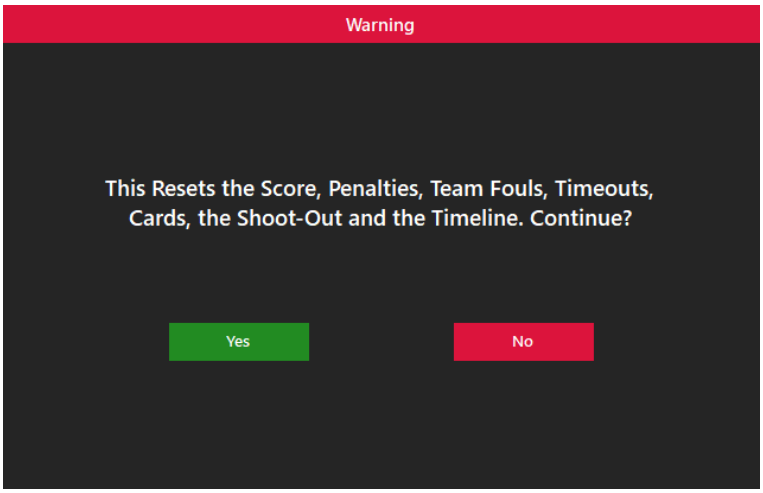



*Figure 36. The question when going back to the 1st period.*

Click Yes to start the new match, No to stay in the current period.

A new match sets both scores to 0 and clears the penalties and sent-off timers, the team fouls, the timeouts, the cards and the red card marks, the shoot-out, a running interval, the end of the match (scoring is unlocked) and the centre pass (home first). It also clears the timeline of the Stats tab, the per-match fields of the info screens and their period scores (chapter 10). The 1st period is selected and the clock is set to its start.

A new match keeps the team names, the players, the logos, the two text lines, the discipline and its rules, and the display mode.

## 6.16 A Typical Match

1. Check the discipline on the discipline button and the rules (chapter 7). Change the discipline now: a switch during the match starts a new one.
2. Enter the team names, logos and the two text lines (chapter 8). Choose the display mode (chapter 9).
3. Start a new match: if the panel is still in a later period, click the 1st period button and answer Yes. The scores go back to 0.
4. At the kick-off click Play. Pause the clock at every stoppage the rules require.
5. Give each goal with the up arrow of the scoring team; use the down arrow or the score box for a correction.
6. In futsal count the team fouls with the small foul arrows. Give cards with the number box and the card buttons; watch the timers in the penalty lists.
7. Give timeouts with the play buttons below the timeout lights while the clock is stopped.
8. At the end of a period the clock stops and the interval starts by itself. Before the next period starts, click its period button, then Play.
9. If the match is level after the regular time, play the extra time with its period buttons, and the shoot-out with P if needed.
10. After the match show the result from the Info tab if you like (chapter 10). Before the next match go back to the 1st period and set the scores to 0.

## 6.17 Remote and Keyboard Equivalents

Most panel actions are also available on the remote page (chapter 13) and through the HTTP API (chapter 14, Appendix C). Three global keys work after you switch them on in the Keyboard Hook Manager (Appendix A).

| Panel Action | Default Key | HTTP Command |
|---|---|---|
| Play / Pause | Esc | click playpause, set_chronometer play / pause |
| Stop | - | click stop, set_chronometer stop |
| Set the clock | - | set_chronometer 01:23 (also stops it) |
| Home / guest goal | F9 / F12 | set_home_score_up / set_guest_score_up |
| Home / guest goal back | - | set_home_score_down / set_guest_score_down |
| Set a score | - | set_home_score / set_guest_score (never ends the match) |
| Team foul +1 / −1 / set | - | set_home_fault_up / _down, set_home_fault (guest the same) |
| Foul reset of the period | - | foul_reset |
| Timeout | - | timeout_home / timeout_guest (refused while the clock runs) |
| Card or penalty | - | card_home / card_guest, value number;kind (for example 7;R) |
| Cancel a penalty | - | cancel_home_penalty / cancel_guest_penalty, value = row |
| Period | - | click period_1 ... period_6, click shootout |
| Shoot-out attempt | - | shootout_home / shootout_guest 1, 0 or undo; shootout_clear |
| Interval | - | interval start / stop / toggle / minutes |
| Start Interval Automatically | - | auto_interval on / off / toggle |
| Centre pass | - | centre_pass home / guest / toggle |
| Unlock scoring | - | unlock_scoring |
| New match | - | new_match |
| Horn / sounds | - | horn, volume 1 / 0 |

# 7. Time and Rules Settings

The rules of each discipline are set in one dialog, "Period & Penalty Settings": the periods and their lengths, the intervals, the cards and timed penalties, the clock direction, the timeouts, the team fouls and how a level match is decided. Each discipline keeps its own rules, and every rule can be changed. Appendix B lists the factory values.

## 7.1 The Rules Dialog

Open the dialog in one of two ways:

- Game tab > the discipline button in the top row (for example "Futsal"). It is available also while the clock runs.
- Settings > Screen Properties > the row "Periods & Penalty Settings (<discipline>)": select the row and click the small clock button at the right end of its value (section 7.3).

The dialog opens with the rules of the active discipline. Nothing changes until you click "Save & Apply".

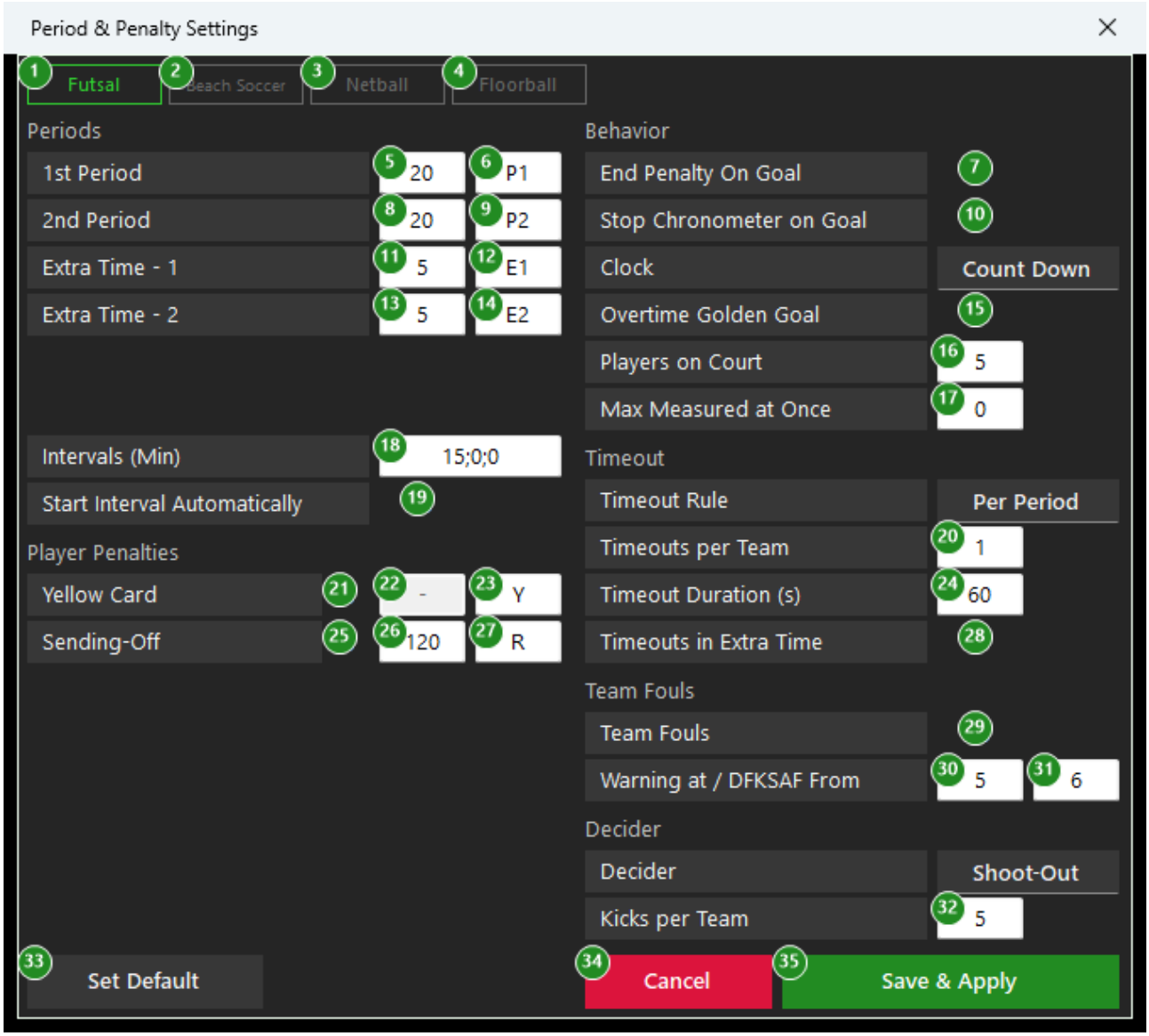
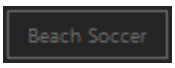
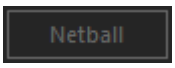
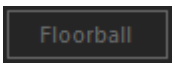
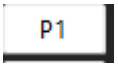
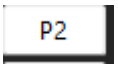
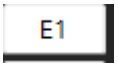



*Figure 37. The rules dialog with the factory rules of futsal.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Futsal** | Shows the rules of futsal. The discipline shown is green; Save & Apply makes it the active one. |
| 2 |  | **Beach Soccer** | Shows the rules of beach soccer. The discipline shown is green; Save & Apply makes it the active one. |
| 3 |  | **Netball** | Shows the rules of netball. The discipline shown is green; Save & Apply makes it the active one. |
| 4 |  | **Floorball** | Shows the rules of floorball. The discipline shown is green; Save & Apply makes it the active one. |
| 5 |  | **1st Period: minutes** | The length of the 1st period in minutes (0-99). |
| 6 |  | **1st Period: label** | The short label of the 1st period on the board and the panel. |
| 7 |  | **End Penalty On Goal** | On = a goal of the team with more players can end a reduction of the other team. |
| 8 |  | **2nd Period: minutes** | The length of the 2nd period in minutes (0-99). |
| 9 |  | **2nd Period: label** | The short label of the 2nd period on the board and the panel. |
| 10 |  | **Stop Chronometer on Goal** | On = a goal stops the running clock. |
| 11 |  | **Extra Time - 1: minutes** | The length of the first extra time half; 0 = not played (no button). |
| 12 |  | **Extra Time - 1: label** | The short label of the first extra time half (E1). |
| 13 |  | **Extra Time - 2: minutes** | The length of the second extra time half; 0 = not played (no button). |
| 14 |  | **Extra Time - 2: label** | The short label of the second extra time half (E2). |
| 15 |  | **Overtime Golden Goal** | On = the first goal in extra time ends the match. |
| 16 |  | **Players on Court** | The players of a team at full strength (5 in futsal). |
| 17 |  | **Max Measured at Once** | How many timed penalties of a team run at once; 0 = no limit. |
| 18 |  | **Intervals (Min)** | The minutes of the interval after each period, separated by ; (0 = no interval, at most 60). |
| 19 |  | **Start Interval Automatically** | On = the interval starts by itself when a period clock ends. One setting for all disciplines, the same as the panel A button. |
| 20 |  | **Timeouts per Team** | Timeouts of a team per period or per match (0-3). |
| 21 |  | **Yellow Card: on** | Switches the yellow card on or off (its button on the panel). |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 22 | - | **Yellow Card: seconds** | No timer for a yellow card (-). |
| 23 | Y | **Yellow Card: button** | The text of the yellow card button (Y). |
| 24 | 60 | **Timeout Duration (s)** | The length of a timeout in seconds. |
| 25 | ☑ | **Sending-Off: on** | Switches the sending-off on or off (its button on the panel). |
| 26 | 120 | **Sending-Off: seconds** | The length of the numerical reduction in seconds (120). |
| 27 | R | **Sending-Off: button** | The text of the sending-off button (R). |
| 28 | ☐ | **Timeouts in Extra Time** | On = timeouts are allowed in extra time. |
| 29 | ☑ | **Team Fouls** | On = the team fouls are counted (foul boxes on the panel, fouls on the board). |
| 30 | 5 | **Warning at** | The team foul that shows the warning (5). |
| 31 | 6 | **DFKSAF From** | The first team foul that gives a direct free kick from the second penalty mark (6). |
| 32 | 5 | **Kicks per Team** | The kicks from the penalty mark per team before sudden death (with the Decider Shoot-Out). |
| 33 | Set Default | **Set Default** | Loads the factory rules of the discipline shown into the rows (saved with Save & Apply). |
| 34 | Cancel | **Cancel** | Closes without saving; asks "Discard Changes?" when something was changed. Esc does the same. |
| 35 | Save & Apply | **Save & Apply** | Saves the rules of all disciplines, makes the discipline shown the active one and applies the rules (a discipline change starts a new match). |

The dialog has these parts:

- The four discipline buttons at the top. The discipline shown is green. A click shows the saved rules of another discipline; what you typed for the previous one is kept while the dialog is open.
- Left column: "Periods" (one row per period: name, minutes, board label), "Intervals (Min)", "Start Interval Automatically" and "Player Penalties" (one row per card or penalty: name, on / off, seconds, button text).
- Right column: "Behavior", "Timeout", "Team Fouls" and "Decider".
- "Set Default" loads the factory rules of the discipline shown into the rows. They are saved only with "Save & Apply".
- "Cancel" closes the dialog without saving. If you changed something, the program asks "Discard Changes?". Esc does the same (the first Esc closes an open list).
- "Save & Apply" saves the rules of all four disciplines as they are in the dialog, makes the discipline shown the active one and applies the rules to the match (section 7.4).

When the discipline shown is not the active one, "Save & Apply" switches the discipline (chapter 5.5): it is refused while the clock runs ("Stop the Clock Before Changing the Discipline.") and asks before a match in progress is reset.

The rows show what the discipline has: futsal, beach soccer and floorball have four period rows, netball six; the penalty rows list the cards and penalties of the discipline (two in futsal, three in beach soccer and netball, five in floorball).

Chapter 5 shows the dialog with the factory rules of beach soccer, netball and floorball.

## 7.2 Every Setting Explained

A number box that does not hold a number is set to 0 when you leave it. "Save & Apply" keeps every value in its range (column Range) without a message: a larger number is saved as the maximum.

| Setting | Range | What It Does |
|---|---|---|
| Period rows: minutes | 0-99 | The length of the period. 0 = the period is not played: its button is hidden on the panel. The rows that are extra time (E1, E2, ET, OT) are fixed per discipline. |
| Period rows: label | Text | The short label of the period: on the board and above the clock on the panel (P1, Q3, E1, OT ...), and on the period button when the full name does not fit. |
| "Intervals (Min)" | 0-60 each | The minutes of the interval after each period, in the order of the period rows, separated by ";" (a comma, a slash or a space also work). Example futsal "15;0;0": 15 minutes after the 1st period, none after the 2nd period and none between the extra time halves. 0 = no interval. A missing value takes the factory value. Tooltip: "Minutes After Each Period, Separated by ; (0 = No Interval)". |
| "Start Interval Automatically" | On / off | The interval starts by itself when the clock of a period reaches its end (chapter 6.8). One setting for all four disciplines; the "A" button of the control panel and the remote change the same setting. |
| Player penalty rows: check box | On / off | Switches the card or penalty on. Only kinds that are on have a button on the panel (at most four per team, in the order of the rows) and are accepted by the remote. |
| Player penalty rows: seconds | 1-3600 | The length of a timed penalty, for example 120 for a sending-off. "-" = no timer (a yellow card, a caution) or the rest of the match (match penalty). A new length applies to the next penalty given. |
| Player penalty rows: button text | Text | The text of the panel button (Y, R, 2+2 ...). The remote and the HTTP command card_home / card_guest accept it as the kind. |
| "End Penalty On Goal" | On / off | A goal may end a timed penalty of the team that conceded (chapter 6.7). Which kinds can end on a goal is fixed by the discipline: the sending-off, |

| Setting | Range | What It Does |
|---|---|---|
| | | the floorball bench penalty and the major bench penalty (one part). Off = no penalty ever ends on a goal. |
| "Stop Chronometer on Goal" | On / off | A goal stops the running clock. The end of a match by a rule always stops it. |
| "Clock" | "Count Down" / "Count Up" | Count down from the period length to 00:00, or count up from 00:00 to the period length. |
| "Overtime Golden Goal" | On / off | The extra periods are golden goal periods: the tag and the board show "Golden Goal", and the first goal ends the match (chapter 6.10). |
| "Players on Court" | 1-11 | The number of players of a team at full strength. The strength shown on the remote and the info screens (for example 5v4) counts down from it. |
| "Max Measured at Once" | 0-11 | How many timed penalties of a team run at the same time; the others wait in the queue. 0 = no limit (tooltip "0 = No Limit"). |
| "Timeout Rule" | "None" / "Per Period" / "Per Match" | Whether the teams have timeouts and whether the allowance starts again in every period. "None" hides the timeout area of the panel. |
| "Timeouts per Team" | 0-3 | The timeouts of a team per period or per match; one light per timeout on the panel. |
| "Timeout Duration (s)" | 0-600 | The length of a timeout in seconds. |
| "Timeouts in Extra Time" | On / off | Off = no timeout during extra time. Never during the shoot-out. |
| "Team Fouls" | On / off | Counts the accumulated team fouls per period: the foul boxes on the panel and the fouls on the board (chapter 6.5). |
| "Warning at / DFKSAF From" | 1-99 each | The foul that shows the warning (yellow) and the first foul that gives a direct free kick from the second penalty mark (red). |
| "Decider" | "None" / "Shoot-Out" / "Two-Goal Lead" | How a match that is level after the last period is decided. "Shoot-Out" shows the P button (chapter 6.13); "Two-Goal Lead" lets play go on until a team leads by two goals (chapter 6.11). |
| "Kicks per Team" | 0-20 | The kicks (penalty shots) per team before sudden death. 0 hides the P button. Only with "Shoot-Out". |

The boxes that do not apply are greyed out: the timeout boxes with "Timeout Rule" "None", the foul limits with "Team Fouls" off, "Kicks per Team" without "Shoot-Out".

Rules that are part of the discipline and have no setting:

- Futsal and beach soccer: a second yellow card for the same shirt number becomes a sending-off; a card for a player already sent off starts no second reduction.

- Futsal: the team fouls of the 2nd period continue in extra time.
- Floorball: only one penalty per player is measured at once; a personal penalty comes with its bench penalty; after overtime every penalty except a match penalty ends.
- Netball: the centre pass alternates after each goal.
- The half-time is the interval in the middle of an even number of regular periods; the other intervals are named "Interval".

## 7.3 The Settings Period Row

Settings > Screen Properties has a row "Periods & Penalty Settings (<discipline>)", for example "Periods & Penalty Settings (Futsal)". Its value holds the minutes of the first four periods of the active discipline, separated by ";": "20;20;5;5" in futsal (1st period, 2nd period, E1, E2).

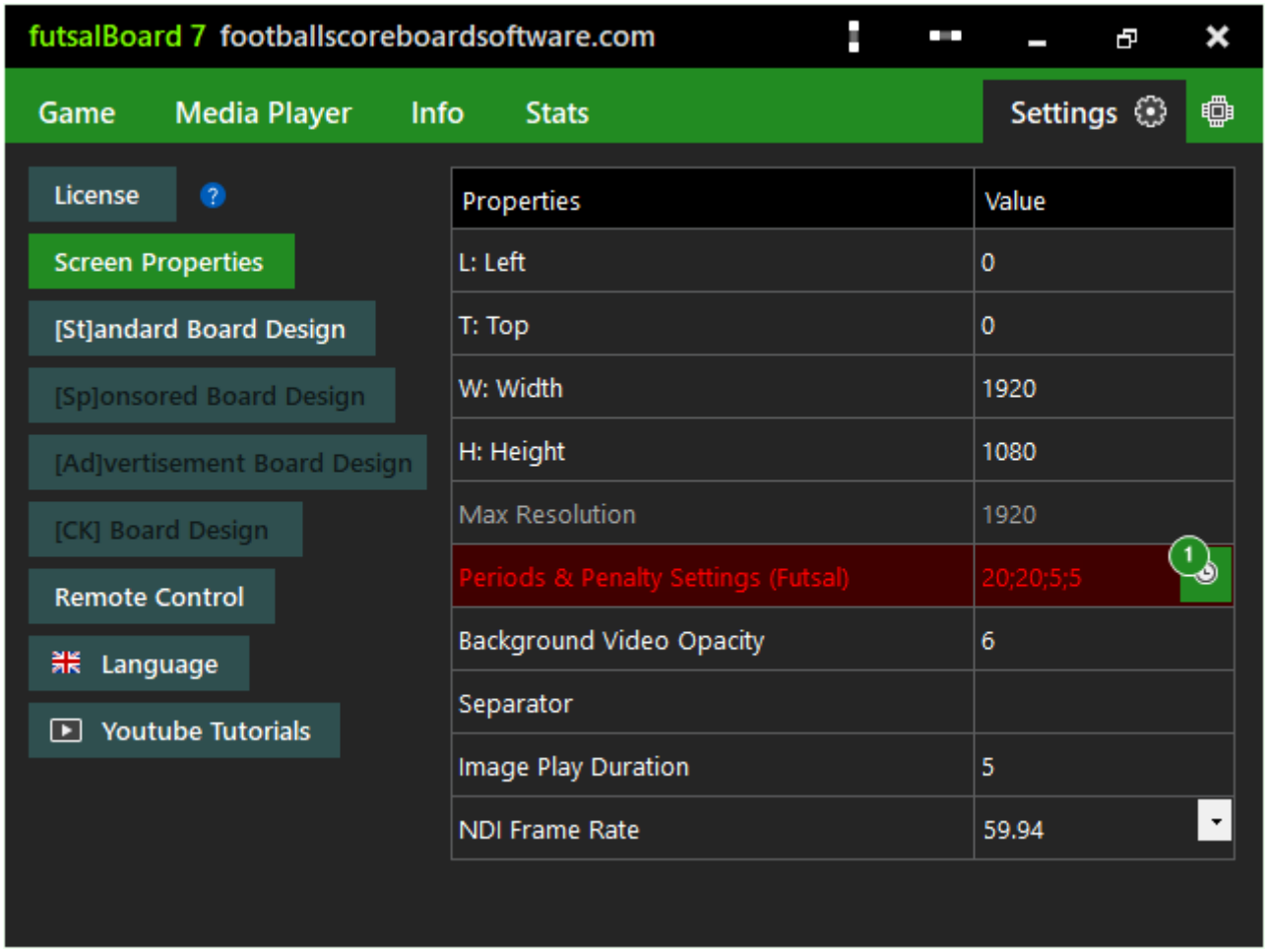



*Figure 38. Settings > Screen Properties with the period row of futsal selected and its rules button.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Rules dialog** | Opens the rules dialog "Period & Penalty Settings" of the active discipline. Shown when the period row is selected. |

- To change the minutes, click the value, type the four numbers and press Enter. The new minutes are saved at once in the rules of the active discipline, the same rules the dialog edits, and the match takes them as described in section 7.4.
- The value must be four whole numbers from 0 to 99, and the first one must not be 0. Otherwise nothing is saved and the row shows the saved value again.

- In netball the row holds the four quarters; the extra time halves are set in the dialog.
- The small clock button at the right end of the selected row opens the rules dialog. When you close the dialog, the row shows the new values.
- The row always shows the active discipline. It follows a discipline switch made in the rules dialog.

## 7.4 Changing Rules During a Match

"Save & Apply" with the active discipline (or a change in the settings period row) keeps the match: the score, the period, the clock, the penalties, the team fouls, the timeouts used, the cards and the shoot-out stay.

| Change | Takes Effect |
|---|---|
| Period minutes | The period buttons are rebuilt at once. When the clock of the current period has not been started yet (or was set back with Stop), it is set to the new length at once; otherwise the new length applies the next time the period is selected. |
| Period labels | At once, on the buttons, the panel and the board. |
| Intervals, "Start Interval Automatically" | At the next end of a period. A running interval keeps its length. |
| Penalty lengths, button texts, on / off | For the next card or penalty. Penalties already running keep their time. A kind switched off loses its button. |
| "End Penalty On Goal", "Stop Chronometer on Goal" | From the next goal. |
| "Clock" | When a period is selected (or the clock is set back with Stop). |
| Timeouts | At once: the lights and the timeouts left follow the new allowance. |
| Team fouls, foul limits | At once: the foul boxes appear or disappear and their colours follow the new limits. |
| "Overtime Golden Goal", "Decider", "Kicks per Team" | At once. |

A change of the discipline starts a new match (chapter 5.5).

> **Note:** Do not set the minutes of the period in play to 0 during a match. Its button disappears and the panel goes back to the 1st period; from a later period this starts a new match without the usual question.

# 8. Teams, Players, Photos and Logos

The teams of the match are set in two places: the names, the two text lines and the logos on the Game tab, and the player lists on the Info tab (Info > "Classic Screens" > "Home Team" and "Guest Team"). The player lists feed the info screens (chapter 10), Show Pictures (chapter 12) and the classic team screens.

## 8.1 Team Names and Text Lines

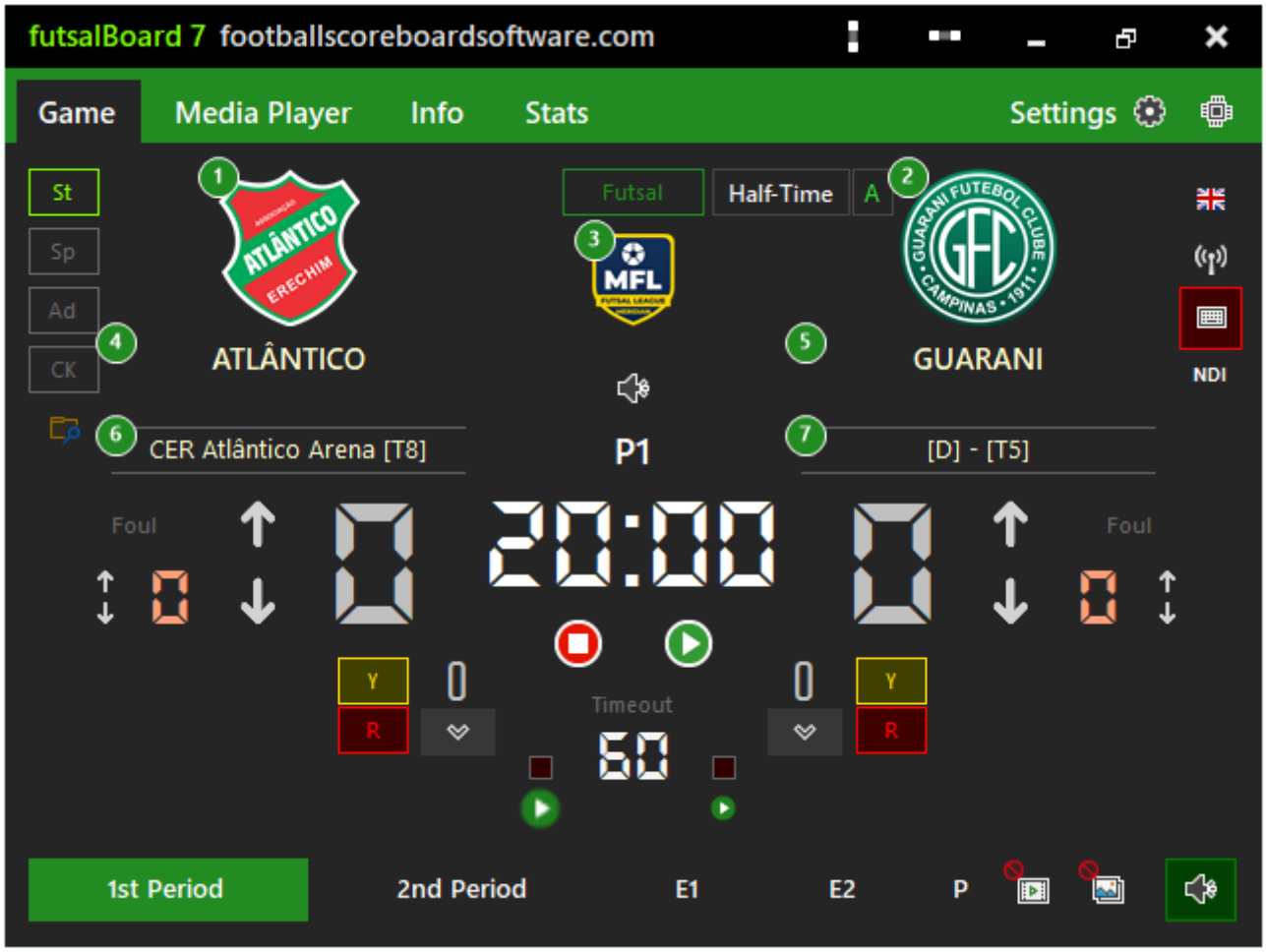



*Figure 39. The team names, the two text lines and the three logo slots on the Game tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Home logo** | Click to choose the logo of the home team (chapter 8). An erase button appears when the mouse is on the logo. |
| 2 | | **Guest logo** | Click to choose the logo of the guest team (chapter 8). An erase button appears when the mouse is on the logo. |
| 3 | | **Board logo** | Click to choose the logo in the middle of the board, for example the competition logo. An erase button appears when the mouse is on the logo. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 4 | ATLÂNTICO | **Home team name** | The name of the home team on one or two lines (Enter starts the second line). The box turns black when it has more than two lines. |
| 5 | GUARANI | **Guest team name** | The name of the guest team on one or two lines (Enter starts the second line). The box turns black when it has more than two lines. |
| 6 | CER Atlântico Arena [T8] | **Text line 1** | The first text line of the board, for example the venue. Codes: [D] the date, [T] the time, [T8] and [T5] the first 8 or 5 characters of the time. |
| 7 | [D] - [T5] | **Text line 2** | The second text line of the board, with the same codes as line 1, for example [D] - [T5]. |

| Field | What It Holds |
|---|---|
| Team name (one per team) | The name of the team on one or two lines; press Enter for the second line. With more than two lines the box turns black as a warning: the program uses the first line and joins the rest to the second line. The X next to the box empties it. |
| Text line 1 and 2 (under the names) | Free text for the board, for example the venue and the date. The codes [D] (date), [T] (time), [T8] (the first 8 characters of the time, hh:mm:ss) and [T5] (hh:mm) are replaced by the live values. The factory lines are "CER Atlântico Arena [T8]" and "[D] - [T5]". |

- The boards fit a long name into its box: the text gets smaller step by step, is then condensed by up to 15 %, and only then cut with an ellipsis. Digits are never squeezed.
- Tables and sentences (Period Result, Match Result, Standings, "{0} Plays Short-Handed" ...) join the two lines of a name with a space.
- The first line of text line 1 is also the subtitle of every info screen on the St board (chapter 10.2).
- The remote control and the HTTP API set the names with set_home_team and set_guest_team, and the lines with line_text_1 and line_text_2; an underscore (_) in the value starts a new line (chapter 14).

Team colours: Info > "Classic Screens" has two colour boxes per team, next to "Home Team" and "Guest Team" (section 8.6). A click opens the colour picker. The colours are used by the Chroma Key scorebug and by the classic team list ("Show"); the Standard board takes its colours from the design (chapter 11).

## 8.2 Logos

The Game tab has three logo slots: the home team logo (left), the guest team logo (right) and the board logo (middle).

1. Click a logo slot. The Windows file dialog opens in C:\futsalBoard7\media\downloads\images.
2. Choose a picture (bmp, gif, jpeg, jpg or png). The board is redrawn at once.
3. To remove a logo, click the slot so that it has the focus, then click the small X that appears next to it.

| Logo | Where It Appears |
|---|---|
| Home and guest team logo | The scoreboards (St, Sp, Ad) and the CK scorebug where the design has a place for it; the large faded team logos behind the Standard board; the info screens with a team (Goal, Card, Fouls, Lineup, Intro, Period and Match Result ...); Banner; Announce (the team chosen in its editor). |
| Board logo | The logo of the board, for example the competition or the venue, where the design has a place for it. The factory logo is the fictional Meridian Futsal League mark. |

- The program keeps the path of the file, not a copy. Keep the logo files where they are.
- In DEMO mode the team logos of both teams cannot be changed or removed: the program shows "License Required !" and "This action is not allowed in the DEMO version." (chapter 3).
- Clicking a logo slot opens the Windows file dialog, which is not part of the program; this guide shows no picture of it.

## 8.3 Players Editor

Open Info > "Classic Screens" > "Home Team" (or "Guest Team"). The title shows Home Team or Guest Team.

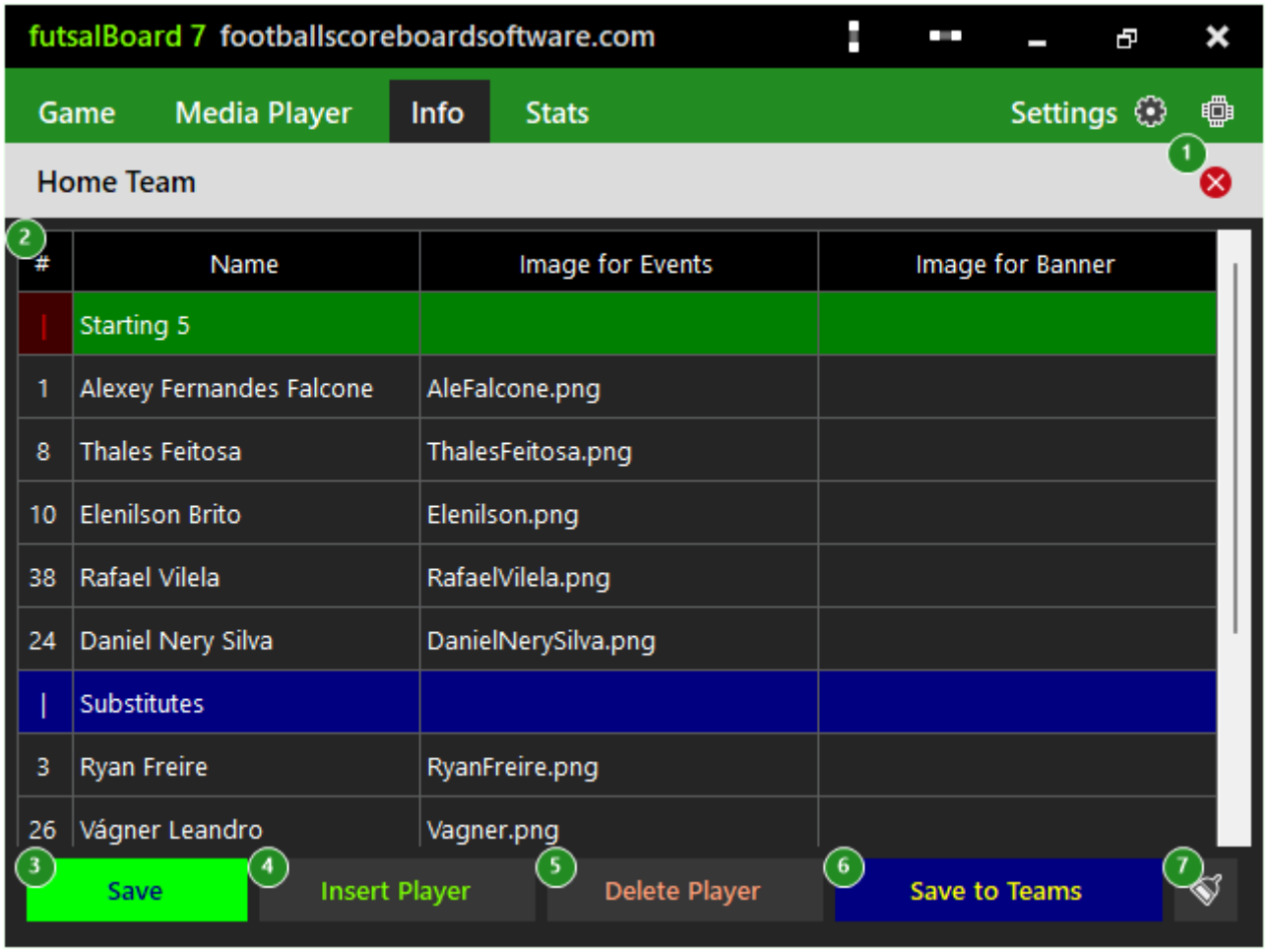
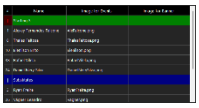
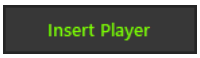
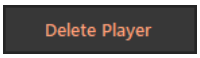



*Figure 40. The Home Team player list with the demo players of Atlântico.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the list; Esc does the same. Changes that were not saved are lost. |
| 2 |  | **Player list** | The players of the team in four groups (Starting 5, Substitutes, Other Players, Trainer) with #, Name, Image for Events and Image for Banner. Type into a cell to edit it; a picture cell gets a picture button to choose a file; drag a row by its # or Name cell to move it. |
| 3 |  | **Save** | Saves the list (common\data\playersHome.xml or playersGuest.xml). Lit green while there are unsaved changes. Empty rows are dropped. |
| 4 |  | **Insert Player** | Adds an empty row at the end of the group of the selected row. The Trainer group takes one row only. |
| 5 |  | **Delete Player** | Removes the selected player. Group header rows cannot be deleted. |
| 6 |  | **Save to Teams** | Keeps a copy of the list in the team database under a name ("Please Enter a Name"). |
| 7 |  | **Clear All** | Empties the list. It is written only when you click Save. |

The list has four groups, each with a coloured header row:

| Group | What It Holds |
|---|---|
| "Starting 5" (green) | The players who start, in the order of the Starting Lineup screen. |
| "Substitutes" (navy) | The other players of the squad. |
| "Other Players" (crimson) | Further people, for example players not in the squad. |
| "Trainer" (purple) | One person: the coach of the Starting Lineup screen. |

| Column | What It Holds |
|---|---|
| # | The shirt number. The info screens find a player by this number or by the name. |
| "Name" | The player's name. |
| "Image for Events" | The photo of the info screens (Goal, Card, Penalty Kick, Substitution, Starting Lineup, Player Intro, Player of the Match) and of the classic screens. |
| "Image for Banner" | The picture of Show Pictures (chapter 12.4); also a spare photo for the info screens when Image for Events is empty. |

| Button | What It Does |
|---|---|
| "Save" | Saves the list (common\data\playersHome.xml or playersGuest.xml). It is lit green while there are unsaved changes. Empty rows are dropped. |
| "Insert Player" | Adds an empty row at the end of the group of the selected row. The Trainer group takes one row only. |
| "Delete Player" | Removes the selected player. Group header rows cannot be deleted. |
| "Save to Teams" | Keeps a copy of the list in the team database under a name ("Please Enter a Name"); then "The data has been successfully saved." (section 8.5). |
| "Clear All" (icon at the right) | Empties the list. It is written only when you click Save. |
| X (title bar) or Esc | Closes the list. Changes that were not saved are lost. |

- Click a picture cell, then the small picture button in it, to choose a file. Image for Events takes pictures (bmp, gif, jpeg, jpg, png); Image for Banner also takes videos and other media files.
- A file name in red means the file is missing.
- Select a picture cell with a file: a preview appears below the row; its folder button opens the folder of the file in Windows Explorer.
- Drag a row by its # or Name cell to move it, also into another group. Rows of the Trainer group cannot be dragged, and nothing can be dropped into it.
- Type into a cell to edit it (F2 also starts editing).

> **Note:** The order of the Starting 5 group is the order of the Starting Lineup screen. The screen shows the first players of this group up to the number of players on court of the discipline: 5 in futsal and beach soccer, 6 in floorball, 7 in netball. When the group is empty it takes the first players of the list instead.

## 8.4 Photos

- The info screens use the Image for Events photo of a player; when it is empty or the file is missing, they use Image for Banner. A player without a photo is shown without a picture; the rest of the screen stays.
- Show Pictures uses Image for Banner only. The factory players have no Image for Banner pictures, so their thumbnails in Show Pictures are red (chapter 12.4).
- The demo photos of Atlântico are in C:\futsalBoard7\media\images\players\atlantico. The Guarani players of the demo have no photos.
- The list stores the full path of each file. If you move the photos, choose them again.

How the info screens find a player (fields "Scorer (Number or Name)", "Player (Number or Name)" and the like):

| You Type | The Screen Shows |
|---|---|
| A shirt number (7 or #7) | The player with that number in the team's list, with name and photo. |
| A name, or at least three letters of it | The first player whose name matches. |
| A number and a name (7 Silva) that are not in the list | The number and the name as typed, without photo. |
| Anything else that is not in the list | The text as typed, without photo. |

For an own goal (Goal screen, Kind of Goal "Own Goal") the scorer is looked up in the list of the other team.

## 8.5 Team Database

The team database keeps whole player lists, for example the squads of a league. Open Info > "Classic Screens" > "Team Database".

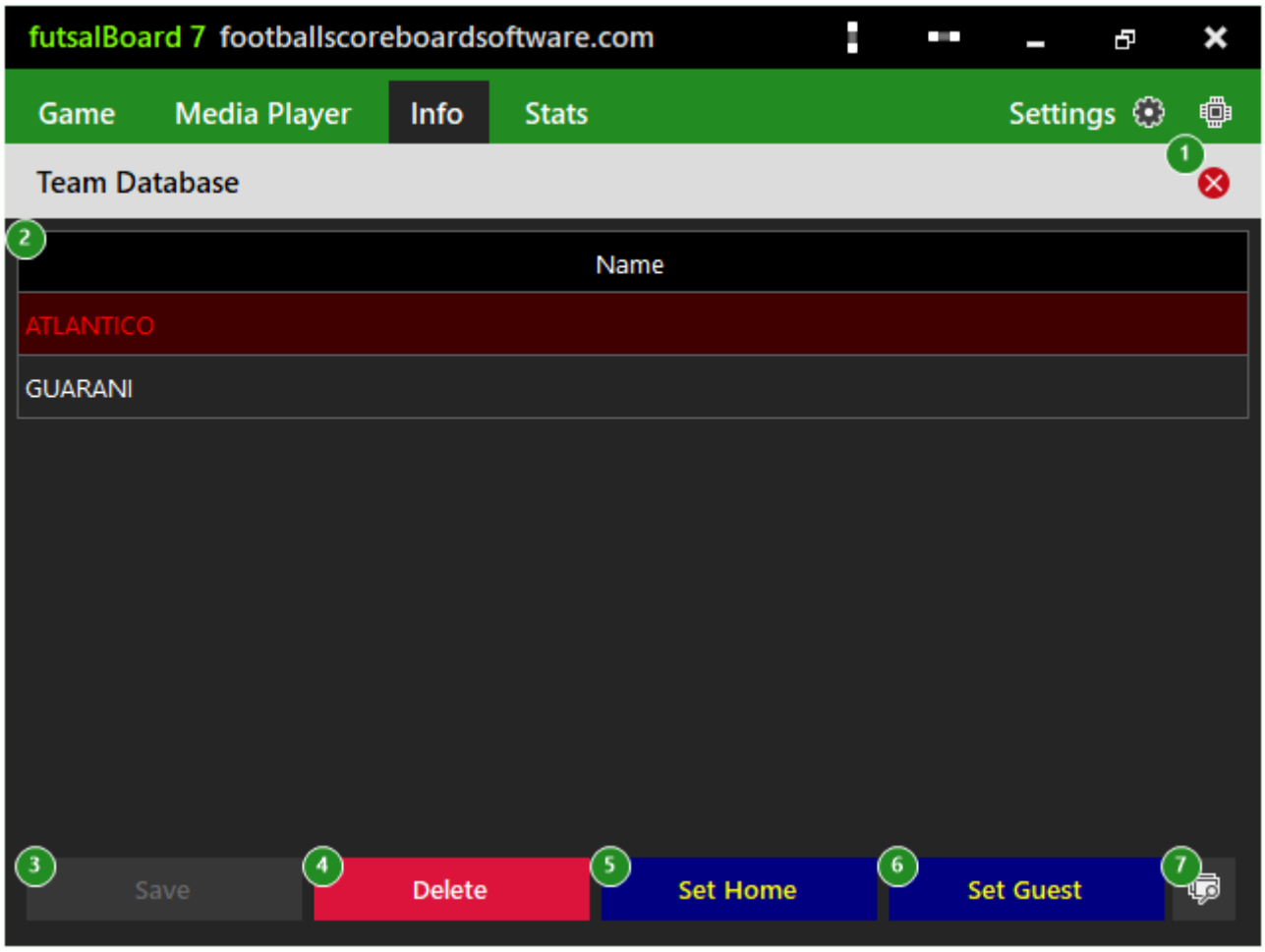
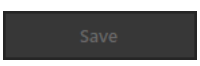
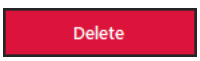



*Figure 41. The team database with the two demo teams.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the team database; Esc does the same. |
| 2 |  | **Teams** | The teams of the team database, sorted by name. Type into a cell to rename a team, then click Save. |
| 3 |   | **Save** | Saves the new names of renamed teams. Lit green while a change is not saved. |
| 4 |   | **Delete** | Deletes the selected team and its player file after the question "Team player data will be deleted! Are you sure?". |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 5 |  | **Set Home** | Copies the player list of the selected team into the home player list, after a question. The team name and logo do not change. |
| 6 |  | **Set Guest** | Copies the player list of the selected team into the guest player list, after a question. The team name and logo do not change. |
| 7 |  | **Show** | Opens the player list of the selected team in the players editor; Save there saves into the team database. |

| Button | What It Does |
|---|---|
| "Save" | Saves the names after you renamed a team in the list (lit green while a change is not saved). |
| "Delete" | Deletes the selected team after the question "Team player data will be deleted! Are you sure?". |
| "Set Home", "Set Guest" | Copies the player list of the selected team into the home or guest player list, after the question "The selected team will be assigned to the match squad! Are you sure?". The team name and the logo on the Game tab do not change. |
| "Show" (icon at the right) | Opens the player list of the selected team in the players editor. Save there saves into the team database, not into the match list. |
| X or Esc | Closes the team database. |

- A team is added with "Save to Teams" in the players editor (section 8.3).
- The files: common\data\dataTeams.xml (the list) and common\data\team_<id>.xml (one per team). The setup never overwrites common\data (chapter 2).
- The new installation has the teams ATLANTICO and GUARANI.

## 8.6 Event Images and the Classic Team Screens

The "Image for Events" pictures are the player photos of the events: goals, cards, penalty kicks and substitutions on the info screens (chapter 10), and on the classic Goal, Card and Substitution screens when they are shown with a picture.

The classic team screens on Info > "Classic Screens" use the player lists as well:

| Control | What It Does |
|---|---|
| "Home Team", "Guest Team" | Open the player list of the team (section 8.3). |
| Colour boxes (two per team) | The team colours of the CK scorebug and the classic team list (section 8.1). |
| "Show" | Shows the team list on the board. In the CK mode it shows the Starting Lineup lower third of the team instead (chapter 10.13). |
| "Show Pictures" | Opens Show Pictures of the team (chapter 12.4). |
| "Slide" | Shows the players of the team as a slide on the board. |

Chapter 10.22 describes the other classic screens.

# 9. Display Modes and Board Output

futsalBoard 7 has four display modes. Each mode has its own board window, its own design (chapter 11) and, except St, its own page in the menu bar:

| Mode | Use | Output | Page |
|---|---|---|---|
| St, Standard | The full scoreboard on a screen, projector or LED wall | The board window | – |
| Sp, Sponsored | The Standard scoreboard with a sponsor band at the top or the bottom | The board window, split into scoreboard and band | Sp |
| Ad, Advertisement | A scoreboard column, up to two banners and a large area for video, camera or screen capture | The Ad board window | Ad |
| CK, Chroma Key | A compact scorebug and lower thirds on a key colour, for a vision mixer | The CK board window | CK |

## 9.1 Switching the Display Mode

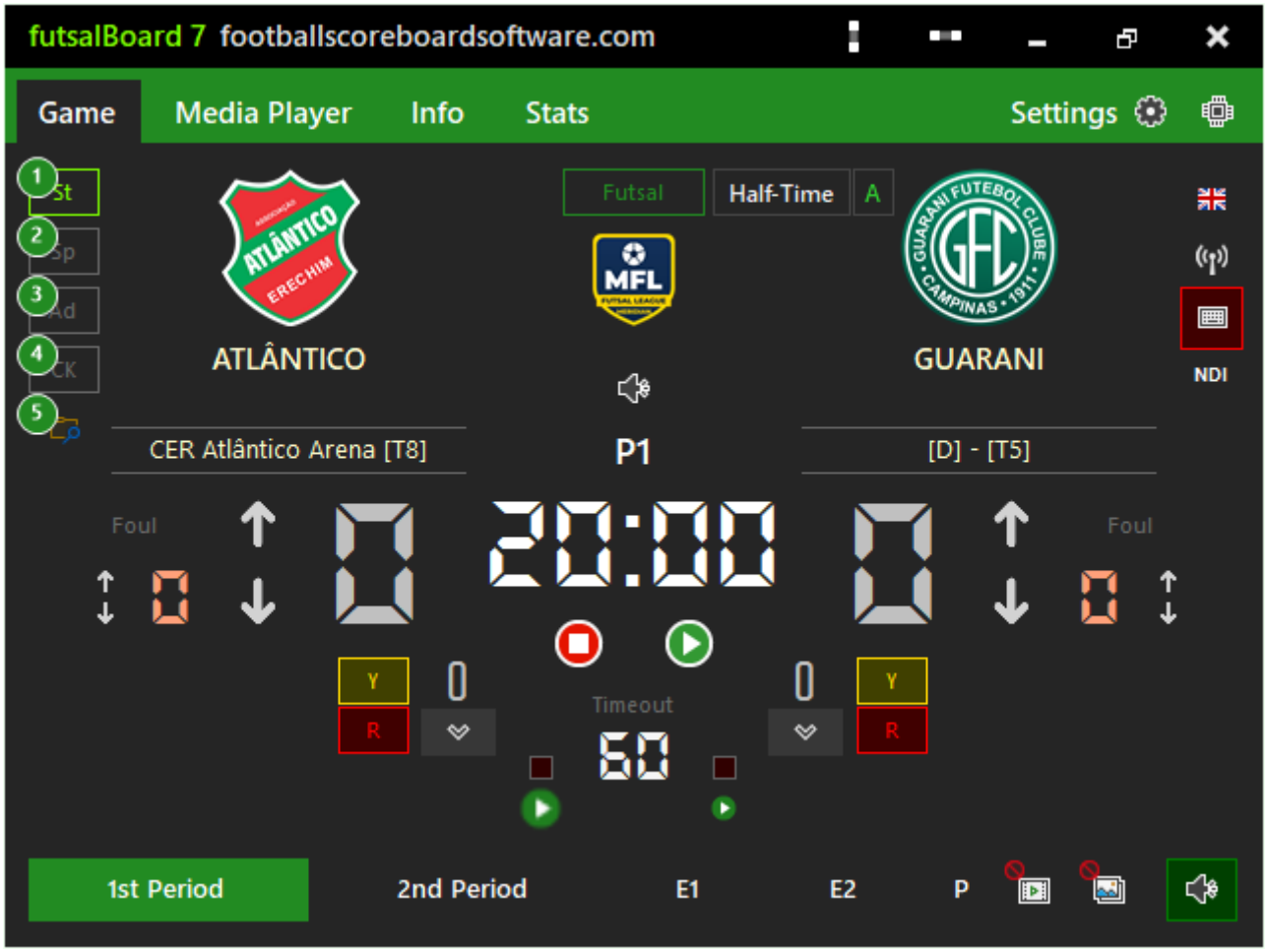



*Figure 42. The display mode buttons and the Select Design button on the Game tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | St | **St** | Standard display mode: the full scoreboard (chapter 9). The active mode is green. |
| 2 | Sp | **Sp** | Sponsored display mode: the scoreboard with the sponsor band (chapter 9). |
| 3 | Ad | **Ad** | Advertisement display mode: the score column beside media, camera or capture (chapter 9). |
| 4 | CK | **CK** | Chroma Key display mode: the scorebug for a TV production (chapter 9). |
| 5 | | **Select Design** | Opens the design gallery to choose another board design (chapter 11). |

Click St, Sp, Ad or CK on the Game tab (tooltips "Standard View", "Sponsored View", "Advertisement View", "Chroma Key View"). The button of the active mode is green. The remote control and the HTTP command click (values st, sp, ad, ck) switch the mode as well (chapters 13 and 14).

When you switch:

- the working scoreboard design of the mode you leave is kept, and the one of the new mode comes back (chapter 11.1);
- in Sp, Ad and CK a fifth tab with the name of the mode (Sp, Ad or CK) appears in the menu bar; it opens the page of that mode. In St the tab is hidden;
- the choice is saved and comes back at the next start;
- the scoreboard of the new mode is shown: a video of the Media Player stops and an info page on air goes off;
- the sources of the pages of the other modes stop: on the St and Sp boards every playlist, camera and screen capture of the Ad and CK pages, on the Ad board those of the CK page, on the CK board those of the Ad page.

The Game tab button of the menu bar does the same for the active mode: it brings its scoreboard back.

The button under CK, "Select Design", opens the design gallery of the active mode (chapter 11.2).

## 9.2 Board Position and Size

All boards use the position and size of Settings > "Screen Properties":

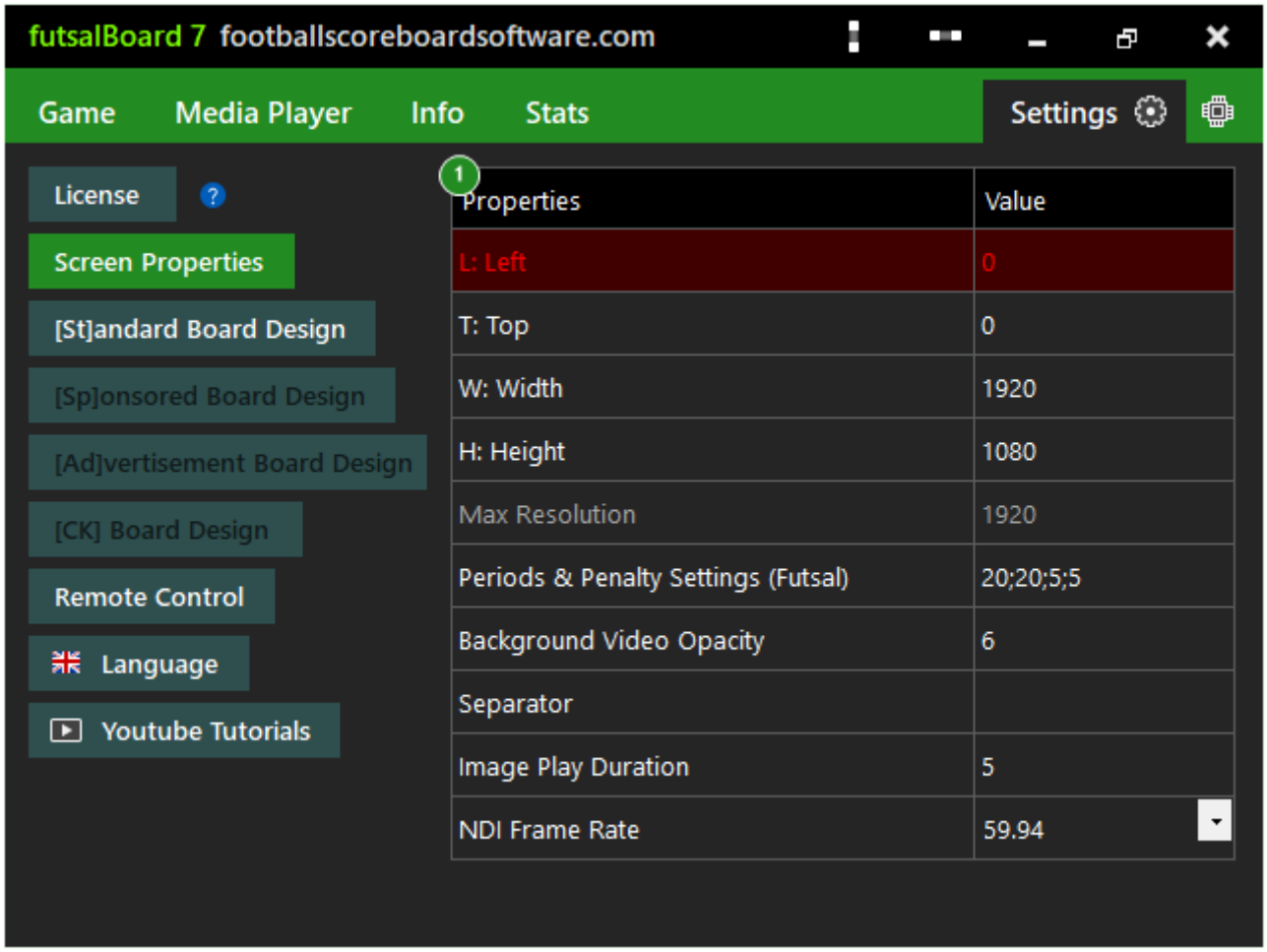
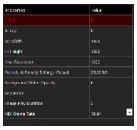



*Figure 43. Settings > Screen Properties with the board position and size.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Properties / Value** | The settings table. Click a value, type (or press F2) and leave the cell: the change is applied and saved at once. An empty value is refused (except Separator). |

| Row | Meaning | Default |
|---|---|---|
| "L: Left" | The x position of the board window on the Windows desktop, in pixels. A negative value counts as 0. | 0 |
| "T: Top" | The y position of the board window. A negative value counts as 0. | 0 |
| "W: Width" | The width of the board in pixels. A value above Max Resolution is cut to Max Resolution. | 960 |
| "H: Height" | The height of the board in pixels. A value above Max Resolution is cut to Max Resolution. | 540 |
| "Max Resolution" | The largest width or height the licence allows (read only, chapter 3). | From the licence |
| "Background Video Opacity" | 0-10: how strongly the background video shows behind the board and the info screens. Another value goes back to 6. | 6 |
| "Image Play Duration" | Seconds a picture stays on screen in a playlist (1-120). Another value goes back to 5. | 5 |
| "NDI Frame Rate" | The frame rate of the NDI output: 23.976, 25, 29.97, 30, 50, 59.94 or 60 (chapter 12.7). | 59.94 |

A change is saved when you leave the cell, and the boards are redrawn at once. Chapter 15 lists the other rows of this page.

For a second screen or an LED controller, extend the Windows desktop to it and set L and T to the position of that screen in the Windows display layout, W and H to its resolution.

## 9.3 Standard (St)




*Figure 44. The Standard board with the factory design: logos, clock, score, team fouls, the sent-off timer of Guarani no. 6 and the two text lines.*

The Standard board needs no page of its own: everything is on the Game tab (chapter 6). Its look comes from the design selected in the gallery (chapter 11). The info screens (chapter 10), Banner, Announce and the Media Player fill the whole board window.

## 9.4 Sponsored (Sp)

The Sponsored board is the Standard board with a sponsor band at the bottom or the top. The band is a separate area of the board window, outside the scoreboard: the scoreboard gets the rest of the height. The band shows the sponsor logos sliding through, or a scrolling text.




*Figure 45. The Sponsored board with the five fictional sponsors in the band at the bottom.*

The Sp page has three tabs.

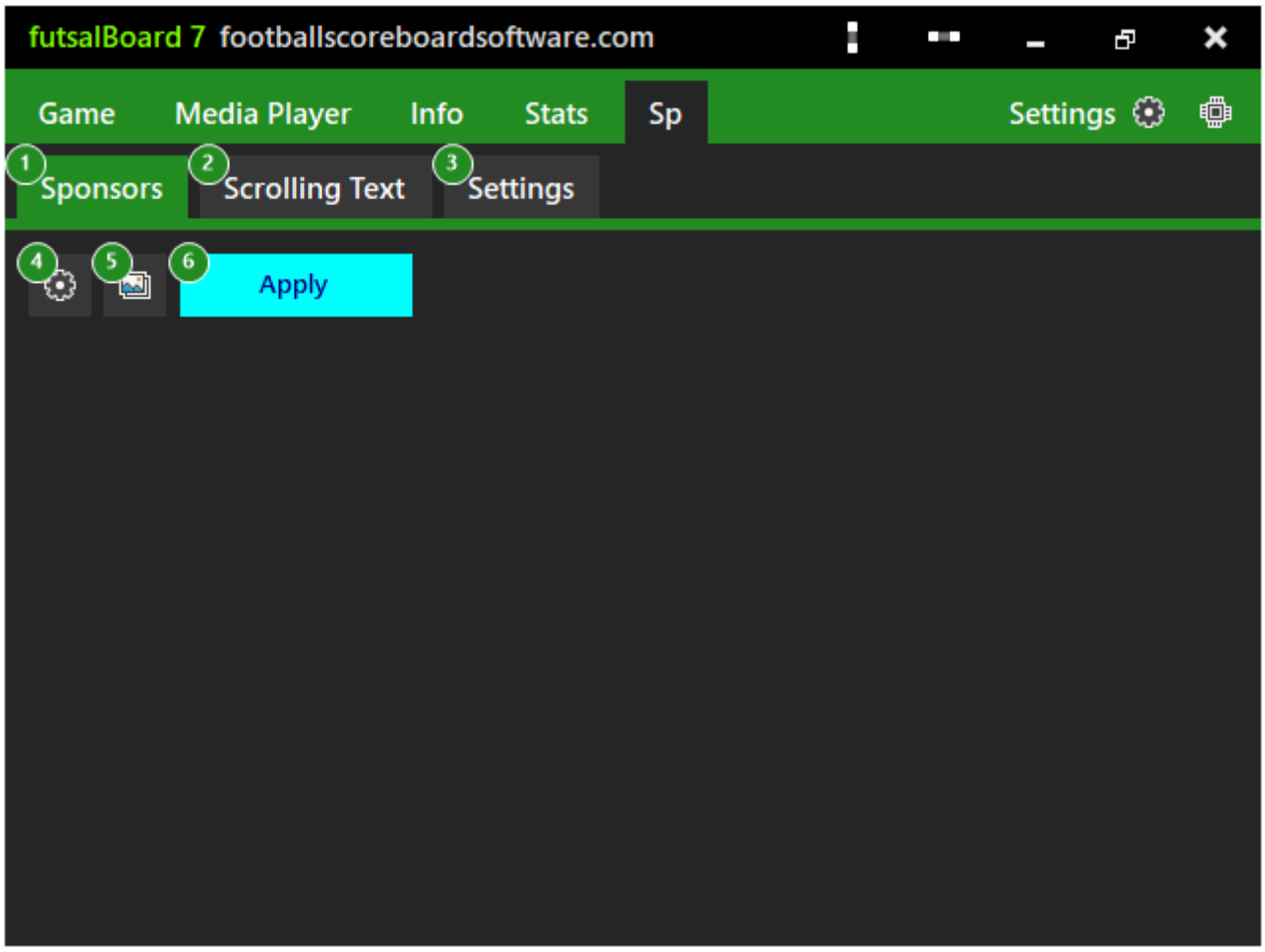



*Figure 46. The Sp page, Sponsors tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Sponsors | **Sponsors** | Shows the Sponsors tab: the sponsor logos for the band. |
| 2 | Scrolling Text | **Scrolling Text** | Shows the Scrolling Text tab: four text slots for the band. |
| 3 | Settings | **Settings** | Shows the Settings tab: location and height of the band. |
| 4 | | **Slide style (gear)** | Opens the style values of the logo slide: image-height, padding, top, speed, direction; the disk button saves them. |
| 5 | | **Sponsor list** | Opens the sponsor list (Info > Sponsors). |
| 6 | Apply | **Apply** | Puts all logos of the sponsor list into the band, sliding through in list order. |

Sponsors: "Apply" puts all logos of the sponsor list (Info > "Sponsors", chapter 12.3) into the band, in list order. The gear button opens the style values of the slide: image-height, padding, top, speed and direction (factory: left); the disk button saves them. The picture button opens the sponsor list.

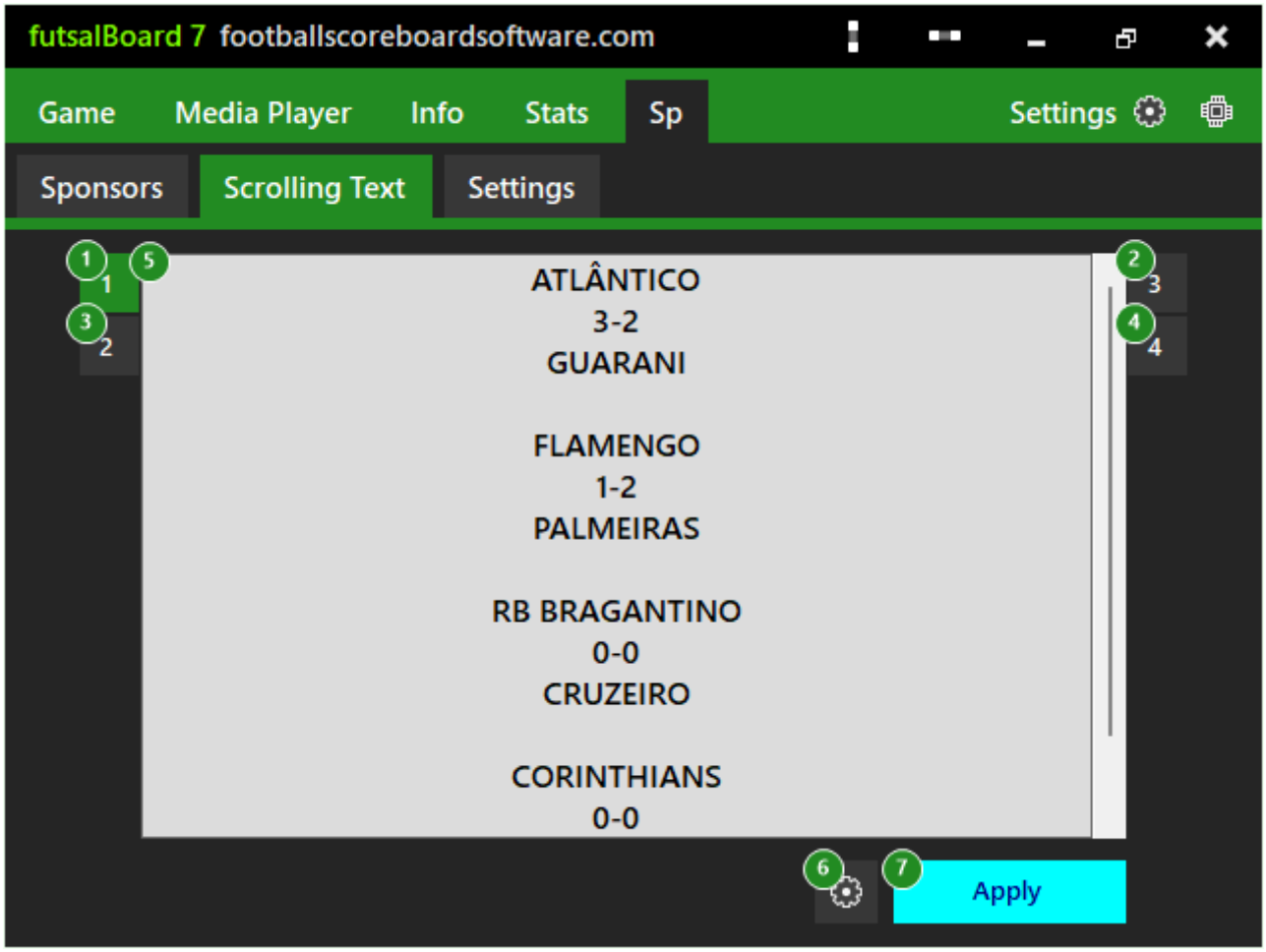



*Figure 47. The Sp page, Scrolling Text tab with the demo results.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **1** | Text slot 1 of the scrolling text. |
| 2 |  | **3** | Text slot 3 of the scrolling text. |
| 3 |  | **2** | Text slot 2 of the scrolling text. |
| 4 |  | **4** | Text slot 4 of the scrolling text. |
| 5 |  | **Text** | The text of the selected slot: one item per line. |
| 6 |  | **Text style (gear)** | Opens the text style: font-family (font picker), font-size, font-weight, line-height, text-shadow, padding, top, speed, direction and the colours of the background, the even and the odd lines; the disk button saves them. |
| 7 |  | **Apply** | Saves the slot and scrolls its lines in the band. |

Scrolling Text: four text slots (buttons 1-4). Type one item per line and click "Apply": the band scrolls the lines. The gear button opens the text style: font-family (with the font picker, chapter 11.5), font-size, font-weight, line-height, text-shadow, padding, top, speed and direction, and three colour boxes: the background, and the colours of the even and the odd lines. The disk button saves the style.

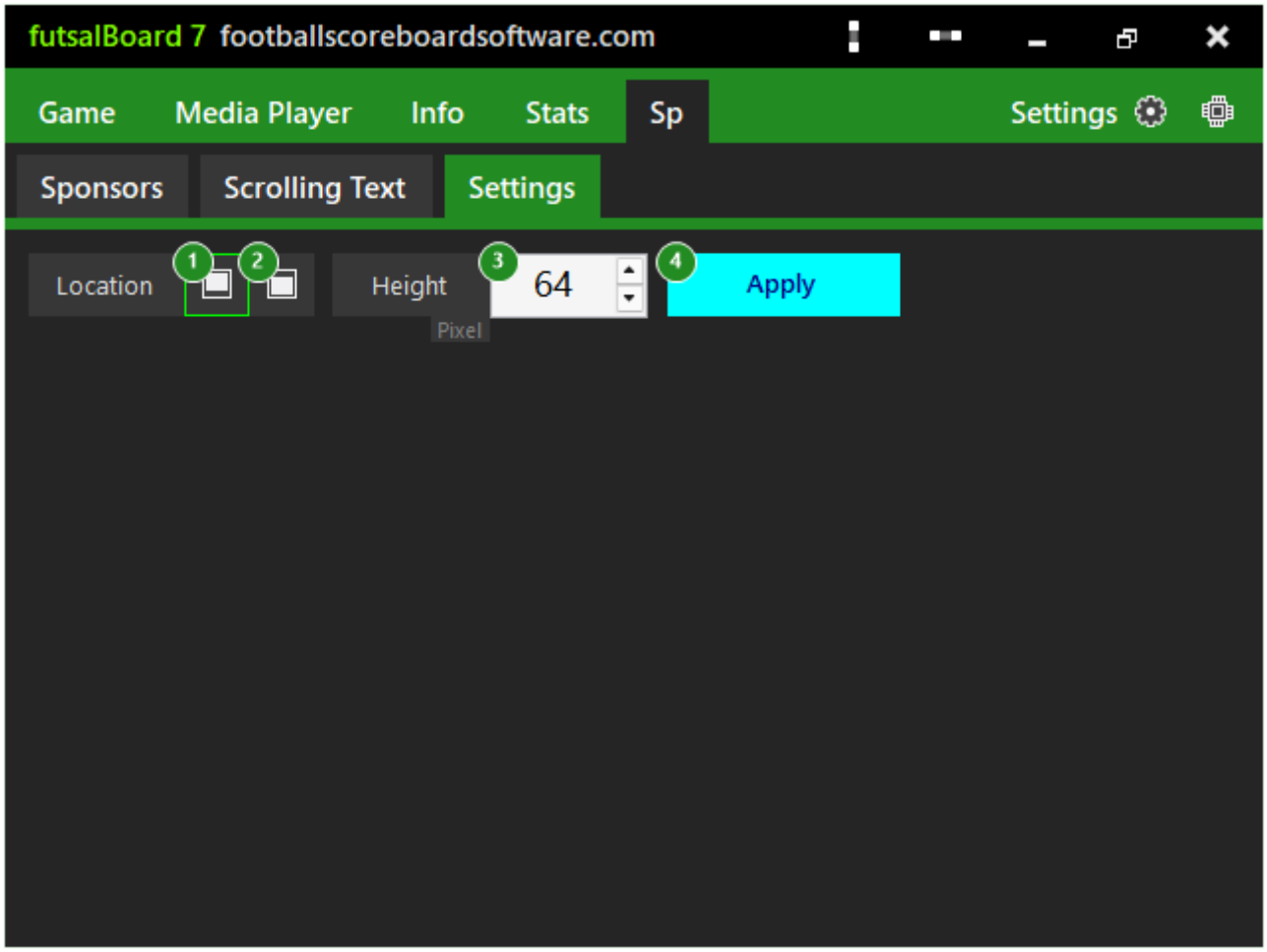



*Figure 48. The Sp page, Settings tab: location and height of the band.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Bottom** | Puts the band at the bottom of the board (green frame = chosen). |
| 2 |  | **Top** | Puts the band at the top of the board (green frame = chosen). |
| 3 |  | **Height** | The height of the band in pixels (up to 1920). |
| 4 |  | **Apply** | Saves location and height and resizes the board at once. |

Settings: "Location" (the two buttons: band at the bottom or at the top; the chosen one has a green frame) and "Height" of the band in pixels (up to 1920). "Apply" changes the board at once. The factory setting is the bottom, 64 pixels.

- The band shows the content applied last (logos or text), also after a restart. A new installation starts with the sponsor logos.
- The Sponsored board uses the Standard designs: its gallery lists the St designs (chapter 11.2).

## 9.5 Advertisement (Ad)

The Advertisement board has a scoreboard column, up to two banners and a large multimedia area for a video playlist, a camera or a screen capture. The multimedia area is a separate part of the board window, outside the scoreboard. The factory layout: the scoreboard column on the left (27 % of the width), banner 2 along the bottom (15 %), banner 1 off.




*Figure 49. The Advertisement board: the score column on the left and the demo clip Northwind_Promo.mp4 in the multimedia area.*

The Ad page has five tabs: "Media Player", "Camera", "Screen Capture", "Banner" and "Settings". While a source runs, the tab of that source (Media Player, Camera or Screen Capture) blinks.

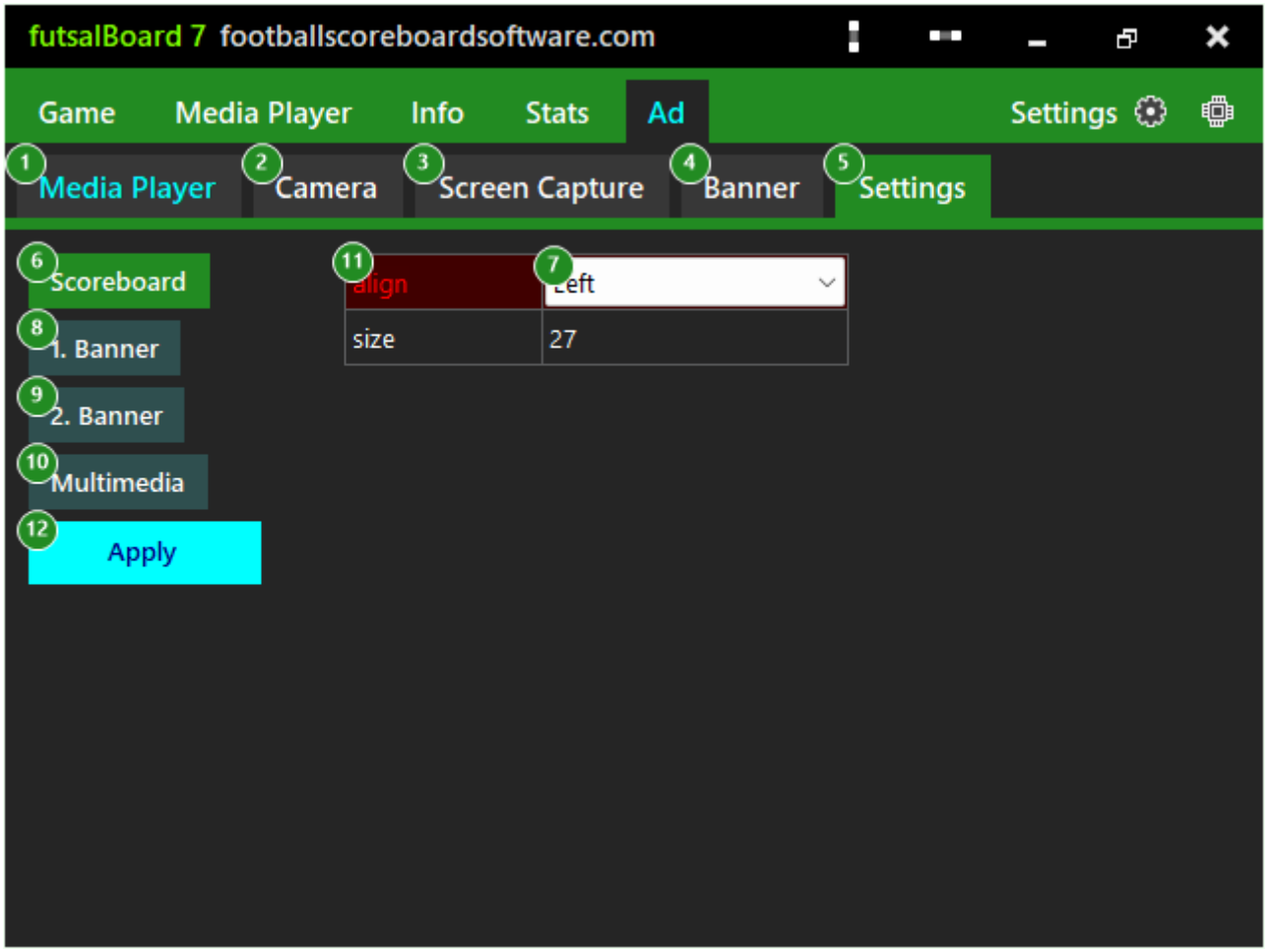
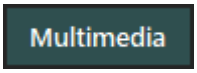



*Figure 50. The Ad page, Settings tab with the layout of the scoreboard column.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Media Player | **Media Player** | The six playlists of the multimedia area. Blinks while a playlist plays on the Ad board. |
| 2 | Camera | **Camera** | A live camera in the multimedia area (chapter 12.5). Blinks while the camera is on the board. |
| 3 | Screen Capture | **Screen Capture** | A part of the PC screen in the multimedia area (chapter 12.6). Blinks while the capture runs. |
| 4 | Banner | **Banner** | The content of banner 1 and banner 2: sponsors, scrolling text or a playlist. |
| 5 | Settings | **Settings** | The layout of the Ad board: scoreboard column, banners, multimedia display mode. |
| 6 | Scoreboard | **Scoreboard** | Shows the values of the scoreboard column: align and size (%). |
| 7 | Left | **align** | The position of the part: Top, Bottom, Left or Right. |
| 8 | 1. Banner | **1. Banner** | Shows the values of banner 1: align, size (%), dock, visible. |
| 9 | 2. Banner | **2. Banner** | Shows the values of banner 2: align, size (%), dock, visible. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| **10** |  | **Multimedia** | Shows the display mode of the multimedia area. |
| **11** |  | **Properties / Value** | The values of the chosen part. Click a value: a list (align, dock, visible, display mode) or a number (size). |
| **12** |  | **Apply** | Saves the values of the part and changes the board at once. A banner with size 0 or visible No is switched off. |

The Settings tab sets the layout in four parts. Choose a part on the left, change the values (a list opens in the value cell), then click "Apply": the board changes at once.

| Part | Values |
|---|---|
| "Scoreboard" | align (Top, Bottom, Left, Right), size (% of the board) |
| "1. Banner", "2. Banner" | align (Top, Bottom, Left, Right), size (%), dock (Yes, No), visible (Yes, No). A banner with size 0 or visible No is off; its content stops. |
| "Multimedia" | displayMode: how the picture fits the multimedia area: Center, CoverCenter, Original, SizeToFit, SizeToFitCenter, Stretch (default), ZoomCenter. |

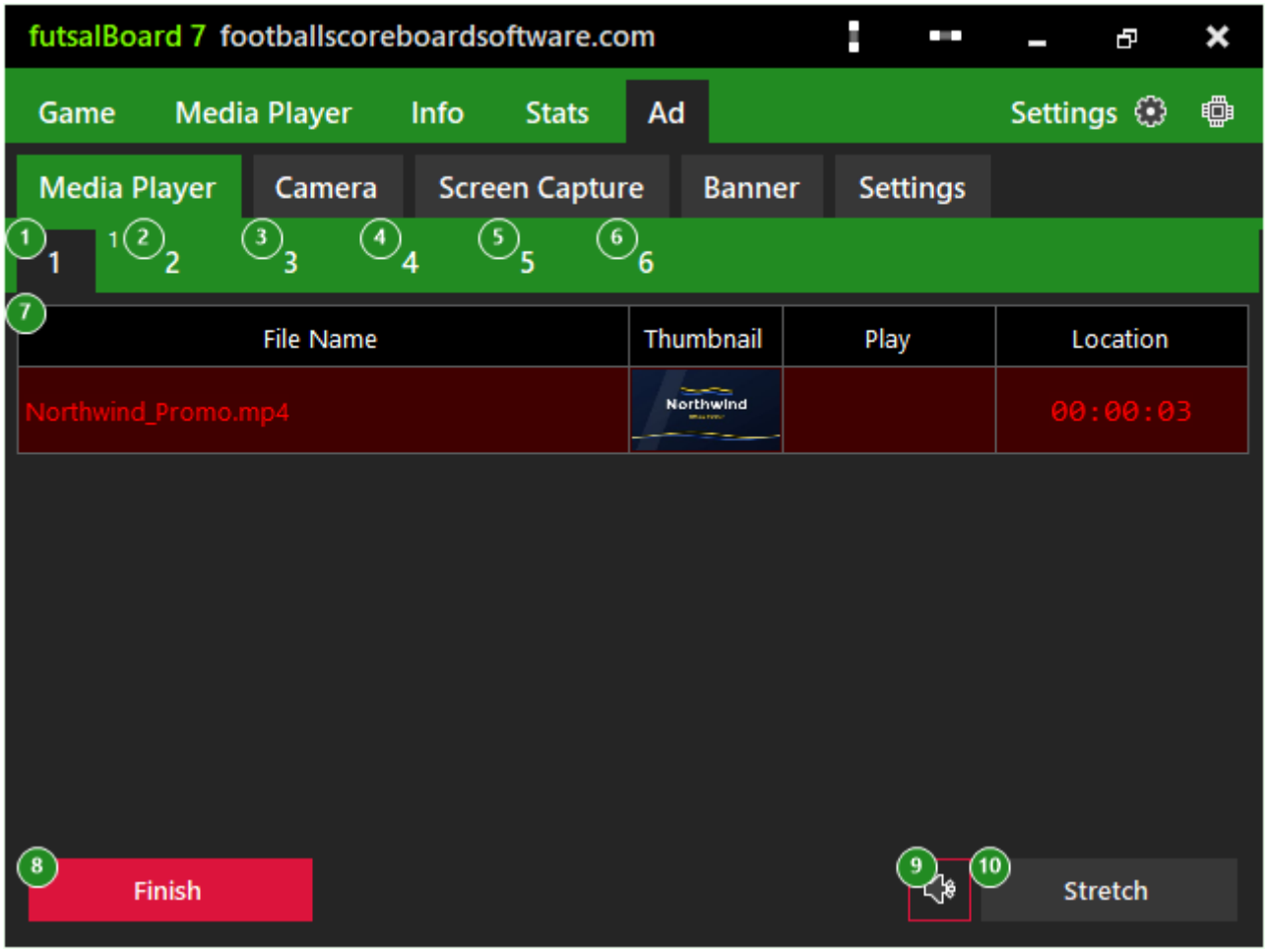
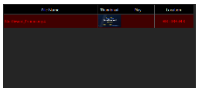
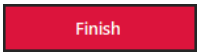



*Figure 51. The Ad page, Media Player tab: playlist 1 with the demo clip, playing.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **1** | Playlist 1 of the Ad page (demo: Northwind_Promo.mp4). The small number shows the clips in the list. |
| 2 |  | **2** | Playlist 2 of the Ad page. |
| 3 |  | **3** | Playlist 3 of the Ad page. |
| 4 |  | **4** | Playlist 4 of the Ad page. |
| 5 |  | **5** | Playlist 5 of the Ad page. |
| 6 |  | **6** | Playlist 6 of the Ad page. |
| 7 |  | **Playlist** | The clips of the playlist: File Name, Thumbnail, Play, Location (time of the playing clip). |
| 8 |  | **Start / Finish** | Plays the list from the selected clip in the multimedia area; reads Finish while playing and stops it. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 9 |  | **Sound** | Sound of the videos on (green frame) or off (red frame). |
| 10 |   | **Display mode** | How the picture fits the multimedia area: Center, CoverCenter, Original, SizeToFit, SizeToFitCenter, Stretch, ZoomCenter. |

Media Player: six playlists (1-6) for the multimedia area. They work like the playlists of the Media Player tab (chapter 12.1): "Add Clip", "Delete Clip", "Delete Playlist", "Start" (the button then reads "Finish"), Play in a row, Sound and the display mode. While a list plays, Add Clip, Delete Clip and Delete Playlist are hidden. The demo playlist 1 holds Northwind_Promo.mp4.

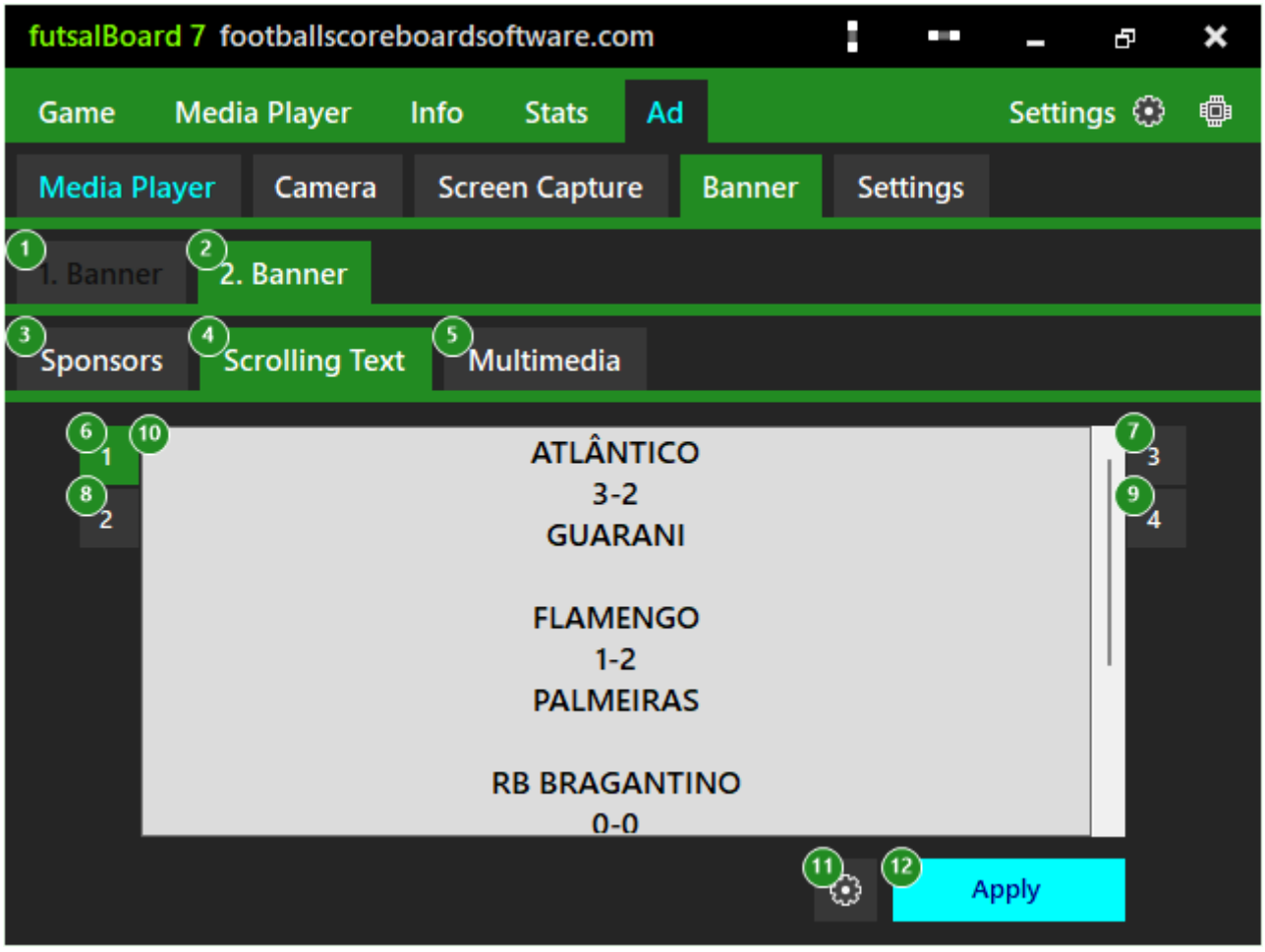
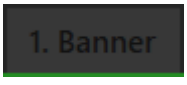
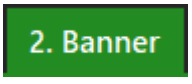
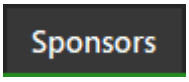
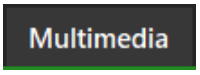
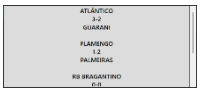



*Figure 52. The Ad page, Banner tab: the content of banner 2 (banner 1 is off).*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |   | **1. Banner** | The content of banner 1. Disabled while banner 1 is off (size 0 or visible No). |
| 2 |   | **2. Banner** | The content of banner 2. Disabled while banner 2 is off. |
| 3 |   | **Sponsors** | The banner shows the sponsor logos sliding through. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 4 |   | **Scrolling Text** | The banner scrolls a text: four slots and a style, as in the Sp band. |
| 5 |   | **Multimedia** | The banner plays a playlist of its own. |
| 6 |   | **1** | Text slot 1 of the banner. |
| 7 |   | **3** | Text slot 3 of the banner. |
| 8 |   | **2** | Text slot 2 of the banner. |
| 9 |   | **4** | Text slot 4 of the banner. |
| 10 |  | **Text** | The text of the selected slot: one item per line. |
| 11 |  | **Text style (gear)** | Opens the text style of the banner (font, size, colours, speed, direction ...). |
| 12 |   | **Apply** | Saves the slot and scrolls its lines in the banner. |

Banner: the content of "1. Banner" and "2. Banner". The tab of a banner that is off is disabled. Each banner shows one of:

- "Sponsors": the sponsor logos sliding through, as in the Sp band;
- "Scrolling Text": four text slots and a style, as in the Sp band;
- "Multimedia": a playlist of its own for the banner.

Camera and Screen Capture: chapter 12.5 and 12.6.

> **Note:** A design saved in the Advertisement mode keeps this layout (scoreboard column and banners) and brings it back when you apply it in the gallery (chapter 11.3).

## 9.6 Chroma Key (CK)

The CK board shows a compact scorebug and lower-third graphics on a key colour. A vision mixer (or vMix, OBS ...) removes the key colour and lays the graphics over the camera picture.




*Figure 53. The Chroma Key scorebug (top left). The screenshot shows it over a grey test background; on air the background is the key colour.*

The CK page has five tabs: "Info" (the scorebug and the lower thirds, chapter 10.23), "Media Player", "Camera", "Screen Capture" and "Settings". A picture of Media Player, Camera or Screen Capture fills the CK board behind the graphics, in place of the key colour. While a source runs, its tab blinks.

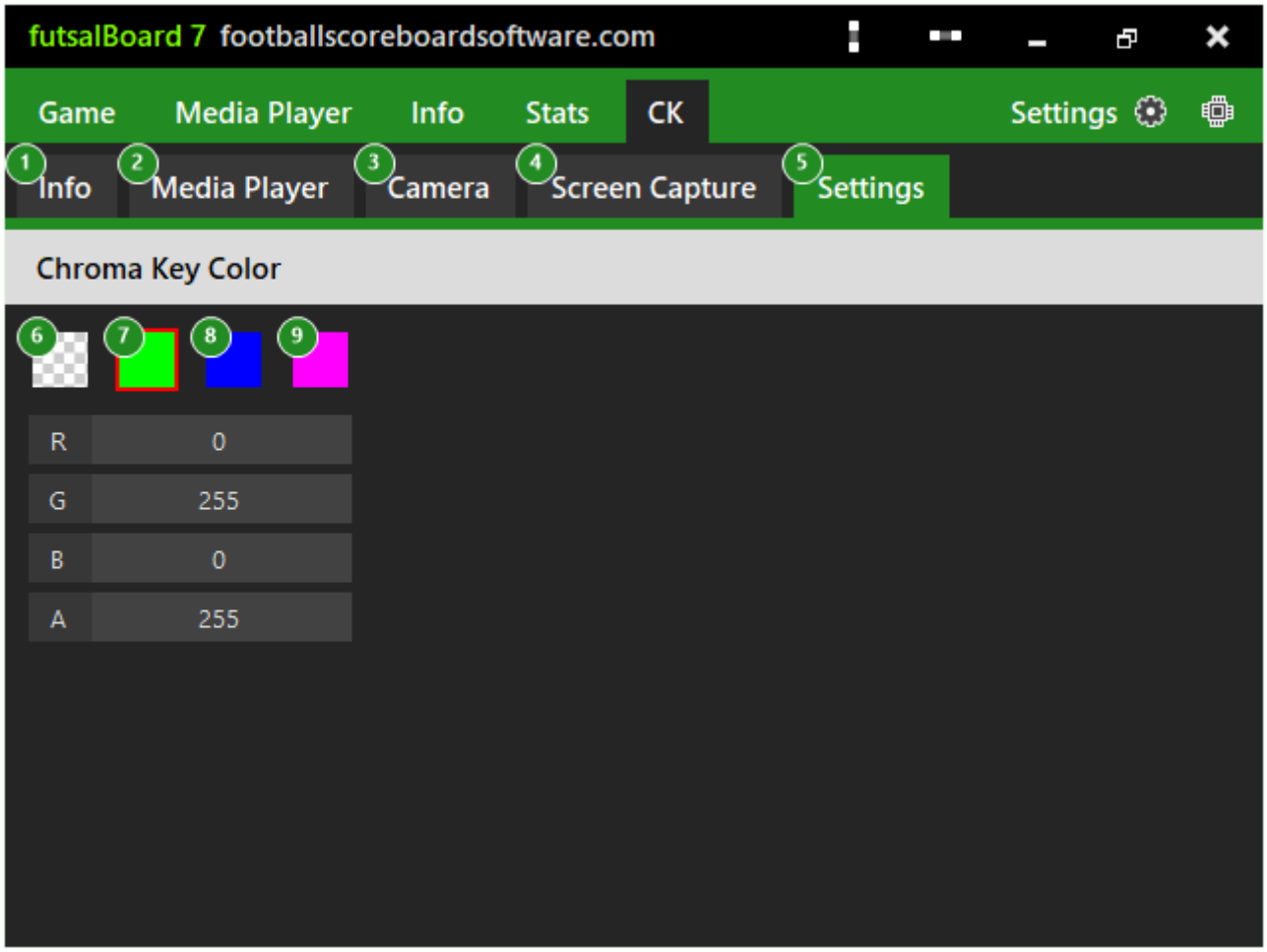



*Figure 54. The CK page, Settings tab: the chroma key colour (green chosen).*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Info | **Info** | The scorebug and the lower thirds of the info screens (chapter 10.23). |
| 2 | Media Player | **Media Player** | The six playlists of the CK board background. Blinks while a playlist plays. |
| 3 | Camera | **Camera** | A live camera behind the CK graphics (chapter 12.5). Blinks while the camera is on. |
| 4 | Screen Capture | **Screen Capture** | A part of the PC screen behind the CK graphics (chapter 12.6). Blinks while the capture runs. |
| 5 | Settings | **Settings** | The chroma key colour. |
| 6 | | **Transparent** | Key colour transparent: the board window is see-through on the Windows desktop. Red frame = chosen. |
| 7 | | **Green** | Key colour green (0, 255, 0), the default. Red frame = chosen. |
| 8 | | **Blue** | Key colour blue (0, 0, 255). Red frame = chosen. |
| 9 | | **Magenta** | Key colour magenta (255, 0, 255). Red frame = chosen. |

"Chroma Key Color": transparent, green (default), blue or magenta. The chosen colour has a red frame, its R, G, B and A values are shown below, and the board uses it at once. With transparent, the board window itself is see-through on the Windows desktop.

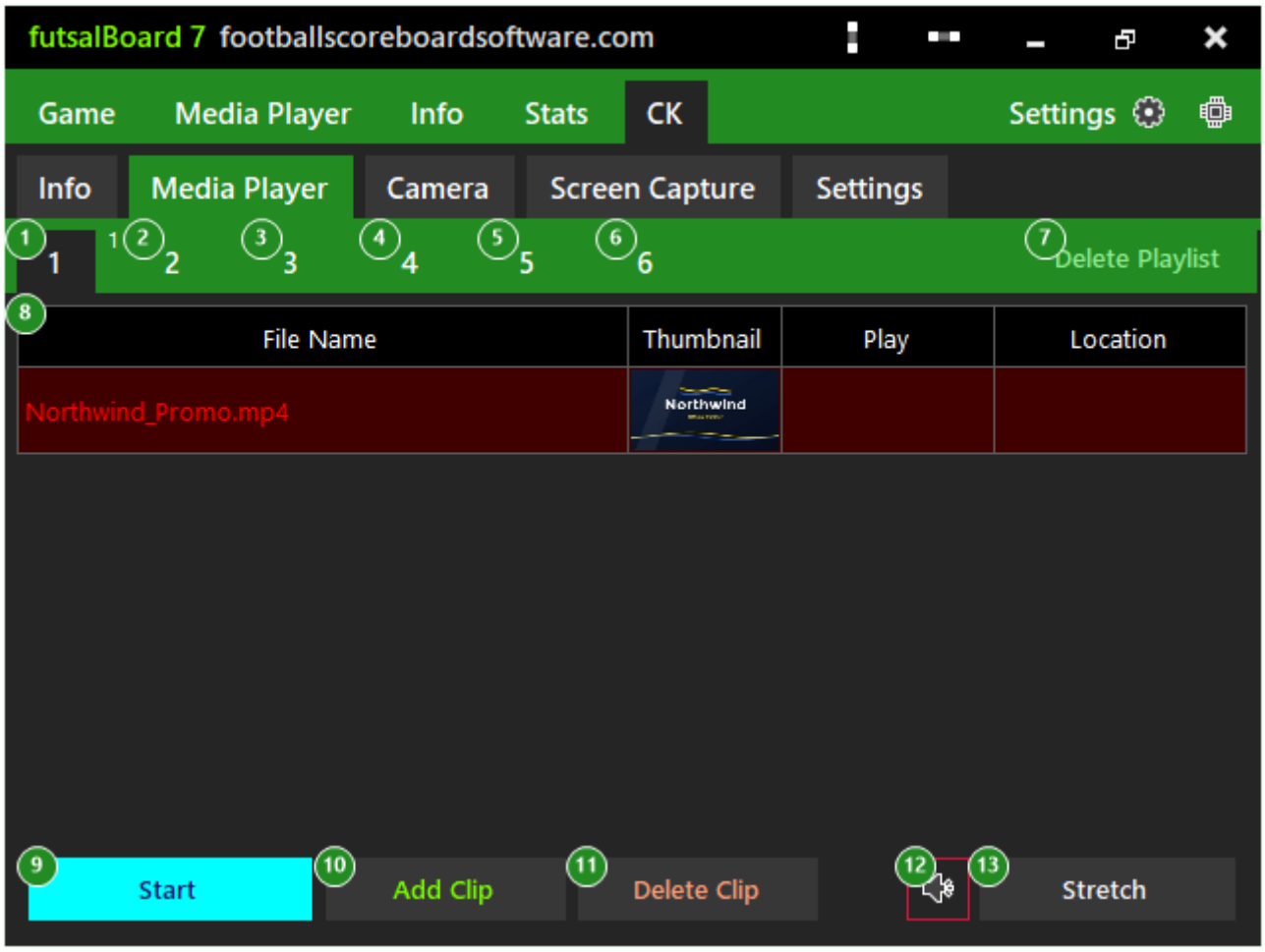
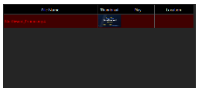



*Figure 55. The CK page, Media Player tab with the demo playlist 1.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | 1 | 1 | Playlist 1 of the CK page (demo: Northwind_Promo.mp4). The small number shows the clips in the list. |
| 2 | 2 | 2 | Playlist 2 of the CK page. |
| 3 | 3 | 3 | Playlist 3 of the CK page. |
| 4 | 4 | 4 | Playlist 4 of the CK page. |
| 5 | 5 | 5 | Playlist 5 of the CK page. |
| 6 | 6 | 6 | Playlist 6 of the CK page. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 7 | Delete Playlist | **Delete Playlist** | Empties the current playlist, without a question. |
| 8 |  | **Playlist** | The clips of the playlist: File Name, Thumbnail, Play, Location. |
| 9 | Start | **Start / Finish** | Plays the list from the selected clip behind the CK graphics; reads Finish while playing and stops it. |
| 10 | Add Clip | **Add Clip** | Adds video, audio or picture files to the playlist. |
| 11 | Delete Clip | **Delete Clip** | Removes the selected clip. |
| 12 |  | **Sound** | Sound of the videos on (green frame) or off (red frame). |
| 13 | Stretch | **Display mode** | How the picture fits the CK board: Center, CoverCenter, Original, SizeToFit, SizeToFitCenter, Stretch, ZoomCenter. |

The CK Media Player has its own six playlists; the demo playlist 1 holds Northwind_Promo.mp4.

> **Note:** For NDI output use the green, blue or magenta key colour: the NDI stream of futsalBoard 7 carries no transparency (chapter 12.7).

## 9.7 NDI

The NDI button on the Game tab sends the board of the active display mode into the network as an NDI video stream; a vision mixer or streaming software receives it as a source. Chapter 12.7 describes it.

## 9.8 Typical Set-Ups

Screen or LED wall in the venue:

1. Connect the screen or the LED controller as a second display of the PC and extend the Windows desktop to it.
2. In Settings > "Screen Properties" set L and T to the position of that display, W and H to its resolution (section 9.2).
3. Use St, Sp for a sponsor band, or Ad for videos and live pictures beside the score.

TV production with a vision mixer:

1. Choose CK and a key colour on the CK page > Settings.
2. Send the CK board to the mixer: as a video output of the PC, or over the network with the NDI button.
3. Key the colour out in the mixer: the scorebug and the lower thirds lie over the camera picture.
4. Show the info screens as lower thirds from the Info tab or the CK page (chapter 10).

Streaming software (OBS, vMix):

1. Click NDI on the Game tab. The board appears in the software as the NDI source Fs7_NDI.
2. For an overlay use CK and a chroma-key filter on the source; for a full-screen graphic use St.

# 10. Info Screens

The info screens show an event or a table instead of the scoreboard: a goal, a card, the accumulated fouls, a timeout, the result of a period, the standings ... On the St, Sp and Ad boards a screen fills the board window; in the CK mode it is a lower third under the scorebug. futsalBoard 7 has 17 info screens; each discipline shows the ones that fit its rules.

## 10.1 The Info Tab

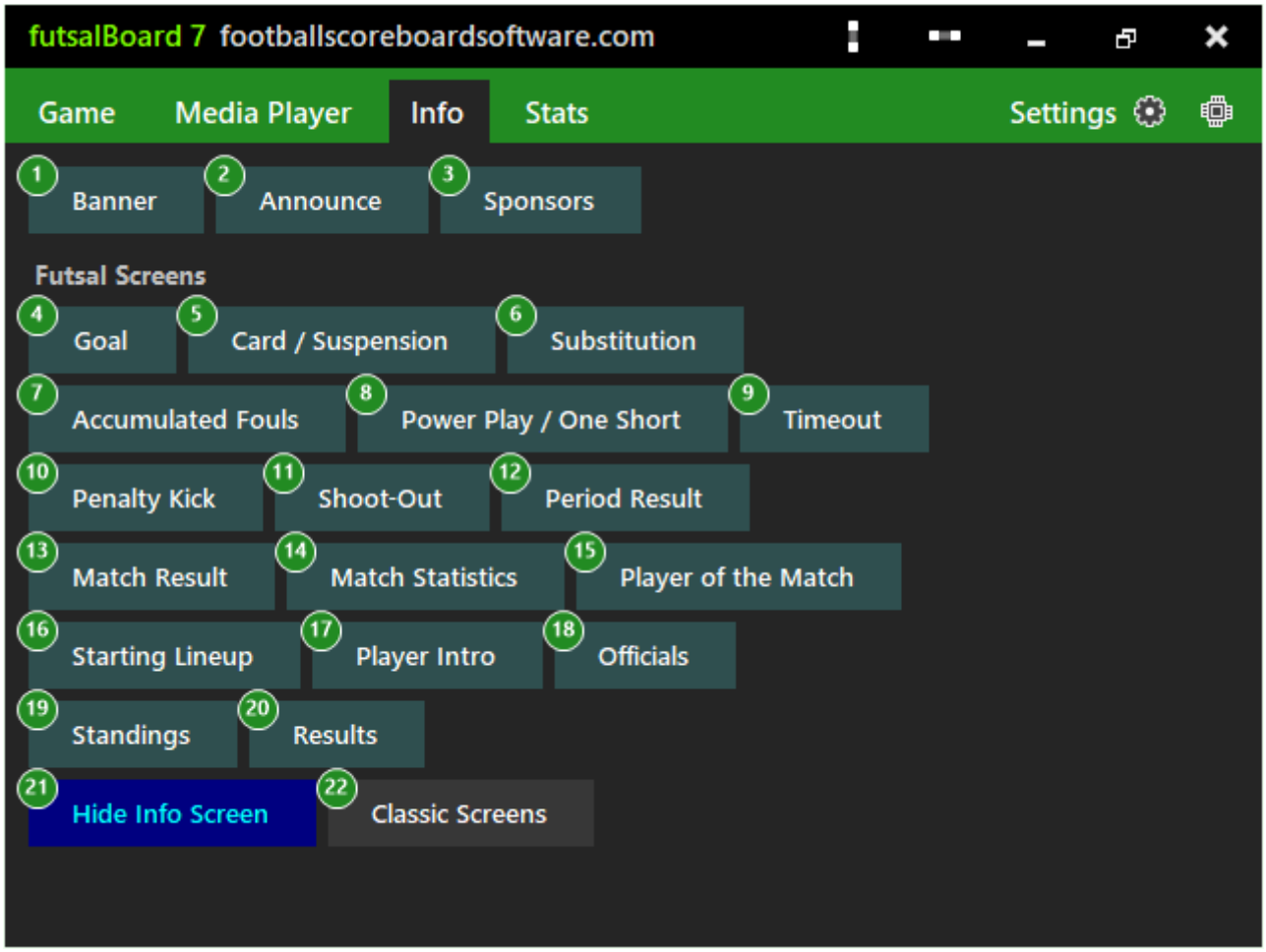
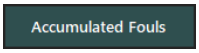
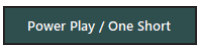
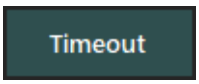
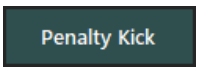
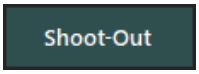
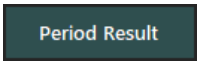
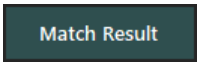
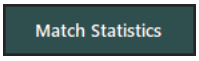
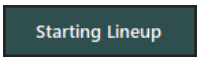
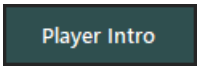
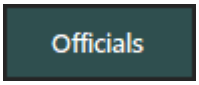
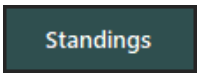
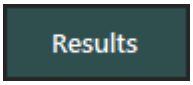
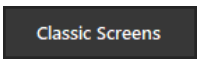



*Figure 56. The Info tab with the Futsal screens.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Banner | **Banner** | Opens the Banner editor (chapter 10.21). |
| 2 | Announce | **Announce** | Opens the Announce editor (chapter 10.21). |
| 3 | Sponsors | **Sponsors** | Opens the sponsor list (chapter 12.3). |
| 4 | Goal | **Goal** | Opens the editor of the Goal screen. |
| 5 | Card / Suspension | **Card / Suspension** | Opens the editor of the Card / Suspension screen. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 6 |  | **Substitution** | Opens the editor of the Substitution screen. |
| 7 |  | **Accumulated Fouls** | Opens the editor of the Accumulated Fouls screen (futsal only). |
| 8 |  | **Power Play / One Short** | Opens the editor of the Power Play / One Short screen. |
| 9 |  | **Timeout** | Opens the editor of the Timeout screen (futsal, floorball). |
| 10 |  | **Penalty Kick** | Opens the editor of the Penalty Kick screen (futsal, beach soccer, floorball). |
| 11 |  | **Shoot-Out** | Opens the editor of the Shoot-Out screen (futsal, beach soccer, floorball). |
| 12 |  | **Period Result** | Opens the editor of the Period Result screen. |
| 13 |  | **Match Result** | Opens the editor of the Match Result screen. |
| 14 |  | **Match Statistics** | Opens the editor of the Match Statistics screen. |
| 15 |  | **Player of the Match** | Opens the editor of the Player of the Match screen. |
| 16 |  | **Starting Lineup** | Opens the editor of the Starting Lineup screen. |
| 17 |  | **Player Intro** | Opens the editor of the Player Intro screen. |
| 18 |  | **Officials** | Opens the editor of the Officials screen. |
| 19 |  | **Standings** | Opens the editor of the Standings screen. |
| 20 |  | **Results** | Opens the editor of the Results screen. |
| 21 |  | **Hide Info Screen** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). |
| 22 |  | **Classic Screens** | Shows the older screens of the program (chapter 10.22). |

The top row opens "Banner", "Announce" (section 10.21) and the "Sponsors" list (chapter 12.3). Below, under the heading "<Discipline> Screens" (for example "Futsal Screens"), one button per info screen opens its editor. "Hide Info Screen" takes the screen on air off, "Classic Screens" opens the older screens of the program (section 10.22).

The buttons follow the discipline and its rules (chapter 5 and 7): a screen whose rule is switched off (no timeouts, no team fouls, no shoot-out ...) has no button. With the factory rules:

| Screen | Futsal | Beach Soccer | Netball | Floorball |
|---|---|---|---|---|
| "Goal", "Card / Suspension", "Substitution" | Yes | Yes | Yes | Yes |
| "Accumulated Fouls" | Yes | – | – | – |
| "Power Play / One Short" | Yes | Yes | Yes | Yes |
| "Timeout" | Yes | – | – | Yes |
| "Penalty Kick", "Shoot-Out" | Yes | Yes | – | Yes |
| "Period Result", "Match Result", "Match Statistics", "Player of the Match" | Yes | Yes | Yes | Yes |
| "Starting Lineup", "Player Intro", "Officials", "Standings", "Results" | Yes | Yes | Yes | Yes |

So futsal has all 17 screens, beach soccer 15, floorball 16 and netball 13. Accumulated Fouls needs the team fouls rule, Timeout needs timeouts, Shoot-Out needs a shoot-out as the decider, Card / Suspension needs at least one card or penalty kind switched on, Power Play / One Short a kind with a timer.

## 10.2 Showing and Hiding a Screen

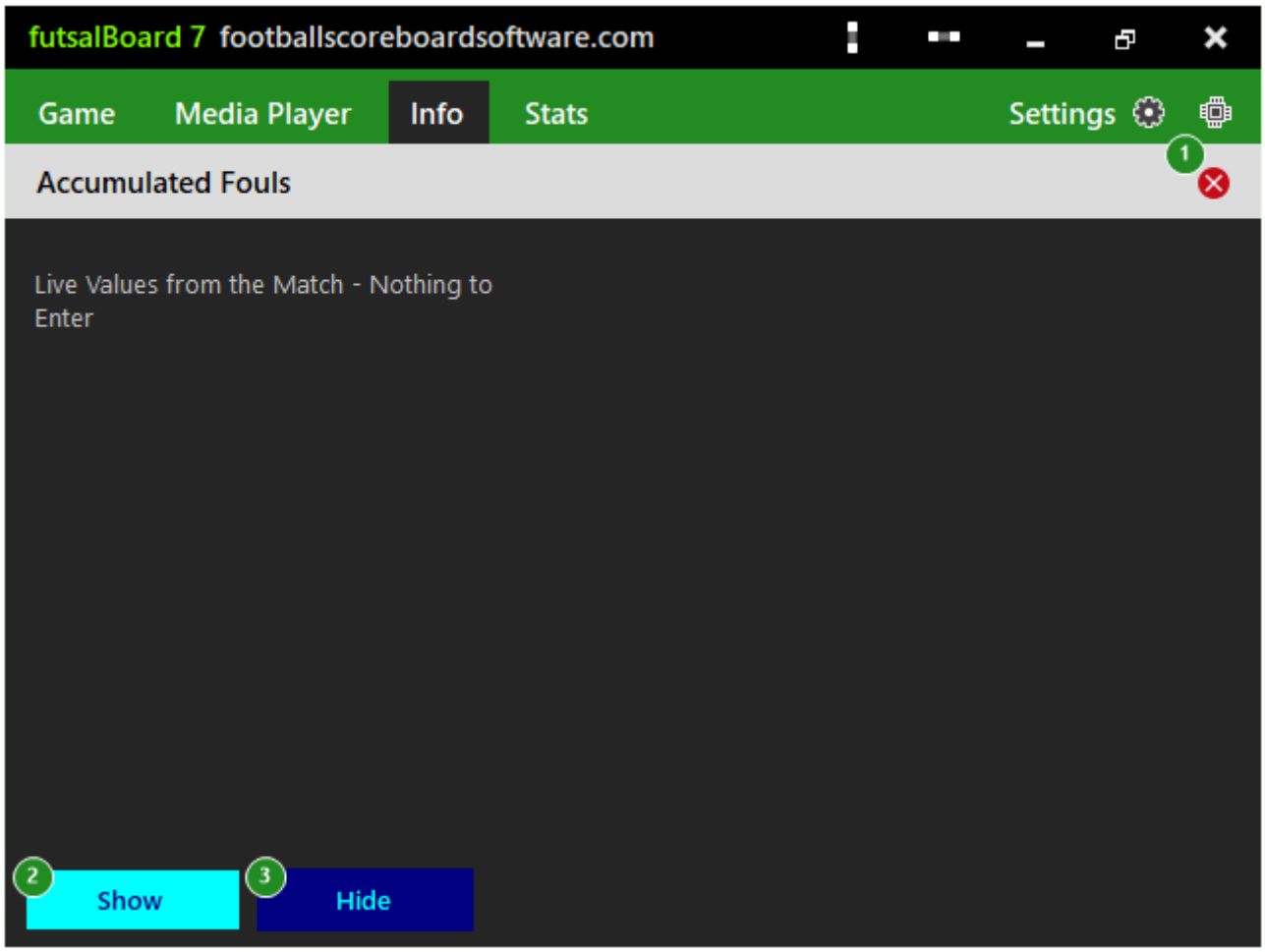



*Figure 57. The editor of a screen without fields (Accumulated Fouls): the values come from the match.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 |   | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 3 |   | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

1. Click the screen's button on the Info tab (or on the Info tab of the CK page, section 10.23). The editor opens in the work area; its title is the name of the screen.
2. Fill in the fields. Every change is saved at once with the match; there is no Save button. A choice field (team, kind, result ...) opens its list with a click; the team choices show the team names.
3. Click "Show". St, Sp and Ad: the screen fills the board window. CK: the lower third appears under the scorebug.
4. Click "Hide" (or "Hide Info Screen" on the Info tab) to go back to the scoreboard; in CK the lower third goes off.

- Next to Hide the editor shows "On Air: <screen>" while a screen is on air.
- The X of the title bar or Esc closes the editor; the screen stays on air.
- Show is aqua with navy text, Hide navy with aqua text: these colours always mean "this changes what is on the board".
- A screen without fields says "Live Values from the Match - Nothing to Enter".
- The subtitle of every screen on the St board is the first line of text line 1 of the Game tab (chapter 8.1), with its codes replaced (factory: the venue and the time of day). Standings and Results use their heading instead when it is filled in.
- Values that are empty are left out, so a screen shows only what has content.
- The background of the full-page screens is the background setting of the Classic Screens (gear button, section 10.22): the scoreboard's background video (default), black, or a selected file.
- The Game tab button of the menu bar also takes a full-page screen off.

Live values: the screens Card / Suspension, Accumulated Fouls, Power Play / One Short, Timeout, Shoot-Out, Period Result and Match Result follow the match while they are on air: timers, fouls, kicks and scores are updated with every tick of the board, and the timers stop with the game clock. The other screens are built when you click Show; click Show again after you changed a field.

Remote control and HTTP API: info_show (with the screen key and fields), info_hide, info_set and info_list (chapter 14). The key of each screen is given in its section below.

New match (chapter 6): the per-match fields are cleared (Goal, Card, Substitution, Penalty Kick, Player of the Match, the player and note of Player Intro, Timeout, and the period scores). The headings of Standings and Results and the Officials list stay.

## 10.3 Goal

Key: Goal. The scorer with photo, shirt number and name, the score with the scoring team marked, the team logo, the assist and the time.

| Field | Values |
|---|---|
| "Scoring Team" | The home or the guest team. |
| "Scorer (Number or Name)" | The shirt number or the name of the scorer (chapter 8.4). |
| "Assist (Number or Name)" | Not in netball. Hidden on the screen when it is empty or the same player as the scorer. |
| "Time (Empty = Match Time)" | The text of the Time line. Empty: the playing time of the match when you click Show (all earlier periods plus the time played in this one, whatever the clock direction). |
| "Kind of Goal" | Not in netball. Futsal: Goal, Penalty, Second Penalty Mark, Own Goal. Beach soccer: Goal, Penalty, Own Goal. Floorball: Goal, Penalty Shot, Power Play Goal, Short-Handed Goal, Empty Net, Own Goal. "Goal" adds no line; any other kind is shown under the name. |

- Own Goal: the scorer is looked up in the list of the other team, and no assist is shown.




*Figure 58. Goal on the St board (left) and as a CK lower third (right).*

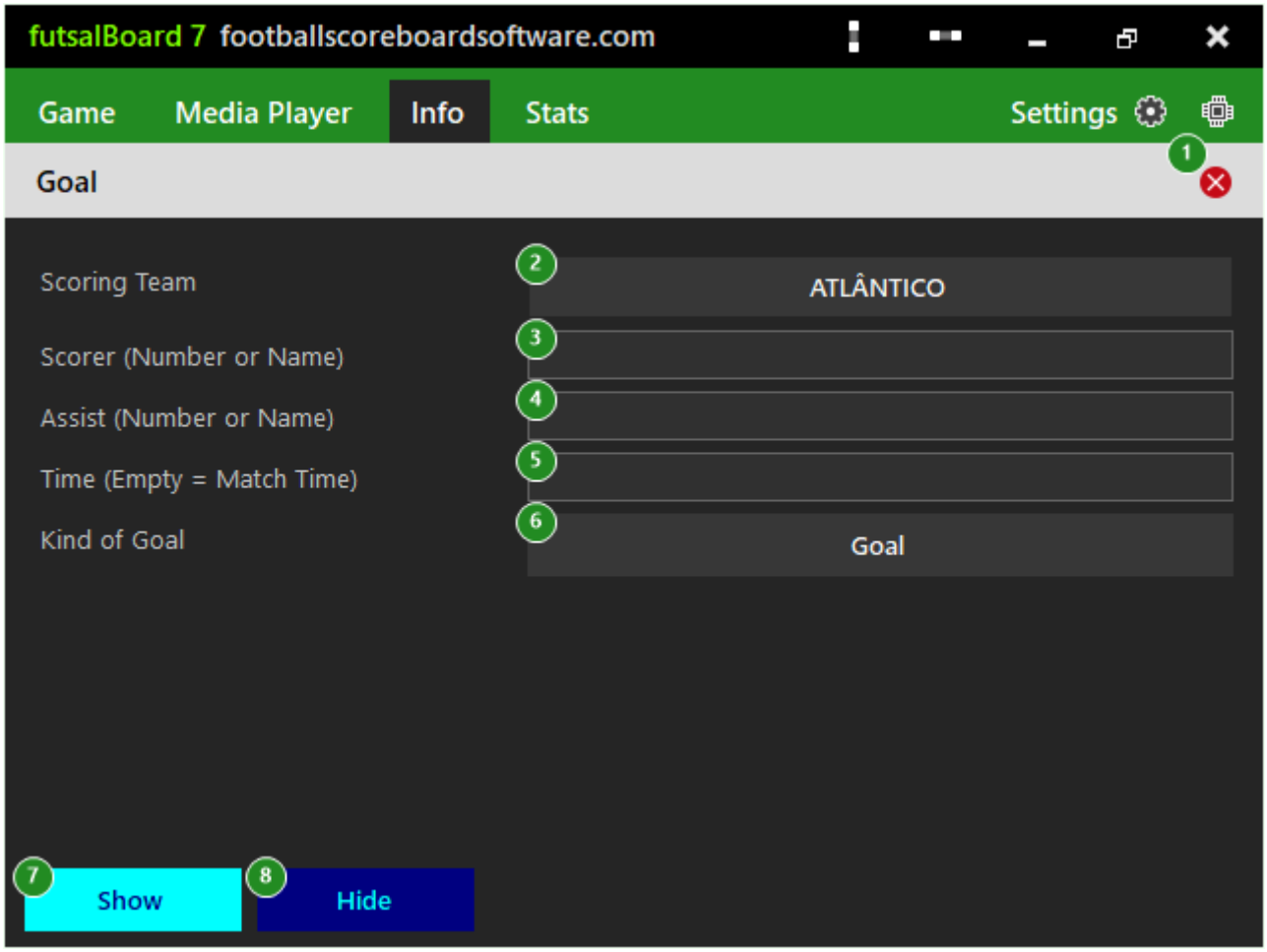



*Figure 59. The editor of Goal.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 | | **Scoring Team** | The team that scored (home or guest, shown with the team names). |
| 3 | | **Scorer (Number or Name)** | The shirt number or the name of the scorer, looked up in the team's player list. |
| 4 | | **Assist (Number or Name)** | The player who gave the assist (not in netball). Hidden when empty or the same as the scorer. |
| 5 | | **Time (Empty = Match Time)** | The time line of the screen. Empty: the playing time of the match when you click Show. |
| 6 | | **Kind of Goal** | Goal, Penalty, Second Penalty Mark, Own Goal (futsal); the kinds of the discipline in beach soccer and floorball. Not in netball. |
| 7 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 8 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.4 Card / Suspension

Key: Card. Title "Disciplinary". The card (or the penalty), the player, the team, a note and the time left of the player's penalty. Live.

| Field | Values |
|---|---|
| "Team" | The home or the guest team. |
| "Player (Number or Name)" | The player. Empty: the screen shows "Team Official". |
| "Card / Penalty" | The card and penalty kinds switched on in the rules of the discipline: futsal Yellow Card, Sending-Off; beach soccer also Blue Card (when switched on); netball Caution, Suspension, Ordered Off; floorball Bench Penalty, Major Bench Penalty, 5-Minute Penalty (when switched on), 10-Minute Personal Penalty, Match Penalty. |

What the screen shows:

| Kind | Card and Note |
|---|---|
| Yellow Card | A yellow card. When the player already has two yellow cards in the match: "Second Yellow Card" with a second-yellow card and the note "Sending-Off". |
| Sending-Off | A red card and the note "The Team Plays One Short". |
| Blue Card | A blue card. |
| Caution (netball) | No card. |
| Suspension, Ordered Off (netball) | A yellow or a red card. |
| Floorball penalties | A plate with the short text of the penalty (2, 2+2, 5, 10, MP). |

- "Time Left" and the timer: the running penalty of that player (shirt number) from the control panel (chapter 6). A penalty that waits for a free place shows "Waiting to Start". Without a running penalty the line is hidden.
- The screen does not give the card: give it on the control panel first, then show the screen.

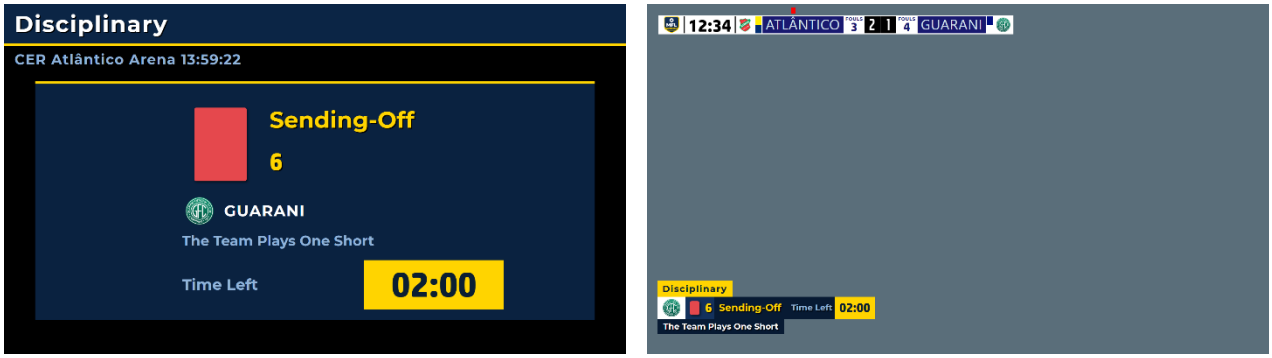



*Figure 60. A sending-off with the 2-minute timer on the St board and as a CK lower third.*

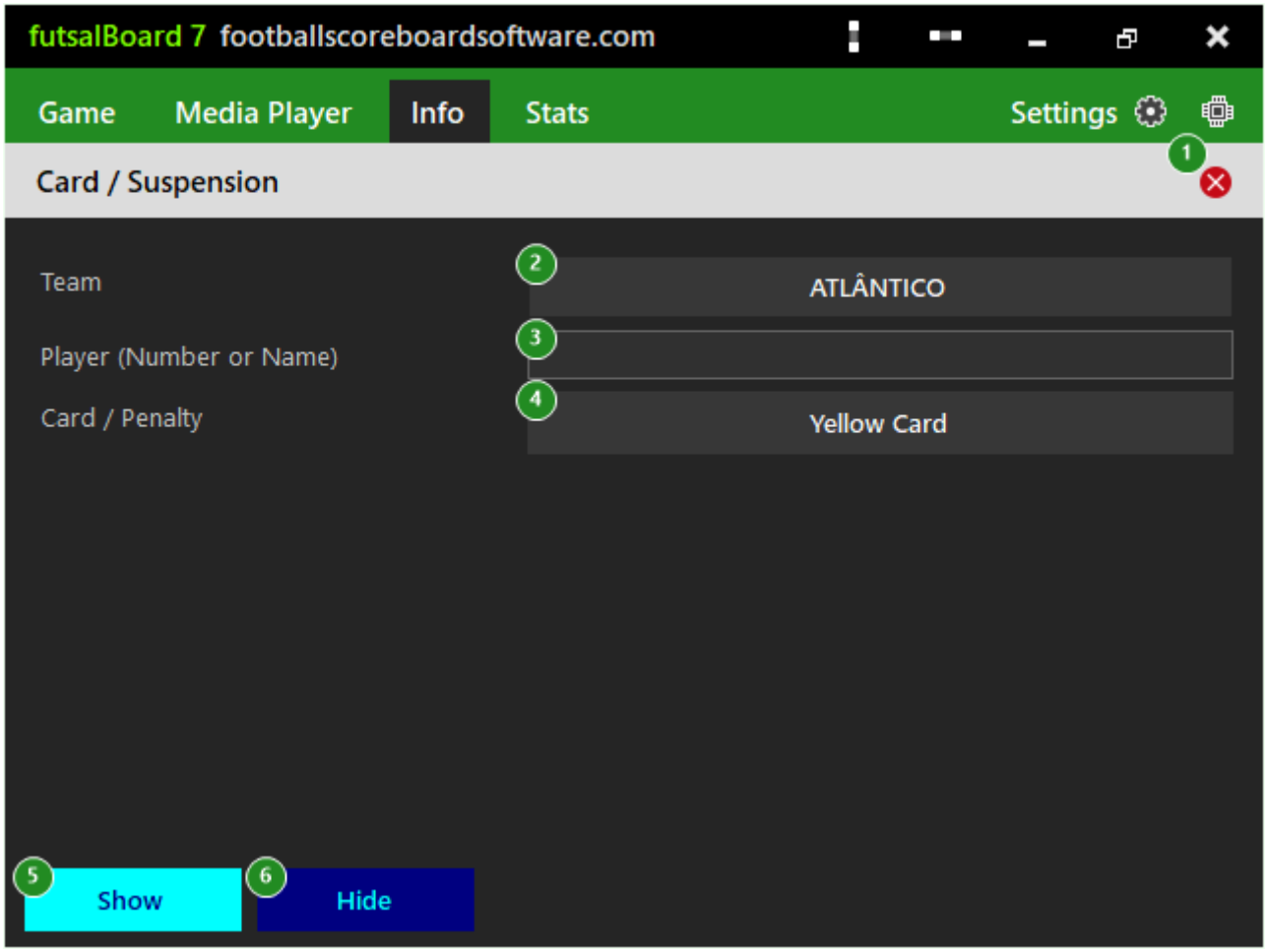



*Figure 61. The editor of Card / Suspension.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 | ATLÂNTICO | **Team** | The team of the player. |
| 3 | | **Player (Number or Name)** | The player. Empty: the screen shows Team Official. |
| 4 | Yellow Card | **Card / Penalty** | The card or penalty kinds switched on in the rules of the discipline. |
| 5 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 6 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.5 Accumulated Fouls

Key: Fouls. Futsal only. The accumulated team fouls of both teams in the period: a dot per foul up to the warning value (5), the number, and the state. Live. No fields.

- At the warning (5th foul) the team's row shows "Next Foul: DFKSAF"; from the 6th foul "Direct Free Kick from the Second Penalty Mark". Fouls over the warning value mark the dots in their own colour.
- The period name is shown at the bottom.
- The fouls are given on the control panel (chapter 6).

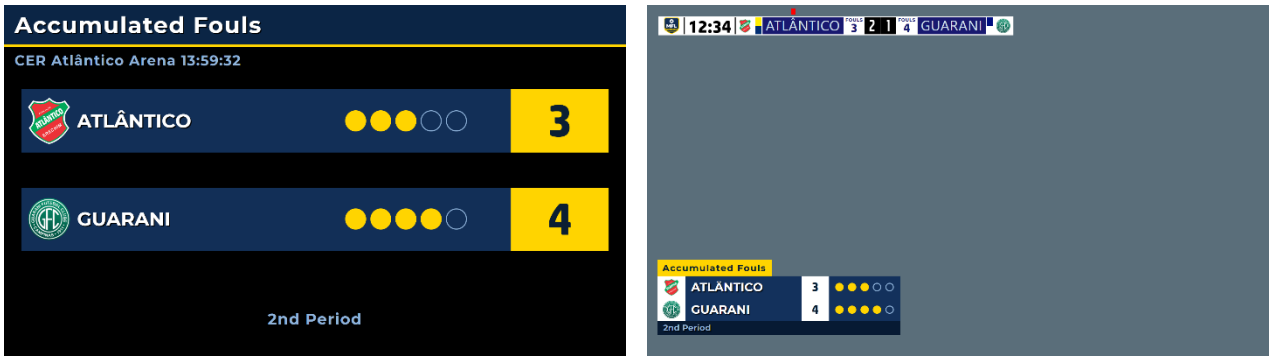



*Figure 62. Accumulated Fouls (3 and 4) on the St board and as a CK lower third.*

## 10.6 Power Play / One Short

Key: PowerPlay. Title "Power Play" in floorball, "One Short" in the other disciplines. The players on court of both teams (for example 5v4), the numerical reduction timer and the running penalties of each team. Live. No fields.

- Per team: the number of players on court, the timer of the reduction, and one row per timed penalty (shirt number, kind, time left; a penalty waiting for its turn is shown dimmed).
- The note: "Full Strength", "Equal Strength" or "<team> Plays Short-Handed".

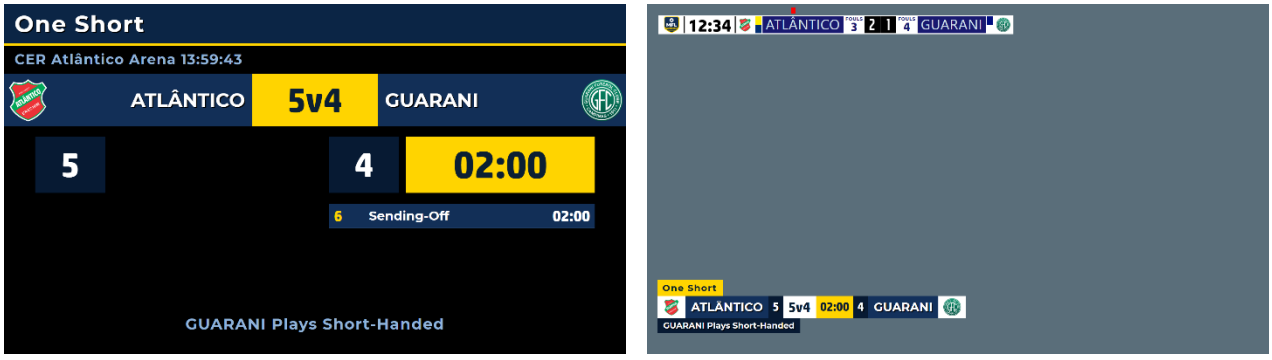



*Figure 63. Guarani plays one short (5v4) after the sending-off of no. 6.*

## 10.7 Timeout

Key: Timeout. Futsal and floorball (the disciplines with timeouts). The score, the team that called the timeout, the countdown and the timeouts left of both teams. Live.

| Field | Values |
|---|---|
| "Team Taking the Timeout" | The home or the guest team. |

- When a timeout runs, the screen follows it: the field is set to that team and the countdown runs on the board.

- When no timeout runs and the game clock is stopped, Show starts a timeout for the team in the field, if it has one left.
- The pips: one per allowed timeout, filled while it is still available.
- The period name is shown with the pips.

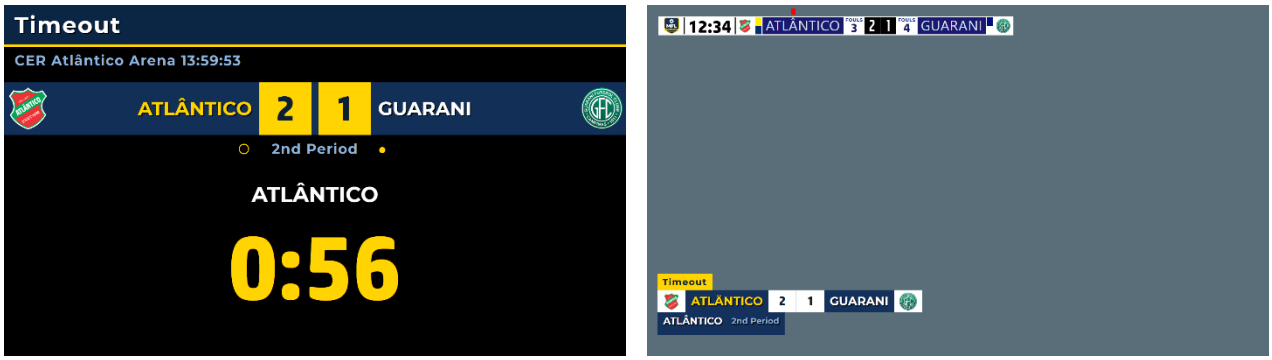



*Figure 64. A home timeout (0:56 left) on the St board, and the Timeout lower third.*

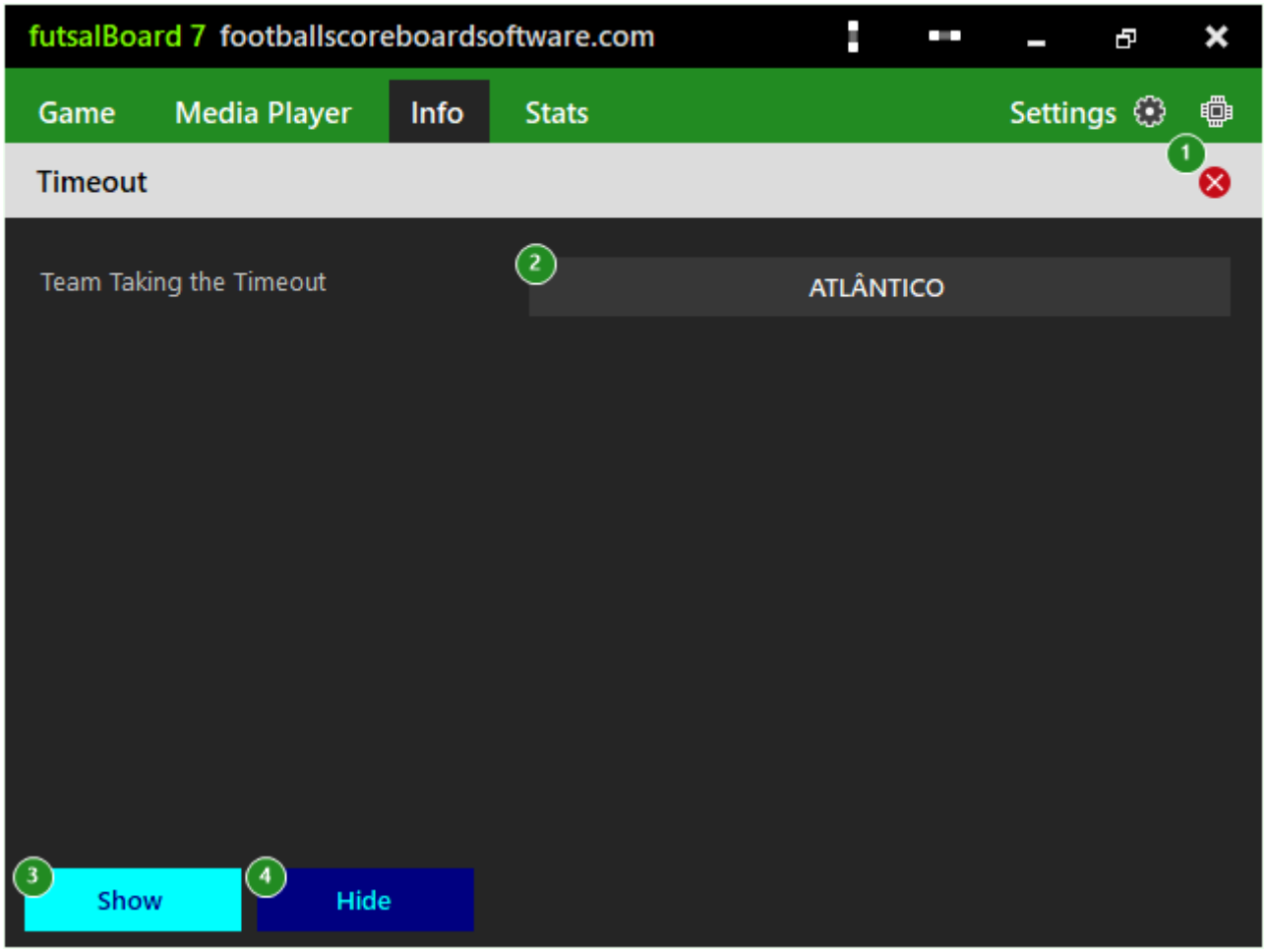



*Figure 65. The editor of Timeout.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 2 | ATLÂNTICO | **Team Taking the Timeout** | The team of the timeout. Follows a running timeout; with no timeout running and the clock stopped, Show starts one for this team. |
| 3 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 4 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.8 Penalty Kick

Key: Penalty. Futsal, beach soccer and floorball. The taker with photo, number and name, the goalkeeper, the score with the shooting team marked, and the result.

| Field | Values |
|---|---|
| "Shooting Team" | The home or the guest team. |
| "Kind" | Futsal: Penalty Kick, Second Penalty Mark Kick. Beach soccer: Penalty Kick. Floorball: Penalty Shot. The kind is the title of the screen. |
| "Taker (Number or Name)" | The player of the shooting team. |
| "Goalkeeper (Number or Name)" | The goalkeeper, looked up in the list of the other team. |
| "Result" | Pending (no result shown), Scored, Saved, Missed. Each result has its own colour. |

- The screen does not change the score: count a scored penalty with the goal button of the control panel.




*Figure 66. A scored penalty kick on the St board and as a CK lower third.*

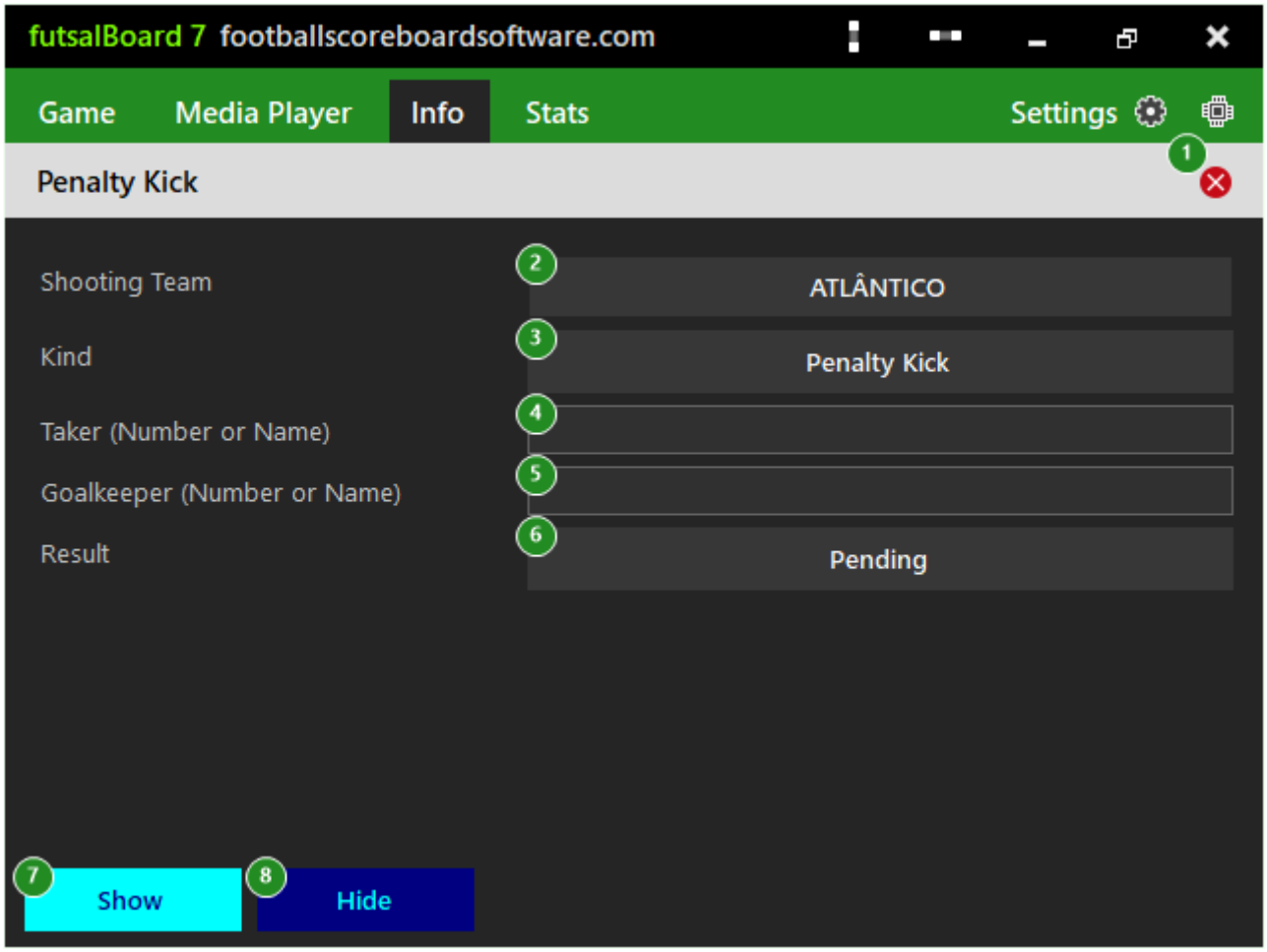



*Figure 67. The editor of Penalty Kick.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 | ATLÂNTICO | **Shooting Team** | The team taking the penalty. |
| 3 | Penalty Kick | **Kind** | Penalty Kick, Second Penalty Mark Kick (futsal), Penalty Kick (beach soccer), Penalty Shot (floorball). The title of the screen. |
| 4 | | **Taker (Number or Name)** | The player taking the penalty. |
| 5 | | **Goalkeeper (Number or Name)** | The goalkeeper, looked up in the list of the other team. |
| 6 | Pending | **Result** | Pending (no result shown), Scored, Saved, Missed. |
| 7 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 8 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.9 Shoot-Out

Key: Shootout. Futsal, beach soccer and floorball. Title: "Kicks from the Penalty Mark" (futsal), "Shoot-Out" (beach soccer), "Penalty Shots" (floorball). The attempts of both teams and the shoot-out score. Live. No fields.

- One mark per kick: scored, missed, and the next kick of the team that kicks next. After the regular kicks a separator divides the sudden-death kicks.
- The line under the table: "Kick 1 of 5" ..., "Sudden Death", and when the shoot-out is decided "<team> Wins".
- The kicks are entered on the control panel (chapter 6).




*Figure 68. The start of the kicks from the penalty mark (Kick 1 of 5).*

## 10.10 Period Result

Key: PeriodResult. A table of the goals per period with the team logos and names, and the total. Live. No fields.

| Moment | Title |
|---|---|
| The clock stopped at the end of a period that is followed by half-time | "Half-Time" |
| The clock stopped at the end of another period | "End of <period>", for example End of 1st Period |
| During a period | "Score" |

- One column per period played, with its board label (P1, P2, E1, Q3, OT ...); the period in play has its own colour. A column "SO" shows the shoot-out goals, "Total" the score.
- Won periods have their own colour; when the match is over the winner's row is highlighted and "<team> Wins" is shown.
- The note under the table: the period and the clock during play, the shoot-out score, "Golden Goal", "Two-Goal Lead", or "Level After Extra Time: Play Until a Team Leads by Two Goals" (netball).

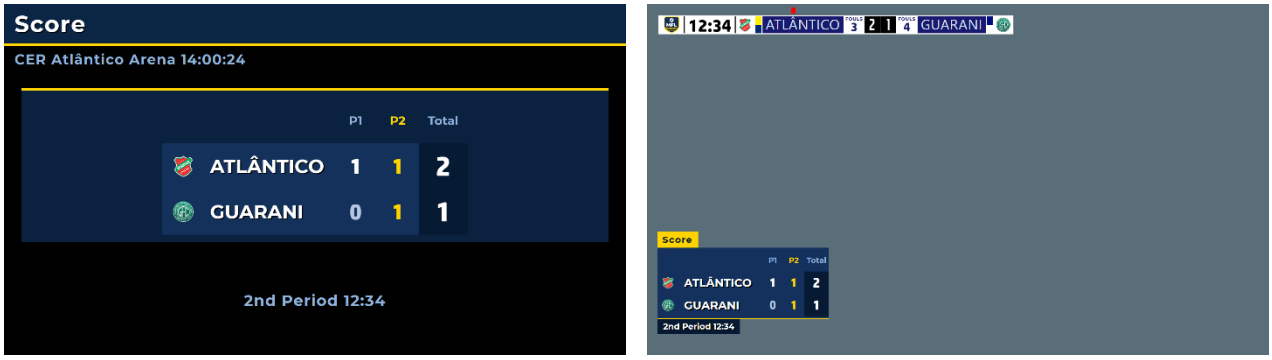



*Figure 69. During the 2nd period: the title is Score, P2 is the period in play.*

## 10.11 Match Result

Key: MatchResult. The same table as Period Result, made for the end of the match. Live. No fields.

- When the match is over (a decided shoot-out, a golden goal, a two-goal lead, or the end of the last period with a winner) the title is "Match Result", the winner is highlighted and "<team> Wins" is shown.
- Before that the title is "Score".

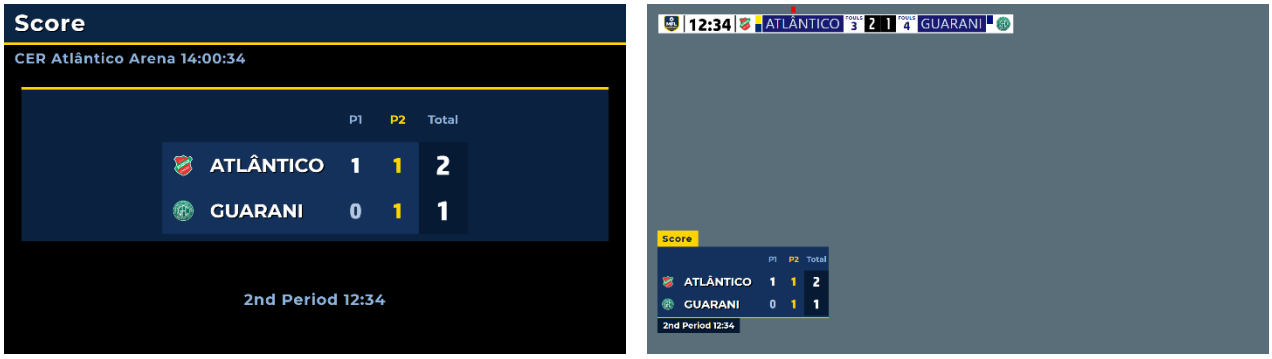



*Figure 70. Match Result during the match (title Score).*

## 10.12 Substitution

Key: Substitution. The team with its logo, the player going out and the player coming in, each with photo, number and name.

| Field | Values |
|---|---|
| "Team" | The home or the guest team. |
| "Player Out (Number or Name)" | The player leaving the court. |
| "Player In (Number or Name)" | The player entering the court. |




*Figure 71. A substitution of Atlântico (7 out, 12 in; these numbers are not in the demo list, so no names or photos are shown).*

## 10.13 Starting Lineup

Key: Lineup. The starters of a team with photo, number and name, and the coach.

| Field | Values |
|---|---|
| "Team" | The home or the guest team. |

- The starters are the first players of the "Starting 5" group of the player list, as many as players on court (5 futsal and beach soccer, 6 floorball, 7 netball; chapter 8.3).
- The coach is the first person of the "Trainer" group, with the label "Coach".

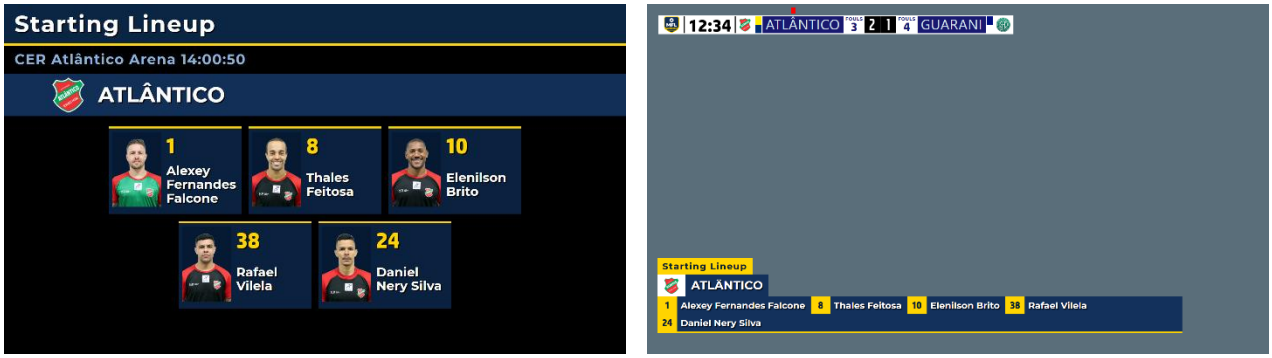



*Figure 72. The starting five of Atlântico on the St board and as a CK lower third.*

## 10.14 Player Intro

Key: Intro. A profile card of one player: photo, number, name, team and a note.

| Field | Values |
|---|---|
| "Team" | The home or the guest team. |
| "Player (Number or Name)" | The player. Empty: the first player of the Starting 5 group. |
| "Note (Captain, Caps, Club)" | A free text under the team, for example Captain. |

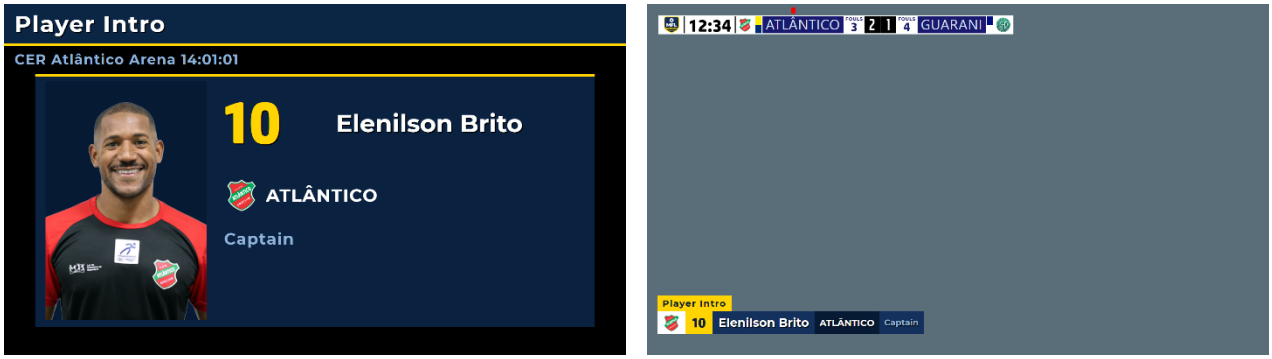



*Figure 73. Player Intro with the note Captain.*

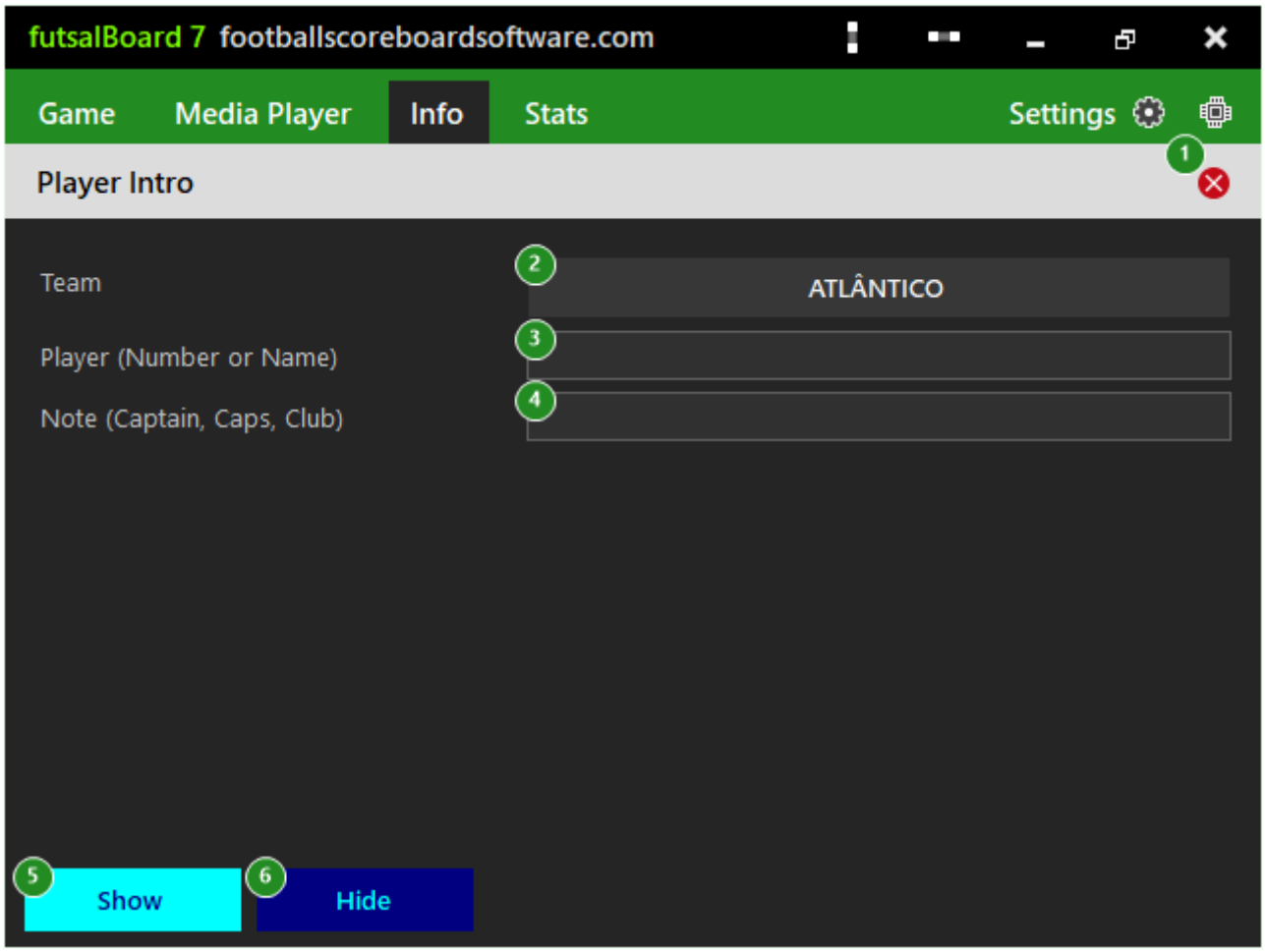



*Figure 74. The editor of Player Intro.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 | ATLÂNTICO | **Team** | The team of the player. |
| 3 | | **Player (Number or Name)** | The player. Empty: the first player of the Starting 5 group. |
| 4 | | **Note (Captain, Caps, Club)** | A free text shown under the team. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 5 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 6 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.15 Player of the Match

Key: Potm. An award card: photo, number, name, team and up to three figures.

| Field | Values |
|---|---|
| "Award" | Player of the Match, Top Scorer, Best Goalkeeper (not in netball), Best Player. The award is the title of the screen. |
| "Team" | The home or the guest team. |
| "Player (Number or Name)" | The player. |
| "Goals", "Assists", "Saves" | Numbers (digits only). Assists and Saves are not in netball. An empty figure is left out. |

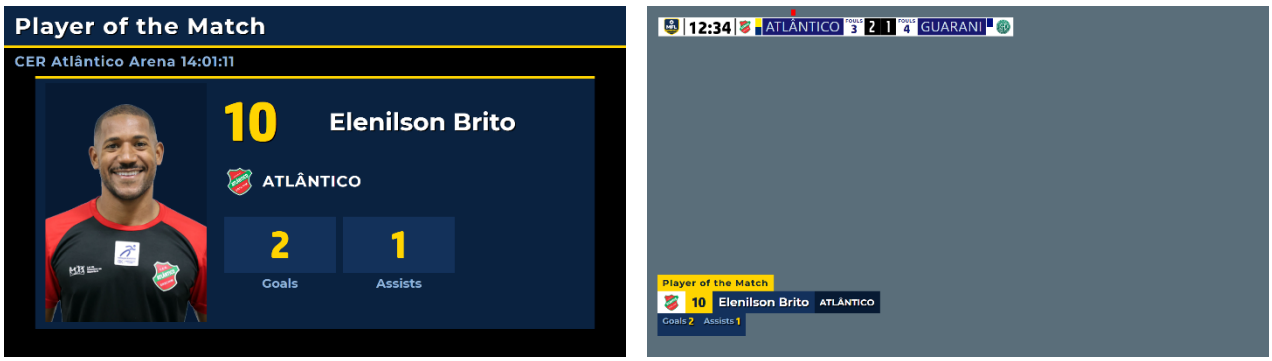



*Figure 75. Player of the Match with Goals 2 and Assists 1.*

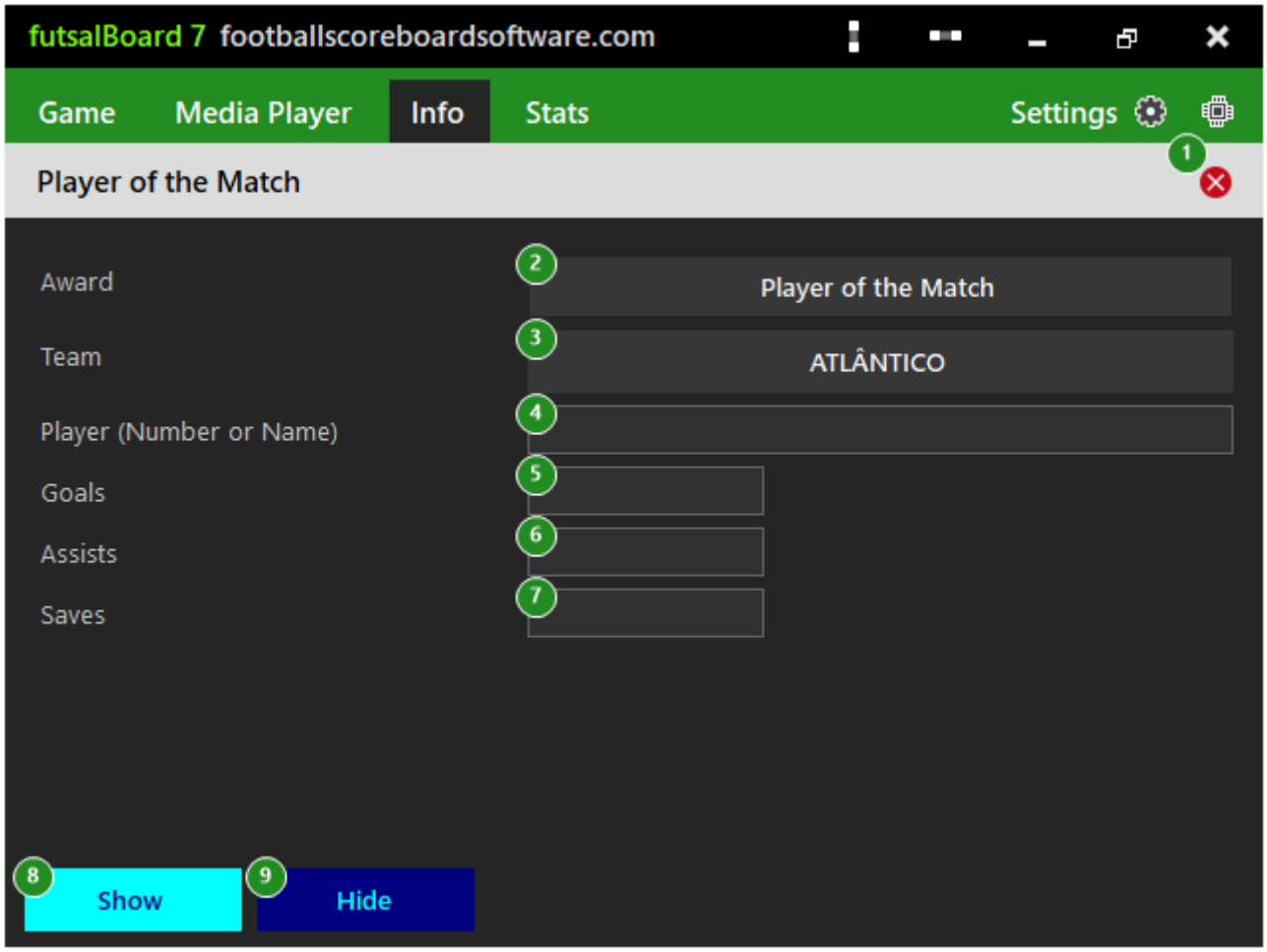



*Figure 76. The editor of Player of the Match.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 | | **Award** | Player of the Match, Top Scorer, Best Goalkeeper (not in netball), Best Player. The title of the screen. |
| 3 | | **Team** | The team of the player. |
| 4 | | **Player (Number or Name)** | The player of the award. |
| 5 | | **Goals** | Number of goals (digits only). Empty: not shown. |
| 6 | | **Assists** | Number of assists (digits only; not in netball). Empty: not shown. |
| 7 | | **Saves** | Number of saves (digits only; not in netball). Empty: not shown. |
| 8 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 9 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.16 Match Statistics

Key: Stats. The score and the statistics table of the Stats tab: one row per statistic with the home value, the label and the guest value. No fields.

- The higher value of a row is highlighted, and a bar shows the share of both teams when the values are numbers (56% and 44%, 5 and 10 ...).
- Rows that are completely empty are skipped.
- Enter the statistics on the Stats tab (chapter 4).

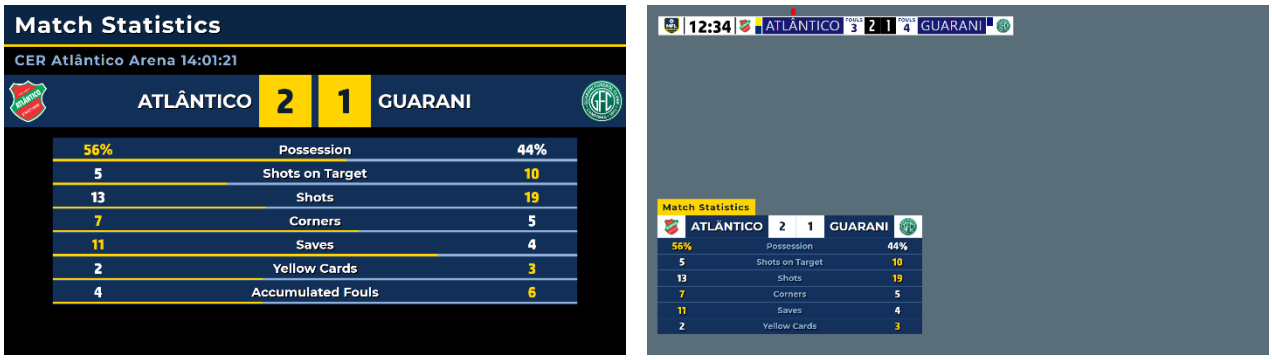



*Figure 77. The demo statistics on the St board and as a CK lower third.*

## 10.17 Standings

Key: Standings. The league table of the Stats tab: position, logo, team, played, won, drawn, lost, goal difference and points (columns Pos, Team, P, W, D, L, +/-, Pts). The two teams of the match are highlighted when their names in the table are the same as on the Game tab.

| Field | Values |
|---|---|
| "Heading (Competition, Group)" | The line under the title, in place of the subtitle. Empty: the subtitle of the Game tab. |




*Figure 78. The demo standings on the St board and as a CK lower third.*

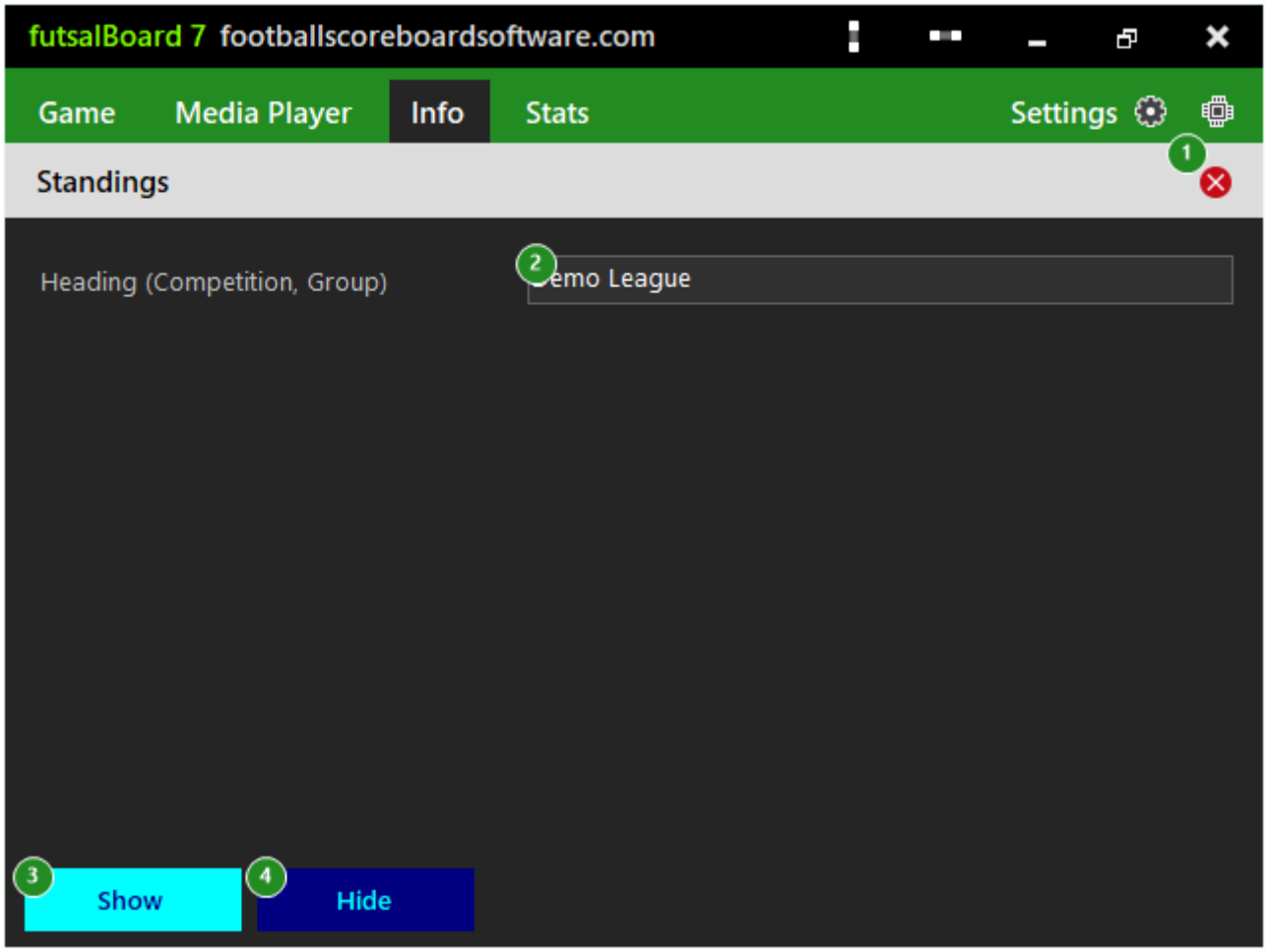



*Figure 79. The editor of Standings.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 |  | **Heading (Competition, Group)** | The line under the title of Standings, in place of the subtitle. |
| 3 |  | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 4 |  | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.18 Results

Key: Results. The results list of the Stats tab: date rows, and per match the type (for example FT), the home team and logo, the score ("-" when there is none yet) and the guest team and logo.

| Field | Values |
|---|---|
| "Heading (Round, Day)" | The line under the title, in place of the subtitle. |




*Figure 80. The demo results on the St board and as a CK lower third.*

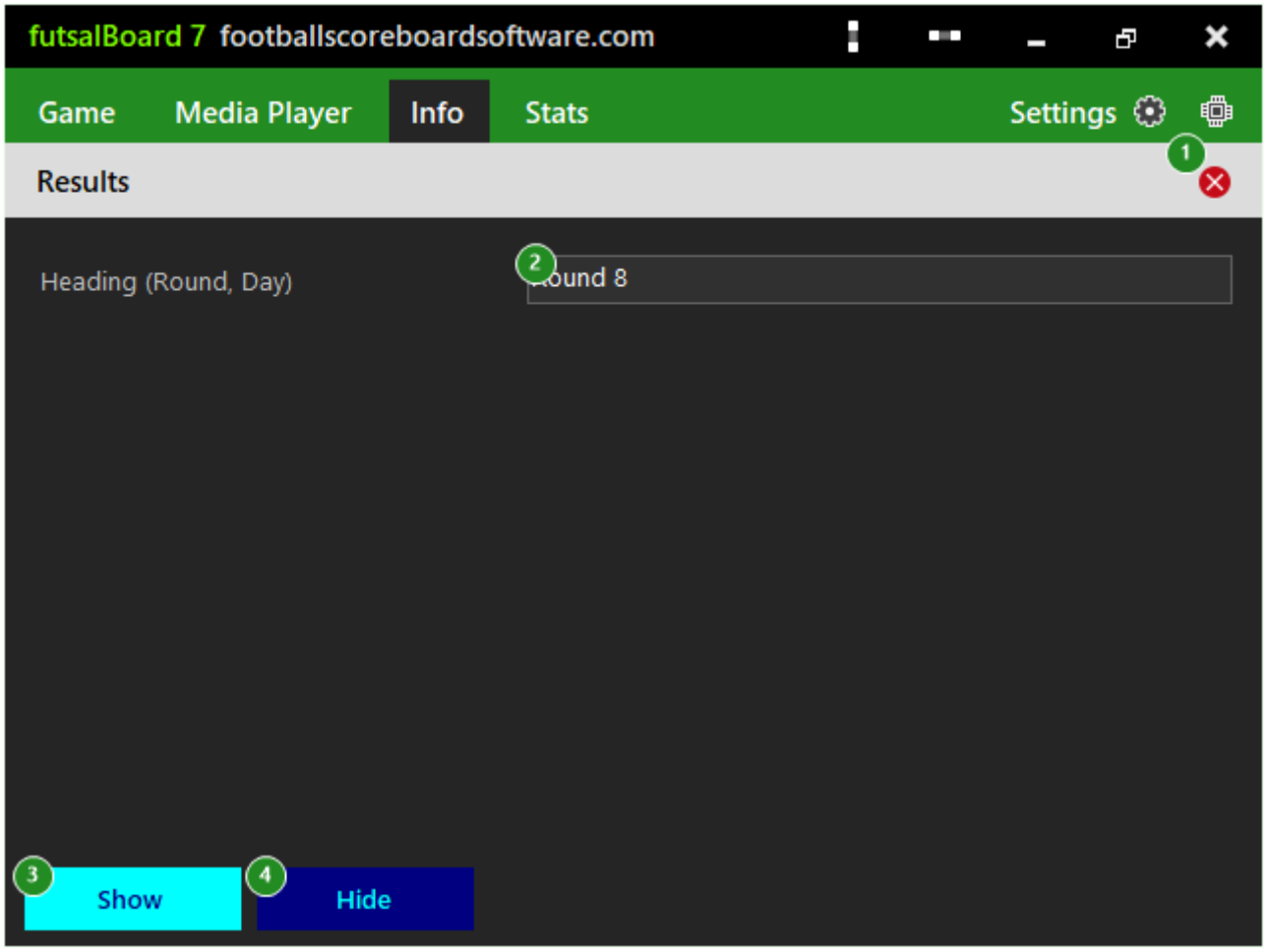



*Figure 81. The editor of Results.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 |  | **Heading (Round, Day)** | The line under the title of Results, in place of the subtitle. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 3 | Show | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 4 | Hide | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.19 Officials

Key: Officials. The match officials: role, name and country code (shown in capitals). The first row is emphasised.

| Field | Values |
|---|---|
| "Officials" (list) | Columns "Role", "Name", "Country". Click the last empty row to add an official; select a row and press Delete to remove it. A change is saved when you leave the cell. |

- When the list is empty, the screen takes the names of the referee list (Classic Screens > "Referees", section 10.22) with the roles Referee, Second Referee, Third Referee and Timekeeper.
- The new installation lists four fictional officials: Referee Daniel Moreau, Second Referee Lukas Brandt, Third Referee Marta Silvano and Timekeeper Elif Arda. The referee list (section 10.22) has the same four names.

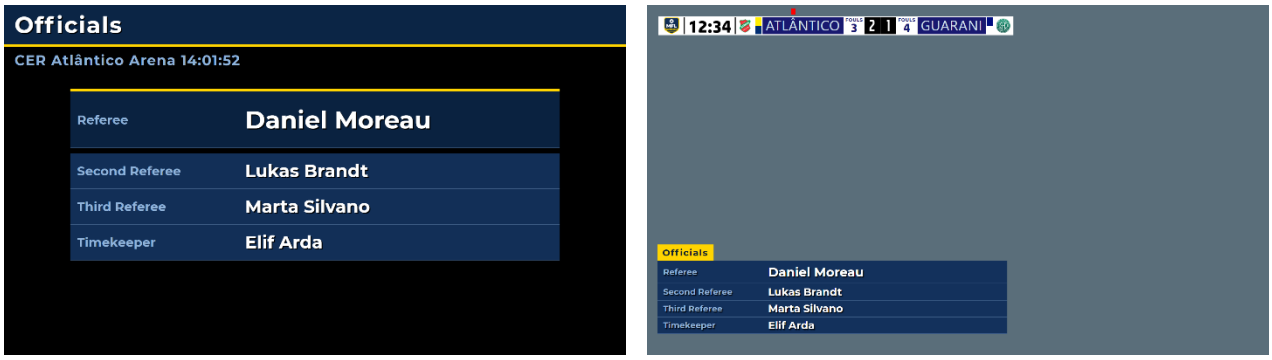



*Figure 82. The officials of the demo match.*

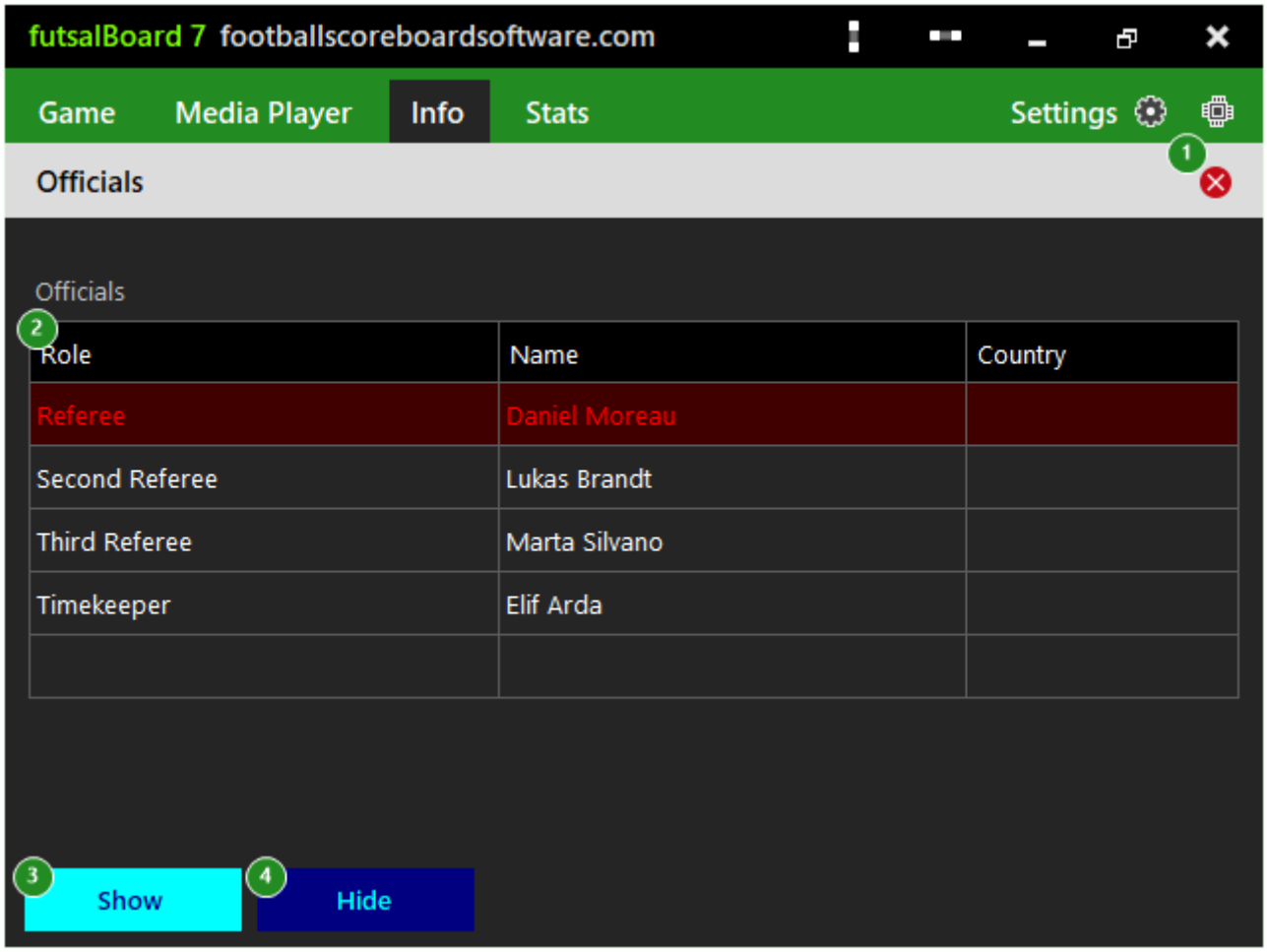



*Figure 83. The editor of Officials with its list.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The screen stays on air. |
| 2 |  | **Officials** | Role, Name and Country of each official. The last empty row adds an official; Delete removes the selected row. Saved when you leave a cell. |
| 3 |  | **Show** | Puts the screen on the active display: St, Sp, Ad the full page, CK the lower third. |
| 4 |  | **Hide** | Takes the info screen off: back to the scoreboard (CK: the lower third goes off). "On Air: <screen>" is shown next to it while a screen is on air. |

## 10.20 Video Support

Video Support shows a video review on the board: what is checked, the review and the decision. Open Info > "Classic Screens" > "Video Support".

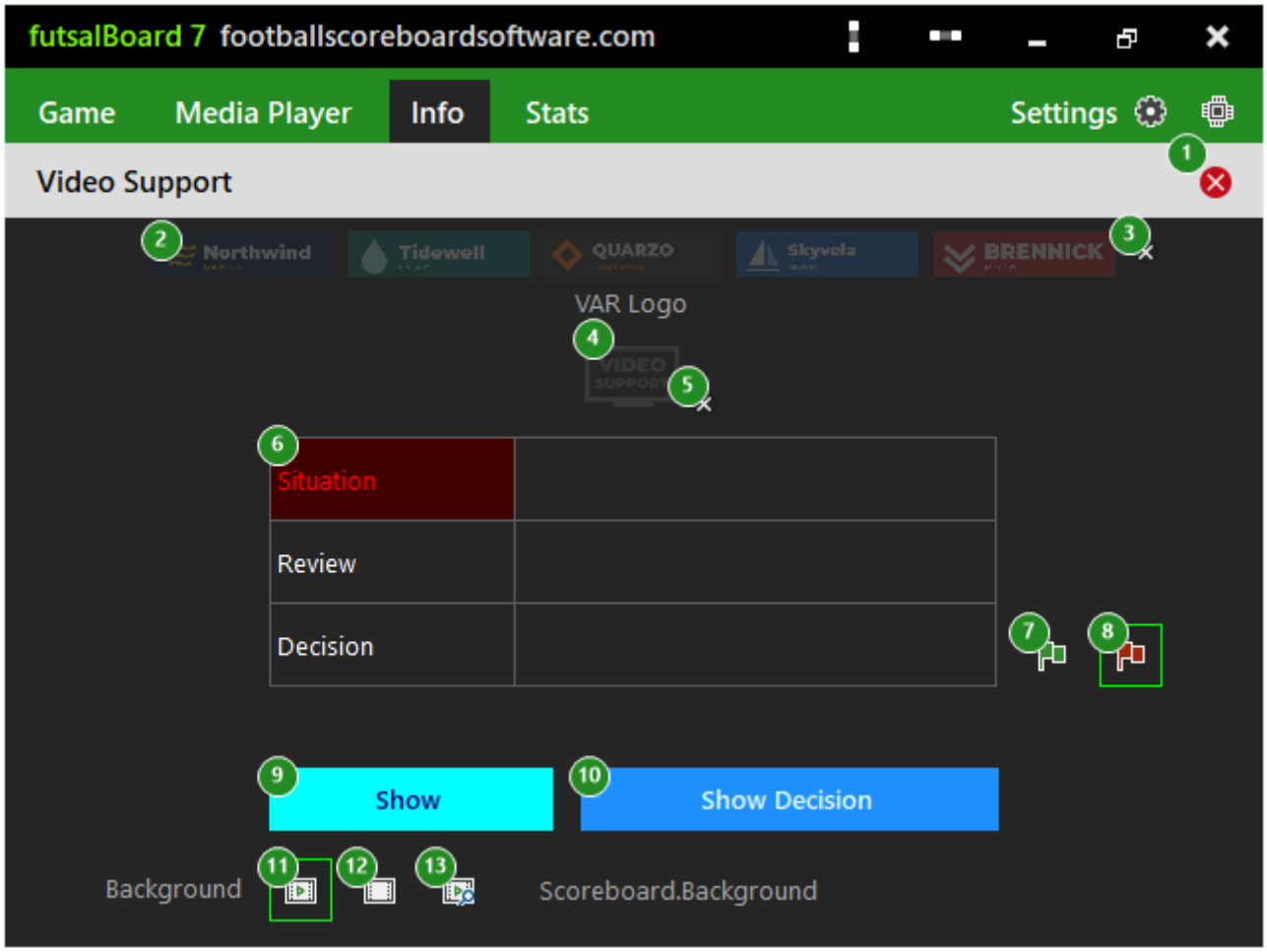



*Figure 84. The Video Support editor.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The screen stays on the board. |
| 2 |  | **Sponsor logos** | The first five logos of the sponsor list. Click one to show it on the screen. |
| 3 |  | **Remove sponsor (X)** | Removes the sponsor from the screen. |
| 4 |  | **Logo** | Click to show the Video Support logo on the screen. |
| 5 |  | **Remove logo (X)** | Removes the Video Support logo from the screen. |
| 6 |  | **Situation / Review / Decision** | Three rows: label (may be changed) and text. Shift + Enter starts a new line. |
| 7 |  | **Positive (green flag)** | The decision is positive. Green frame = chosen. |
| 8 |  | **Negative (red flag)** | The decision is negative. Green frame = chosen. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 9 |   | **Show** | Saves the texts and shows the check: Situation and Review with their texts. |
| 10 |   | **Show Decision** | Saves the texts and shows the decision in the style of the chosen flag. |
| 11 |  | **Use Scoreboard Background** | The scoreboard's background video behind the screen. Green frame = chosen. |
| 12 |  | **Use Black Background** | A black background. Green frame = chosen. |
| 13 |  | **Use Selected Background** | A video or picture of your own; the folder button chooses the file. Green frame = chosen. |

| Control | What It Does |
|---|---|
| Sponsor logos (top row) | The first five logos of the sponsor list (chapter 12.3). Click one to show it on the screen; the X removes the sponsor. The same sponsor choice is used by Banner and Announce. |
| Logo box (top centre) | Click the picture to show the Video Support logo on the screen; the X removes it. |
| The table | Three rows: "Situation", "Review" and "Decision". The left cell is the label (you may change it), the right cell the text. Shift + Enter starts a new line in a cell. |
| Green flag, red flag | The decision is positive (green flag) or negative (red flag). The chosen flag has a green frame; the decision is shown in the matching style. |
| "Show" | Shows the check: the labels Situation and Review as headings, with their texts below. |
| "Show Decision" | Shows the decision: the Decision label in the style of the flag, and its text. |
| "Background" | "Use Scoreboard Background", "Use Black Background", or "Use Selected Background" with a folder button to choose a video or picture. The chosen option has a green frame. |

- The texts are saved when you click Show or Show Decision.
- Click the Game tab to go back to the scoreboard. The X of the editor or Esc only closes the editor.
- In the CK mode, Video Support is on the CK page (Classic Screens): there the title bar is pink, sponsor and background are not offered, and a "Hide" button takes the lower third off.




*Figure 85. Video Support on the board: the Situation and Review headings over the background video.*

## 10.21 Banner and Announce

### 10.21.1 Banner

A full-screen banner with a top line, a second line and a main text, for example the venue, a hashtag and the start time of the match. Open Info > "Banner".




*Figure 86. The banner on the board: CER ARENA, #ATLvsGUR and the countdown to 19:00 over the team logos.*

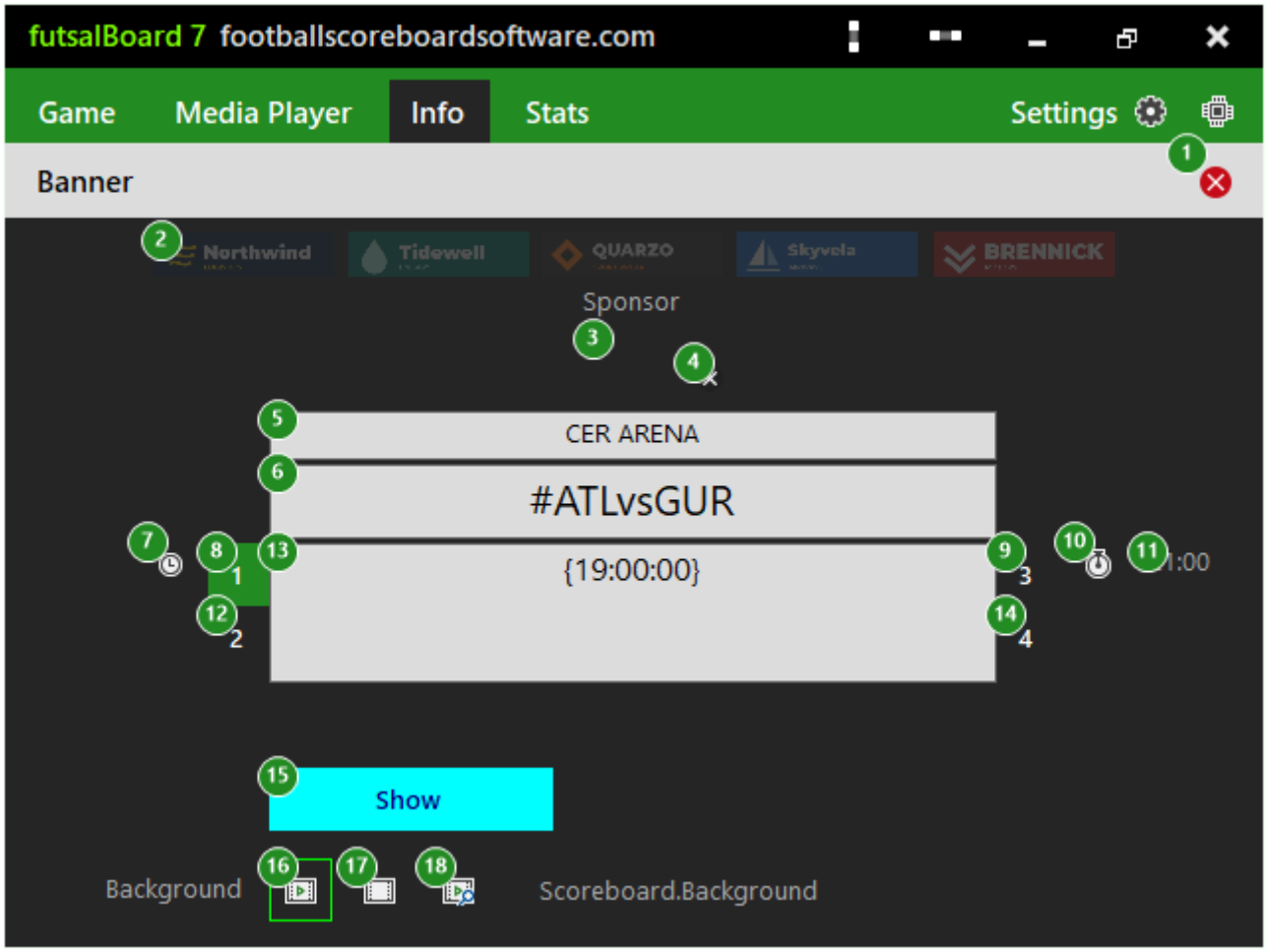
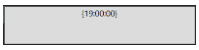



*Figure 87. The Banner editor.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The banner stays on the board. |
| 2 |  | **Sponsor logos** | The first five logos of the sponsor list. Click one to show it on the banner. |
| 3 |  | **Sponsor** | The sponsor chosen for the banner. |
| 4 |  | **Remove sponsor (X)** | Removes the sponsor from the banner. |
| 5 |  | **Top line** | The top line of the banner. |
| 6 |  | **Second line** | The second line of the banner. |
| 7 |  | **Show Clock** | Puts {00:00} into the main text (time of day); click again for {00:00:00} with seconds. |
| 8 |  | **1** | Version 1 of the main text. |
| 9 |  | **3** | Version 3 of the main text. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 10 |  | **Show Remaining Time** | Puts the time of the time box into the main text, for example {21:00}: a countdown to that time. Click again for seconds. |
| 11 |  | **Time** | The target time of the countdown (hh:mm). Another entry becomes 23:59. |
| 12 |  | **2** | Version 2 of the main text. |
| 13 |  | **Main text** | The main text of the selected version (1-4). {00:00} shows the time of day, {21:00} counts down to 21:00. |
| 14 |  | **4** | Version 4 of the main text. |
| 15 |  | **Show** | Saves the texts and puts the banner on the board. |
| 16 |  | **Use Scoreboard Background** | The scoreboard's background video behind the banner. Green frame = chosen. |
| 17 |  | **Use Black Background** | A black background. Green frame = chosen. |
| 18 |  | **Use Selected Background** | A video or picture of your own; the folder button chooses the file. Green frame = chosen. |

| Control | What It Does |
|---|---|
| Sponsor logos and the large sponsor picture | Click one of the first five logos of the sponsor list to show it on the banner; the large picture shows the choice, its X removes it. |
| Top text box, second text box | The top line and the second line of the banner. |
| Main text box with the buttons 1-4 | The main text. It has four versions; the selected version is shown and saved with Show. The top and second lines are the same for all four. |
| "Show Clock" (clock icon) | Puts {00:00} into the main text: the board shows the time of day. Click again for {00:00:00} with seconds. |
| "Show Remaining Time" (timer icon) and the time box | Puts the time of the box, for example {21:00}, into the main text: the board counts down to that time today, or tomorrow when it has passed. Click again for seconds ({21:00:00}). The time box takes hh:mm; another entry becomes 23:59. |
| "Show" | Saves the texts and puts the banner on the board. |
| "Background" | As for Video Support: scoreboard background video, black, or a selected video or picture. |

- The clock and countdown buttons are shown while you type in the main text box. A red X next to the box you are in empties it.
- The clock and the countdown work when the main text holds only the code; any other text is shown as typed.

- The banner shows the team logos where its design has them.
- Click the Game tab to go back to the scoreboard. The X of the editor or Esc only closes the editor.

### 10.21.2 Announce

A full-screen announcement in large letters. Open Info > "Announce".

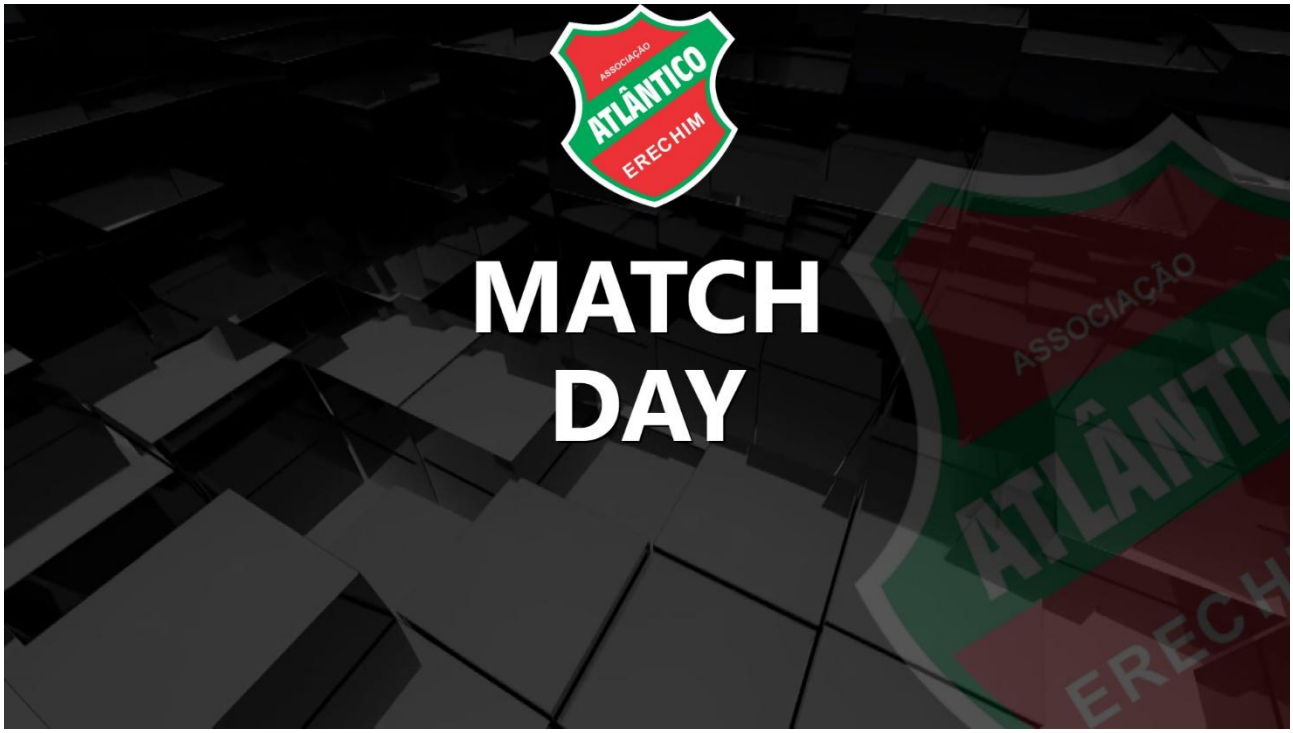



*Figure 88. The announcement "MATCH DAY" with the home team logo.*

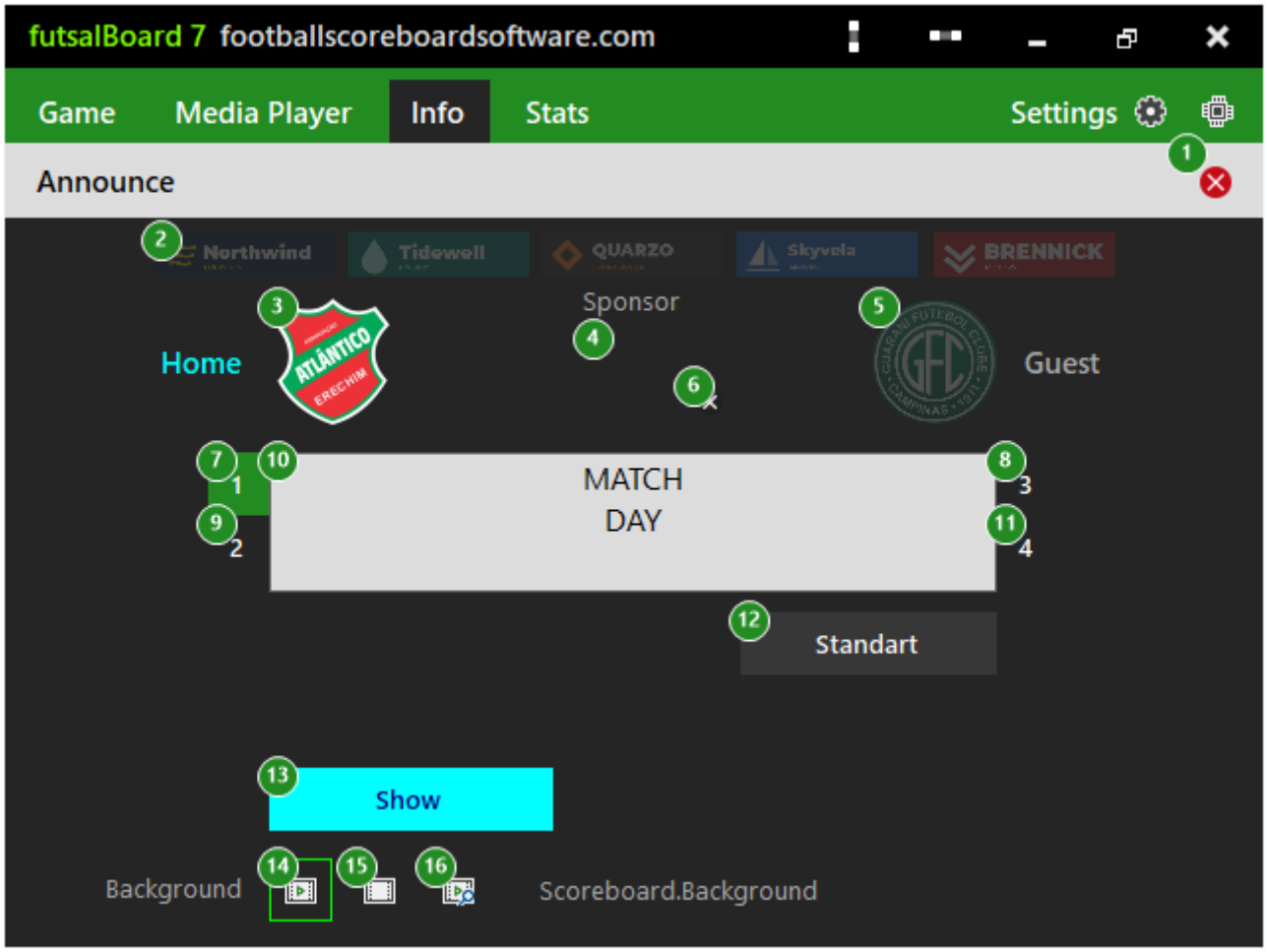
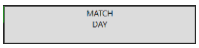
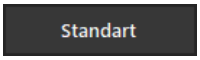



*Figure 89. The Announce editor.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the editor; Esc does the same. The announcement stays on the board. |
| 2 |  | **Sponsor logos** | The first five logos of the sponsor list. Click one to show it on the announcement. |
| 3 |  | **Home logo** | Shows the home team logo on the announcement (the other logo is dimmed). |
| 4 |  | **Sponsor** | The sponsor chosen for the announcement. |
| 5 |  | **Guest logo** | Shows the guest team logo on the announcement (the other logo is dimmed). |
| 6 |  | **Remove sponsor (X)** | Removes the sponsor from the announcement. |
| 7 |  | **1** | Version 1 of the text. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 8 |  | **3** | Version 3 of the text. |
| 9 |  | **2** | Version 2 of the text. |
| 10 |  | **Text** | The announcement of the selected version (1-4). |
| 11 |  | **4** | Version 4 of the text. |
| 12 |  | **Style** | Standart, Gradient, Shape, Stripe-H, Stripe-V, Stroke. Every style except Standart has a gear button for its values and colours. |
| 13 |  | **Show** | Saves the text and puts the announcement on the board. |
| 14 |  | **Use Scoreboard Background** | The scoreboard's background video behind the announcement. Green frame = chosen. |
| 15 |  | **Use Black Background** | A black background. Green frame = chosen. |
| 16 |  | **Use Selected Background** | A video or picture of your own; the folder button chooses the file. Green frame = chosen. |

| Control | What It Does |
|---|---|
| "Home" and "Guest" logos | Click the logo of the team to show on the announcement; the other one is dimmed. |
| Sponsor logos | As for the Banner. Banner, Announce and Video Support share one sponsor choice. |
| Text box with the buttons 1-4 | The announcement, in four versions. A red X empties the box. |
| Style list ("Standart") | Standart (plain text), Gradient (colour gradient), Shape (moving colour shapes), Stripe-H and Stripe-V (moving stripes), Stroke (outlined text in changing colours). |
| Gear button (all styles except Standart) | Opens the style values: font-family (with the font picker, chapter 11.5), font-size, font-weight, bottom, text-shadow and text-stroke as far as the style uses them, and the colour buttons of the style (two for Gradient and the stripes, five for Shape and Stroke). The disk button saves the values. |
| "Show" | Saves the text and puts the announcement on the board. |
| "Background" | As for the Banner. |

- Click the Game tab to go back to the scoreboard.

## 10.22 Classic Screens

"Classic Screens" on the Info tab opens the older screens of futsalBoard 7. "Info Screens" brings the 17 info screens back.

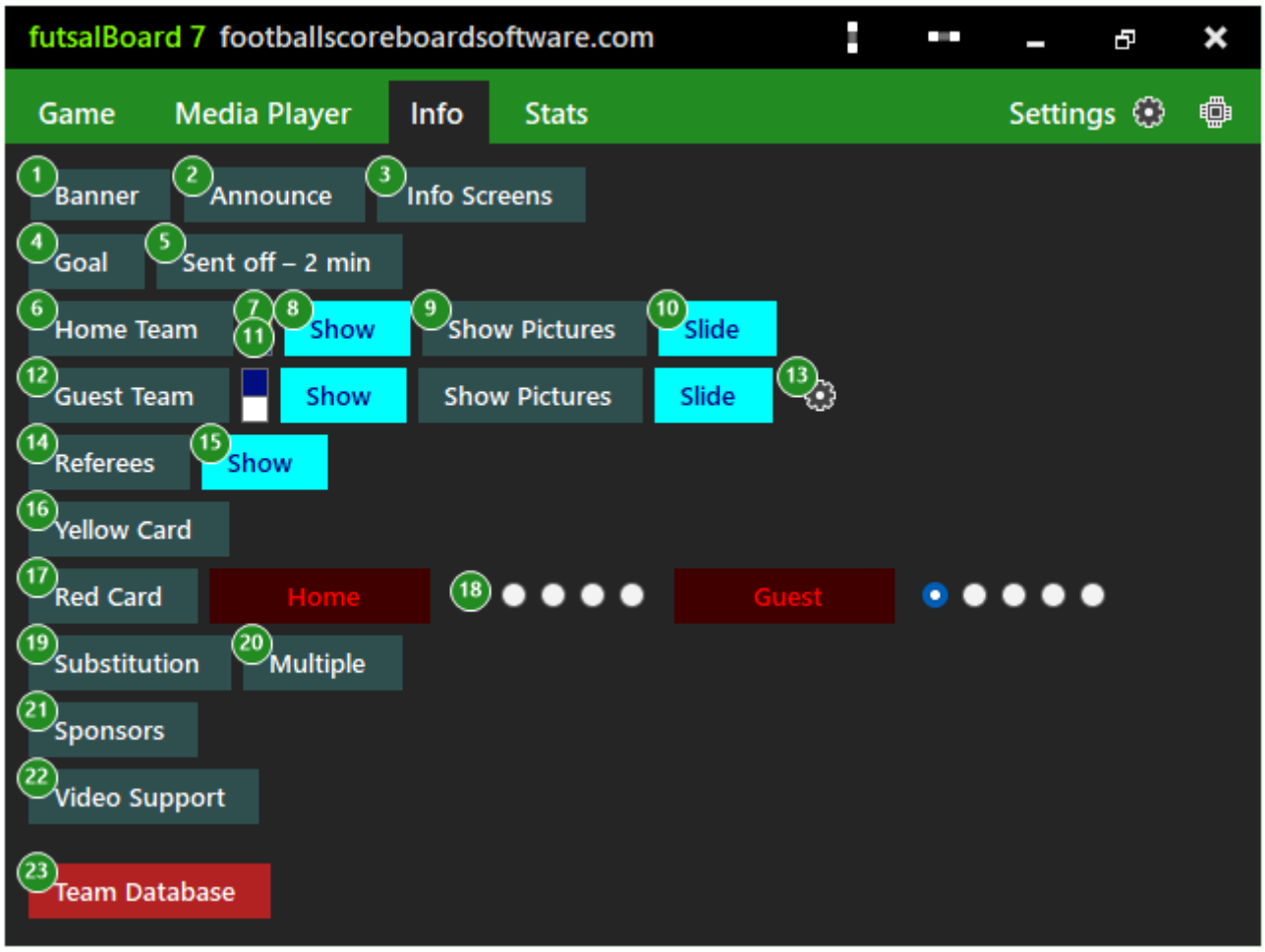
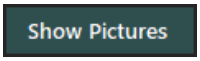
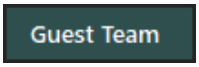
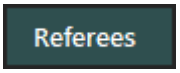
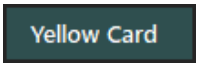
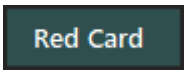
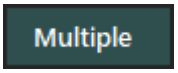
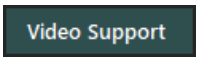
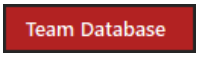



*Figure 90. Info > Classic Screens.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Banner | **Banner** | Opens the Banner editor. |
| 2 | Announce | **Announce** | Opens the Announce editor. |
| 3 | Info Screens | **Info Screens** | Goes back from the Classic Screens to the info screen buttons. |
| 4 | Goal | **Goal** | Opens the classic goal screen. |
| 5 | Sent off – 2 min | **Sent off – 2 min** | Opens the classic 2-minute screen (netball: Suspension – 2 min, floorball: 2-min penalty). |
| 6 | Home Team | **Home Team** | Opens the player list of the home team (chapter 8.3). |
| 7 | | **Home colour 1** | The first colour of the home team (CK scorebug, classic team list). Click to choose. |
| 8 | Show | **Show** | Shows the home team list on the board (CK: the Starting Lineup lower third). |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 9 |  | **Show Pictures** | Opens Show Pictures of the home team (chapter 12.4). |
| 10 |  | **Slide** | Shows the home players as a slide on the board. |
| 11 |  | **Home colour 2** | The second colour of the home team. Click to choose. |
| 12 |  | **Guest Team** | Opens the player list of the guest team (chapter 8.3). |
| 13 |  | **Background (gear)** | Opens the background of the classic team and referee screens and of the info screens: scoreboard background video, black, or a selected video. |
| 14 |  | **Referees** | Opens the referee list (names; Insert, Delete, Save). It is also the fallback of the Officials screen. |
| 15 |  | **Show** | Shows the referee screen on the board. |
| 16 |  | **Yellow Card** | Opens the classic yellow card screen. |
| 17 |  | **Red Card** | Opens the classic red card screen. |
| 18 |  | **Red card points (home)** | 0-4 red card symbols of the home team on the boards whose design shows them. The row of the guest team is on the right. |
| 19 |  | **Substitution** | Opens the classic substitution screen (one player). |
| 20 |  | **Multiple** | Opens the classic substitution screen for several players at once. |
| 21 |  | **Sponsors** | Opens the sponsor list (chapter 12.3). |
| 22 |  | **Video Support** | Opens the Video Support editor (chapter 10.20). |
| 23 |  | **Team Database** | Opens the team database (chapter 8.5). |

| Button | What It Does |
|---|---|
| "Banner", "Announce" | Section 10.21. |
| "Goal" | The classic goal screen: team, player, minute, kind of goal (also own goal or penalty), an animation, a picture, the sponsor and the background. "Add to Match Timeline" adds the goal to the match timeline (the Timeline screen). |
| "Sent off – 2 min" | The classic 2-minute screen. The text follows the discipline: "Suspension – 2 min" in netball, "2-min penalty" in floorball. |
| "Home Team", "Guest Team", colour boxes, "Show", "Show Pictures", "Slide" | The player lists and the team screens (chapter 8.3 and 8.6). |

| Button | What It Does |
|---|---|
| Gear button (next to the guest Slide) | Opens the background of the classic team and referee screens and of the info screens: scoreboard background video, black, or a selected video. |
| "Referees" and "Show" | The referee list (names; Insert, Delete, Save) and the referee screen on the board. The list is also the fallback of the Officials screen (section 10.19). |
| "Yellow Card", "Red Card" | The classic card screens (team, player, picture, sponsor, background, "Add to Match Timeline"). |
| Red card points (0-4, one row per team) | The number of red card symbols of the home (left) and the guest team (right) on the boards whose design shows them. |
| "Substitution", "Multiple" | The classic substitution screen for one player, and for several players at once. |
| "Sponsors" | The sponsor list (chapter 12.3). |
| "Video Support" | Section 10.20. |
| "Team Database" | Chapter 8.5. |

The classic screens fill the board window; the Game tab brings the scoreboard back.

## 10.23 CK Pages

In the CK mode the CK page of the menu bar has its own Info tab with the scorebug and the lower thirds. The buttons of the info screens are the same as on the Info tab of the main window and open the same editors; Show puts the lower third on the CK board.

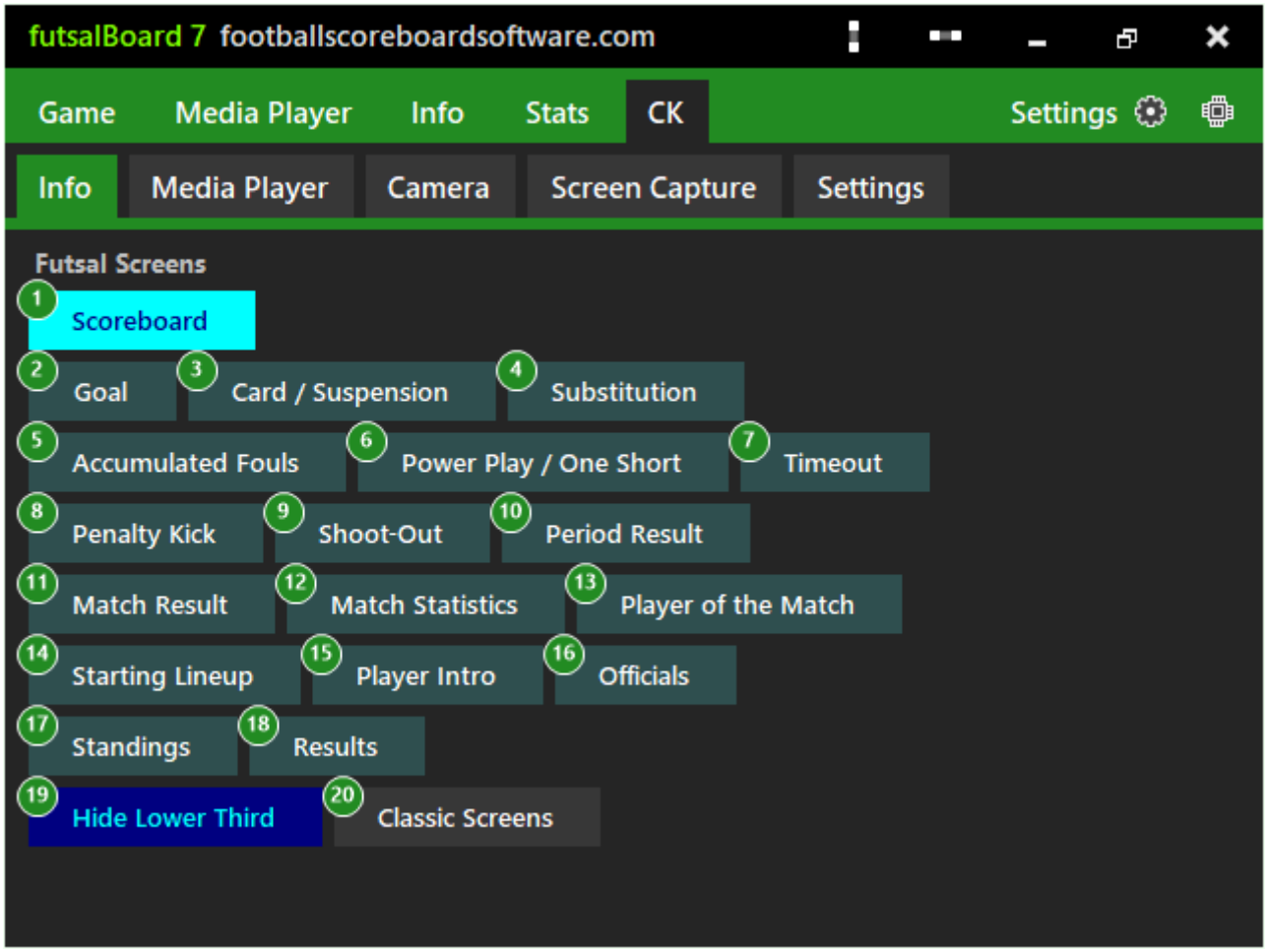
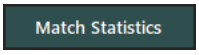
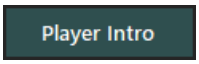
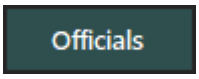
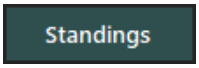
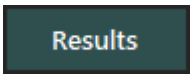
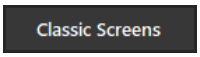



*Figure 91. The Info tab of the CK page.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Scoreboard | **Scoreboard** | Loads the scorebug on the CK board again. |
| 2 | Goal | **Goal** | Opens the editor of the Goal screen; Show puts the lower third on air. |
| 3 | Card / Suspension | **Card / Suspension** | Opens the editor of the Card / Suspension screen. |
| 4 | Substitution | **Substitution** | Opens the editor of the Substitution screen. |
| 5 | Accumulated Fouls | **Accumulated Fouls** | Opens the editor of the Accumulated Fouls screen (futsal). |
| 6 | Power Play / One Short | **Power Play / One Short** | Opens the editor of the Power Play / One Short screen. |
| 7 | Timeout | **Timeout** | Opens the editor of the Timeout screen (futsal, floorball). |
| 8 | Penalty Kick | **Penalty Kick** | Opens the editor of the Penalty Kick screen. |
| 9 | Shoot-Out | **Shoot-Out** | Opens the editor of the Shoot-Out screen. |
| 10 | Period Result | **Period Result** | Opens the editor of the Period Result screen. |
| 11 | Match Result | **Match Result** | Opens the editor of the Match Result screen. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 12 |  | **Match Statistics** | Opens the editor of the Match Statistics screen. |
| 13 |  | **Player of the Match** | Opens the editor of the Player of the Match screen. |
| 14 |  | **Starting Lineup** | Opens the editor of the Starting Lineup screen. |
| 15 |  | **Player Intro** | Opens the editor of the Player Intro screen. |
| 16 |  | **Officials** | Opens the editor of the Officials screen. |
| 17 |  | **Standings** | Opens the editor of the Standings screen. |
| 18 |  | **Results** | Opens the editor of the Results screen. |
| 19 |  | **Hide Lower Third** | Takes the lower third off; the scorebug stays. |
| 20 |  | **Classic Screens** | Shows the older CK lower thirds (Goal, Yellow Card, Red Card, Substitution, Video Support, Timeline, 2-minute screen), each with Hide. |

| Button | What It Does |
|---|---|
| "Scoreboard" | Loads the scorebug on the CK board again. |
| The screen buttons | Open the editor of the screen (sections 10.3 to 10.19). |
| "Hide Lower Third" | Takes the lower third off; the scorebug stays. |
| "Classic Screens" | The older CK lower thirds (below). "Info Screens" brings the screen buttons back. |

The classic CK screens: "Scoreboard", "Goal", "Yellow Card", "Red Card", "Substitution", "Video Support", "Timeline" and the 2-minute screen of the discipline ("Sent off – 2 min" ...), each with a "Hide" button. Hide next to Scoreboard takes the scorebug off; the other Hide buttons take the lower third off.

- The CK lower thirds come with the CK design (chapter 11.6). A CK design without its own info lower thirds uses those of the CK master Navy.

# 11. Designs and the Design Editor

Every board of futsalBoard 7 is a web page built from a design: a skeleton (which elements exist) and a layout (where each element is and how it looks). You choose a design in the gallery and change it element by element in the design editor.

## 11.1 Factory and Working Designs

The designs live in two folders under C:\futsalBoard7\common\vizrt:

| Folder | What It Holds | Written By |
|---|---|---|
| storage | The factory designs (the masters), the skeletons and screens of each board type, the CK master folders and the factory index dataBoardsFactory.xml. Also your saved designs (<GUID>.xml, for Ad also <GUID>_Segment.xml) and their list dataBoards.xml. | The setup (factory files); "Save Design As" and the gallery (your designs only) |
| current | The working copy: what the boards show now. One working scoreboard per board type (current\Game\St, current\Game\Ad, current\Game\CK), and the working copies of the classic screens, Banner, Announce, Video Support, the info screens and the CK lower thirds. | Apply in the gallery, the design editor, Factory Settings |

The program never writes into a factory design. Apply copies a design into the working copy, the design editor changes the working copy, Save Design As keeps the working scoreboard as a design of your own.

When you switch the display mode (chapter 9.1), the working scoreboard of the mode you leave is kept in current\Game\<type>, and the one of the new mode comes back. The Sponsored mode uses the Standard scoreboard (current\Game\St). Working files that are missing are filled in from storage at every mode switch, so a deleted working file comes back as the factory version.

The masters (names as in the gallery):

| Board Type | Masters | Factory Choice |
|---|---|---|
| St (also Sp) | "_Master - [St]andart Design [1]", "[2]", "[3]" | Design [1] |

| Board Type | Masters | Factory Choice |
|---|---|---|
| Ad | "_Master - [Ad]vertise Design [1]", "[2]", "[3]" | Design [3] |
| CK | "_Master - [CK]Chroma Key Design [1]", "_Master - [CK]Chroma Key Navy", "_Master - [CK]Chroma Key Charcoal", "_Master - [CK]Chroma Key Clay" | Chroma Key Design [1] |

- All Standard masters share one skeleton and one set of info screens, Banner, Announce and classic screens (storage\St); they differ in the layout of the scoreboard.
- A CK master is a folder (storage\CK\<GUID>) with its own scorebug and lower thirds. Navy, Charcoal and Clay bring the lower thirds of the 17 info screens; Chroma Key Design [1] has the classic CK lower thirds only and uses the info lower thirds of Navy.

## 11.2 Design Gallery

1. On the Game tab, choose the display mode (chapter 9.1).
2. Click "Select Design" (the button under CK). The gallery "Open Design" opens next to it.
3. Click a design in the list. The preview on the right shows it with the live match (score, clock, logos).
4. Click "Apply".

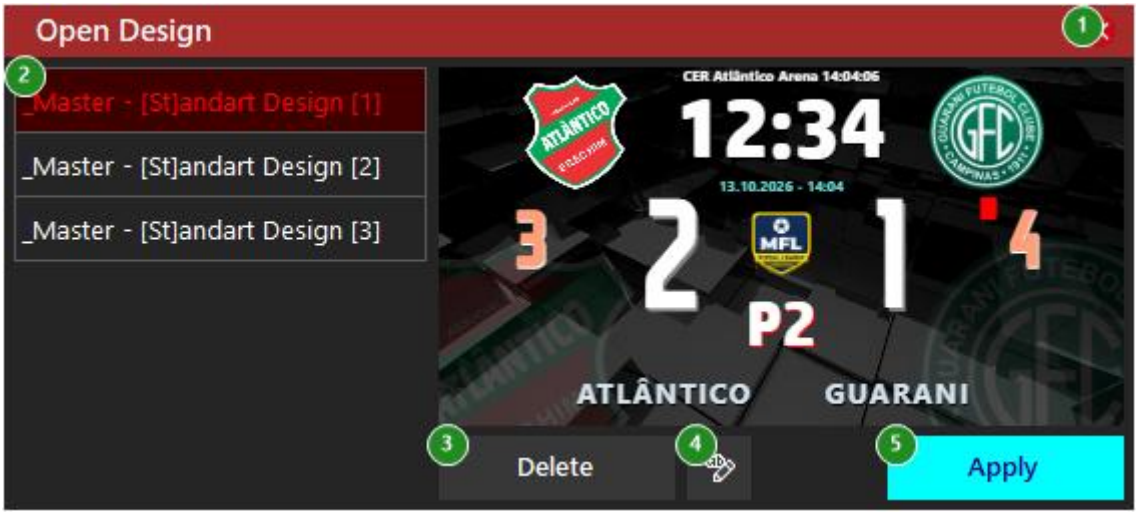
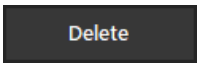



*Figure 92. The gallery "Open Design" with the three Standard masters and the preview.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the gallery without a change; Esc or a click outside does the same. |
| 2 |  | **Name** | The designs of the active board type, sorted by name. Click one: the preview shows it with the live match. |
| 3 |  | **Delete** | First click: the button turns red. Second click: deletes the selected design of your own. Does nothing on the masters. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 4 |  | **Rename** | Makes the name of the selected design editable; Enter keeps it. Does nothing on the masters. |
| 5 |   | **Apply** | Uses the selected design for the active display mode, redraws the board and closes the gallery. |

- The list shows the designs of the active board type, sorted by name: St designs in St and Sp, Ad designs in Ad, CK designs in CK.
- Esc, the X or a click outside the gallery closes it without a change.
- The gallery is also the preview: there is no separate preview window.

## 11.3 Apply, Rename, Delete, Save As

| Action | How | What Happens |
|---|---|---|
| Apply | Gallery, "Apply" | St and Sp: the layout of the chosen design becomes the working scoreboard; the board is redrawn and the gallery closes. The skeleton, the info screens and the other screens stay as they are. Ad: the same, and the layout of the scoreboard column and the banners stored with the design (the Ad masters and the Ad designs you saved have one) replaces the Settings of the Ad page (chapter 9.5). CK: the choice is stored, and the scorebug and the lower thirds of that master replace the working ones. |
| Rename | Gallery, the pencil button ("Rename") | The name in the list becomes editable; type the new name and press Enter. |
| Delete | Gallery, "Delete" | The first click colours the button red; a second click deletes the selected design (its files and its entry). There is no other question. |
| Save As | Design editor, the disk button "Save Design As" | Asks for a name ("Please Enter a Name") and keeps the working scoreboard as a design of your own: "The data has been successfully saved.". In the Ad mode it also keeps the layout of the scoreboard column and the banners. |

- The masters (every "_Master" design of the table in section 11.1) cannot be renamed or deleted: their name cannot be edited, and Rename and Delete do nothing on them.
- In the CK mode Save Design As is not available: the program shows "Sorry, Design Saving Is Not Supported For CK Mode Yet!".
- Save Design As keeps the scoreboard (Game) only. The info screens, Banner, Announce and the classic screens are not part of a saved design.
- A design saved or renamed in the Sp mode is a Standard design: it appears in the gallery of the St and the Sp modes.

## 11.4 The Design Editor

Open Settings and click the design button of the active display mode: "[St]andard Board Design", "[Sp]onsored Board Design", "[Ad]vertisement Board Design" or "[CK] Board Design". Only the button of the active mode is enabled. The editor fills the work area; its title shows the board type and the selected screen, for example "[St]andard Board Design - Game".

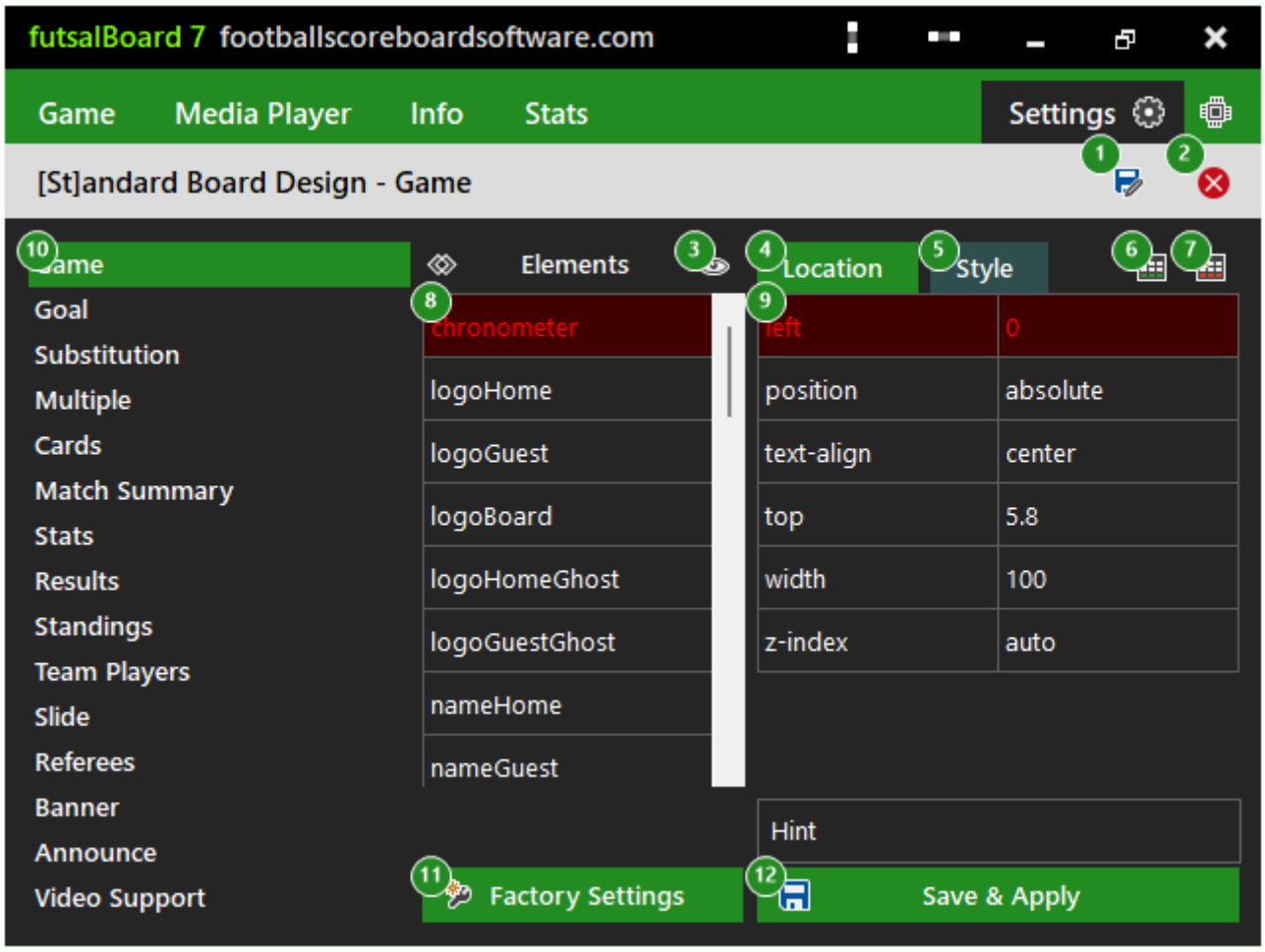
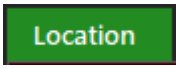
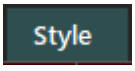
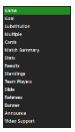
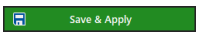



*Figure 93. The design editor of the Standard board with the Game screen and the element chronometer selected.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Save Design As** | Keeps the working scoreboard as a design of your own under a name (not in the CK mode). |
| 2 |  | **Close (X)** | Closes the editor; Esc does the same. |
| 3 |  | **Show or Hide** | Switches the selected element between shown and hidden (display block / none). Save & Apply makes it final. |
| 4 |  | **Location** | Shows the position and size values of the element. |
| 5 |  | **Style** | Shows the look values of the element (colours, font, size ...). |
| 6 |  | **Insert Row** | Adds an empty value row. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 7 |  | **Delete Row** | Removes the selected value row. |
| 8 |  | **Elements** | The objects of the selected screen; hidden ones are grey. Click one: the board frames it with a red dotted line. |
| 9 |  | **Values** | Property and value of the element. A colour property gets a colour picker button, font-family a font picker button. |
| 10 |  | **Screens** | The screens of the board type: Game and the classic screens, Banner, Announce, Video Support (CK: the scorebug and the classic lower thirds). Click one to edit it. |
| 11 |   | **Factory Settings** | Brings back the factory version of the selected screen after the question "Factory Settings Will Be Restored. Are You Sure?". |
| 12 |   | **Save & Apply** | Saves the values of the selected element and redraws the board. |

The screen list (left):

| Board Type | Screens |
|---|---|
| St, Sp, Ad | "Game" (the scoreboard), "Goal", "Substitution", "Multiple", "Cards", "Match Summary", "Stats", "Results", "Standings", "Team Players", "Slide", "Referees", "Banner", "Announce", "Video Support" |
| CK | "Game" (the scorebug), "Goal", "Substitution", "Cards", "Match Summary", "Penalty", "Video Support" |

The 17 info screens of chapter 10 and their CK lower thirds are not in the list: their layouts come with the designs and cannot be changed in the editor in this version.

| Area or Button | What It Does |
|---|---|
| Screen list | Click a screen: the board shows it with sample data, and its elements appear in the Elements list. |
| "Elements" | Every object of the selected screen (logos, names, score, clock, fouls ...). Hidden objects are grey. Click one to edit it; the board frames it with a red dotted line. |
| "Show or Hide" (eye icon) | Switches the selected element between shown (display: block) and hidden (display: none). Save & Apply makes it final. |
| "Location" | Shows the position and size values of the element (left, top, width, height, z-index ...). |
| "Style" | Shows the look values of the element (colour, font, size, shadow ...). |
| "Insert Row", "Delete Row" | Add an empty value row, or remove the selected one. |

| Area or Button | What It Does |
|---|---|
| Value table | Property and value. A click on a property opens a list of property names; "Hint" below the table lists typical values of the property. Type the value into the cell. A colour property gets a colour picker button in its cell, font-family a font picker button. |
| "Factory Settings" | Brings back the factory version of the selected screen after a question (below). |
| "Save & Apply" | Saves the values of the selected element and redraws the board. |
| "Save Design As" (disk icon in the title bar) | Section 11.3. |
| X or Esc | Closes the editor. |

How to change an element:

1. Click the screen, then the element.
2. Click Location or Style and change the values.
3. Click "Save & Apply". Save each element before you choose the next one: unsaved values are dropped when you select another element.

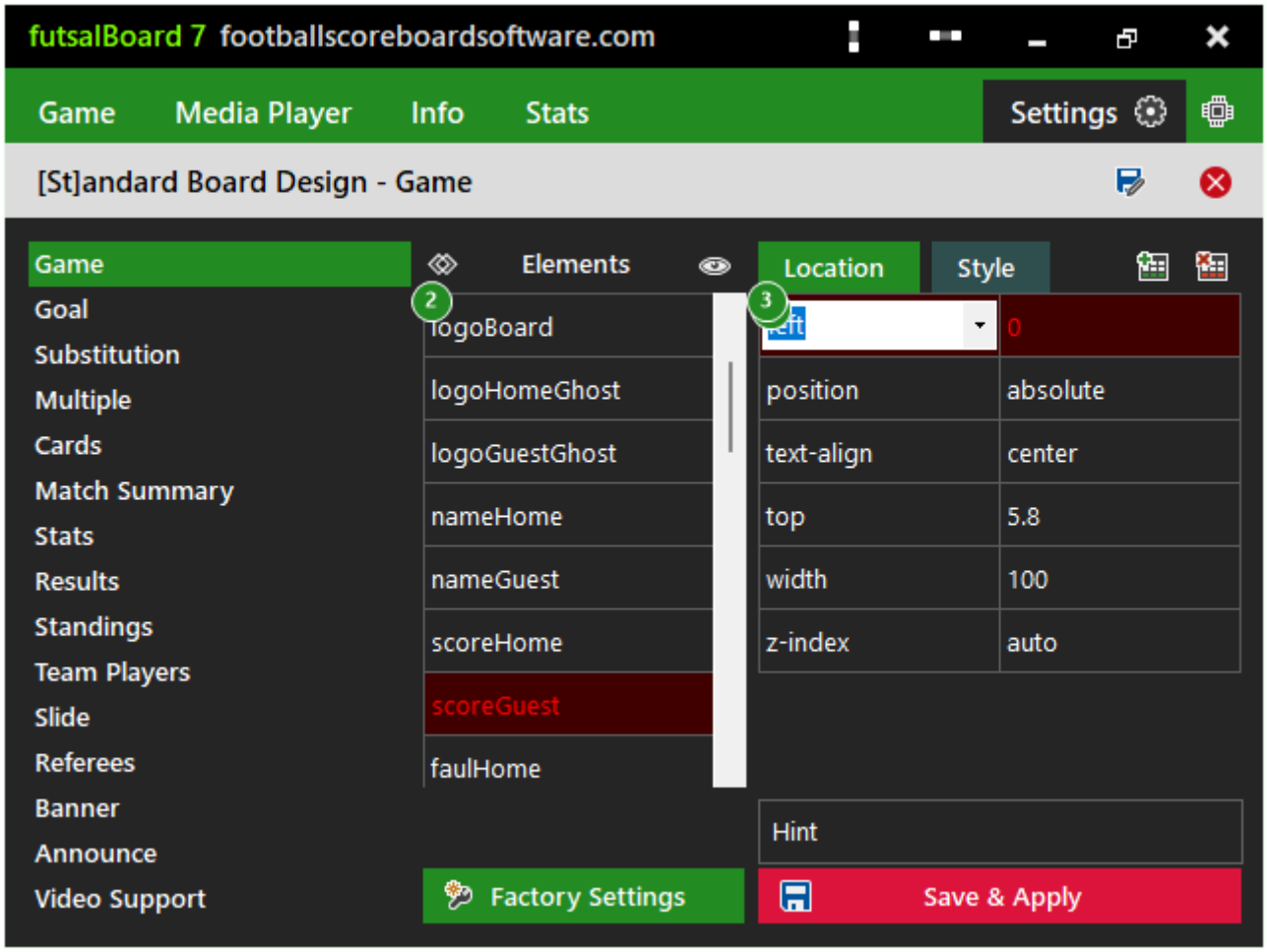
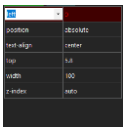



*Figure 94. The element scoreGuest selected, with the property list open on the first row.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Property** | The list of property names for the selected row. |
| 2 |  | **Elements** | The objects of the selected screen; hidden ones are grey. Click one: the board frames it with a red dotted line. |
| 3 |  | **Values** | Property and value of the element. A colour property gets a colour picker button, font-family a font picker button. |

> **Note:** The editor works on the live output: selecting a screen puts it on the board with sample data, and Save & Apply redraws it. Do not edit designs while you are on air.

Factory Settings: the program shows the display mode and the screen and asks "Factory Settings Will Be Restored. Are You Sure?". After OK:

| Screen | What Comes Back |
|---|---|
| Game (St, Sp, Ad) | The master in use: the master applied last in the gallery of that mode (Sp uses the Standard masters). If a design of your own is in use, the factory choice of the mode (section 11.1): "_Master - [St]andart Design [1]" for St and Sp, "_Master - [Ad]vertise Design [3]" for Ad. |
| Another screen (St, Sp, Ad) | The factory version from storage\St. The Standard, Sponsored and Advertisement boards share these screens. |
| A CK screen | That screen from the CK master in use (storage\CK\<GUID>). |

## 11.5 Fonts, Colours, Units and Backgrounds

Fonts:

- The setup installs these fonts with the program (common\font): DS-Digital, Euforia, Groteskia, HP Simplified and Montserrat.
- The font picker ("Select Font") lists the fonts installed in Windows with a sample text ("The quick brown fox jumps over the lazy dog" and the digits). Type the first letters of a font to jump to it; Enter or "Ok" takes it, "Cancel" closes.
- A font-family value may name several fonts separated by commas; the program quotes each name.

Colours: the colour picker ("Select Color") has a palette, the Red, Green and Blue values, the hex code and the option "Only Web Colors". "Ok" takes the colour; the value is written as a hex code (#RRGGBB).

Units of the values:

| Unit | Meaning |
|---|---|
| u | The board unit: 1u is 1 % of the board height on a 16:9 board; on a narrower board (4:3, 5:4) it follows the width, so a design keeps its proportions. Write it after the number, for example 16u; it also works inside a compound value, for example 0.6u solid #FFD400. |

| Unit | Meaning |
|---|---|
| px, %, em, vh, vw | Kept as typed. |
| A number without a unit | For left, right, width, min-width, max-width and the left and right margins and paddings: % of the board width (vw). For top, bottom, height, min-height, max-height, font-size, line-height, gap, margin, padding and the top and bottom margins and paddings: % of the board height (vh). |
| auto, fit-content, inherit ... | Kept as typed. |

Backgrounds of the St, Sp and Ad boards:

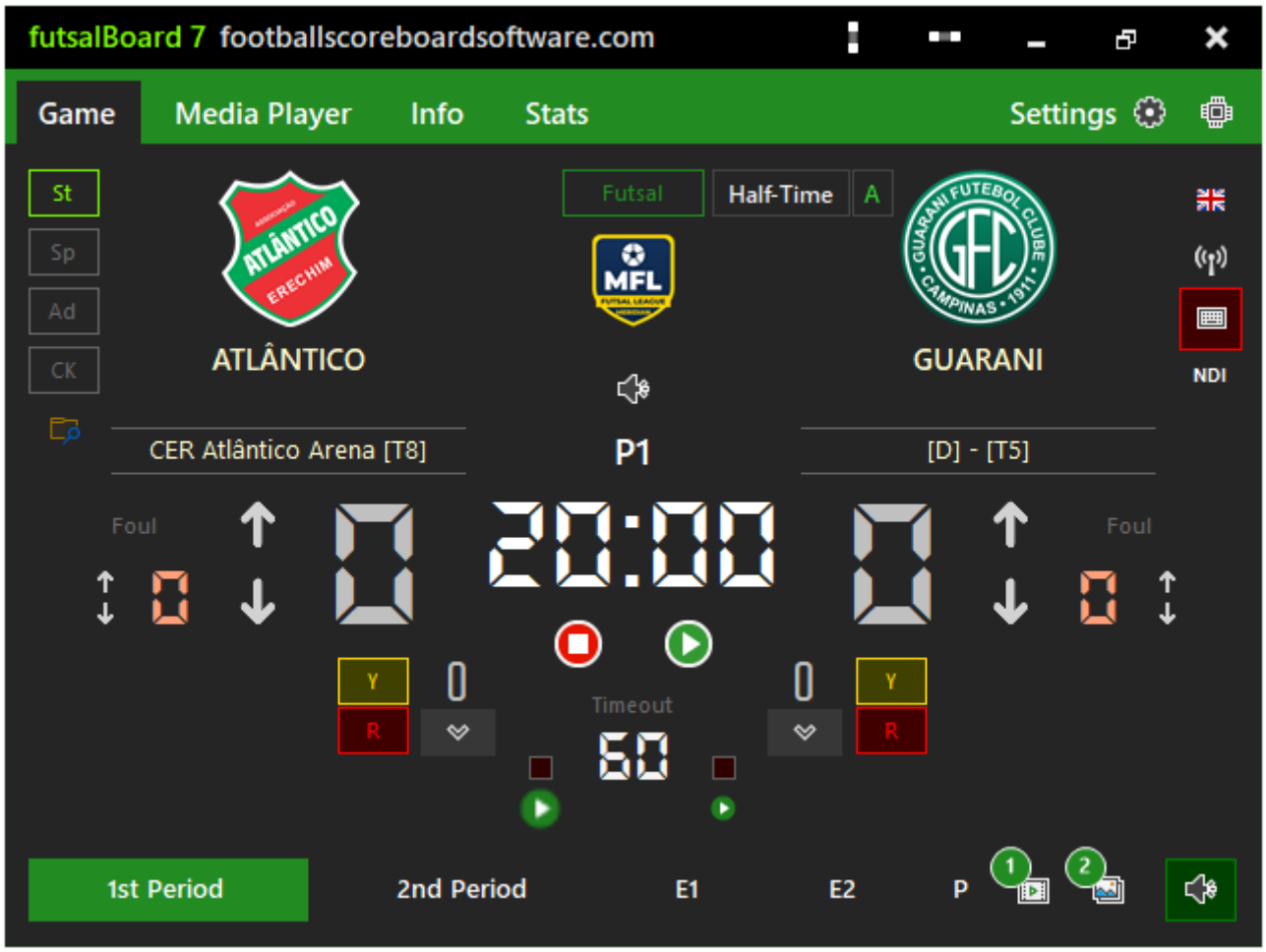



*Figure 95. The background buttons at the bottom right of the Game tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Background video** | Chooses a video for the background layer of the board. |
| 2 |  | **Middle image** | Chooses an image for the middle layer of the board, between the background video and the scoreboard. |

- "Select Background Layer Video File": the video behind the board (mp4, webm, ogg). The factory video is BlackRoyal.mp4 (media\videos).
- "Select Middle Layer Image File": a picture between the background video and the scoreboard.
- The small X on each button removes the video or the picture.
- Settings > "Screen Properties" > "Background Video Opacity" (0-10, default 6) sets how strongly the video shows (chapter 9.2).
- The CK board has no background: it shows the key colour or the picture of a running source (chapter 9.6).

## 11.6 CK Designs

- The CK gallery lists the four CK masters (section 11.1). Apply stores the choice in start.xml (CURRENT/CK); the CK board and the lower thirds are drawn from the working CK files (see the open point in section 11.3).
- The design editor of the CK board edits the scorebug (Game) and the classic CK lower thirds.
- Saving a CK design of your own is not supported in this version.
- Info lower thirds that are missing in the working folder are copied from the CK master in use, or from the Navy master when the master in use has none.

## 11.7 Upgrades Keep Your Designs

The setup replaces the factory designs in storage and installs the working designs in current only when they do not exist yet; your saved designs and dataBoards.xml are never overwritten. The setup also keeps a copy of the new factory working designs (common\vizrt\factory_current).

At the first start after an update, the program checks every working design file against the factory versions:

- A working file that is the same as the present factory version: nothing to do.
- A working file that is an unchanged older factory version: replaced by the present factory version.
- A working file you changed: kept. The log names it: "... is a customised design - kept. The new factory design stays available in the design gallery / Factory Settings."
- A missing working file: installed from the factory version.
- The info screens are checked one by one. The Standard board, the Advertisement board and the CK set (the scorebug and all CK lower thirds) are each replaced as a whole or not at all: one changed file keeps the whole set, so a board never mixes old and new parts.
- The log line "[design] upgrade check: ..." gives the numbers replaced, installed, kept and up to date.
- Your own saved designs are never changed.

# 12. Media Player, Sponsors, Camera, Screen Capture and NDI

## 12.1 Media Player and Playlists

The Media Player tab of the main window plays videos and pictures full screen on the board output: the media window covers the board of the active display mode until the scoreboard comes back.

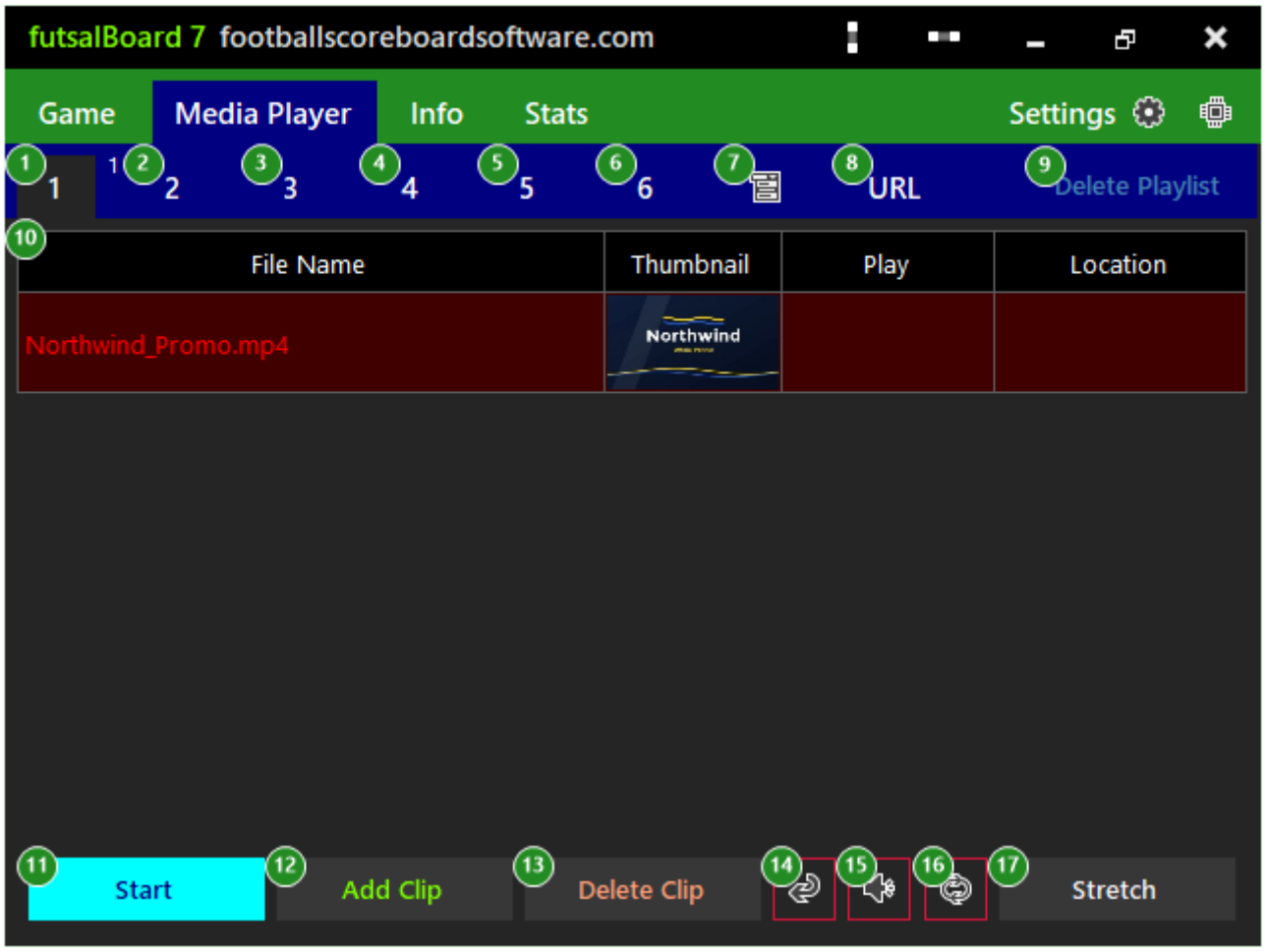
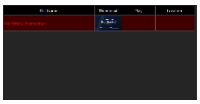
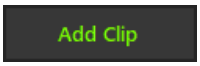
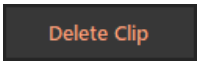



*Figure 96. The Media Player tab with playlist 1 (the demo clip Northwind_Promo.mp4).*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | 1 | 1 | Playlist 1 (demo: Northwind_Promo.mp4). The small number shows the clips in the list. |
| 2 | 2 | 2 | Playlist 2. |
| 3 | 3 | 3 | Playlist 3. |
| 4 | 4 | 4 | Playlist 4. |
| 5 | 5 | 5 | Playlist 5. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 6 |  | **6** | Playlist 6. |
| 7 |  | **Playlists 7-20** | Opens a list of the playlists 7 to 20. |
| 8 |  | **URL** | Opens the list of web pages (Web URL). |
| 9 |  | **Delete Playlist** | Empties the current playlist, without a question. |
| 10 |  | **Playlist** | File Name, Thumbnail, Play and Location (time of the playing clip). Picture files are grey. Drag a row to change the order. |
| 11 |  | **Start / Finish** | Plays the list from the selected clip; reads Finish while playing and stops it. |
| 12 |  | **Add Clip** | Adds video, audio or picture files (several at once). |
| 13 |  | **Delete Clip** | Removes the selected clip. |
| 14 |  | **Return to Scoreboard Screen When Playlist Ends** | Green frame: the scoreboard comes back at the end of the list. Red frame: the list starts again. |
| 15 |  | **Sound** | Sound of the videos on (green frame) or off (red frame). |
| 16 |  | **Auto Repeat** | Repeats the clip that plays (green frame = on). Start switches it off. |
| 17 |  | **Display mode** | How the picture fits the board: Center, CoverCenter, Original, SizeToFit, SizeToFitCenter, Stretch, ZoomCenter. |

| Control | What It Does |
|---|---|
| 1-6 | The playlists 1 to 6. The small number above a button shows the clips in that list. |
| List button (icon) | Opens the playlists 7 to 20. |
| "URL" | Opens the list of web pages (below). |
| "Delete Playlist" | Empties the current playlist, without a question. |
| The list | "File Name", "Thumbnail", "Play" (plays this clip; while a clip plays: pause and resume) and "Location" (the time of the playing clip). Picture files are shown in grey. |
| "Start" | Plays the list from the selected clip; the button then reads "Finish" and stops the list. |
| "Add Clip" | Adds video, audio or picture files (several at once). |

| Control | What It Does |
|---|---|
| "Delete Clip" | Removes the selected clip from the list. |
| "Return to Scoreboard Screen When Playlist Ends" (icon) | On (green frame): the scoreboard comes back when the list ends. Off (red frame): the list starts again from the top. |
| Sound (icon) | Sound of the videos on (green frame) or off (red frame). |
| "Auto Repeat" (icon) | Repeats the clip that plays (green frame = on). Start switches it off. |
| Display mode ("Stretch") | How the picture fits the board: Center, CoverCenter, Original, SizeToFit, SizeToFitCenter, Stretch (default), ZoomCenter. |

- A picture stays on screen for "Image Play Duration" seconds (Settings > "Screen Properties", 1-120, default 5; chapter 9.2).
- A clip whose file is missing is skipped.
- While a clip plays, the Settings tab of the menu bar shows the time left (for example ▶ 0:12). Playlists cannot be switched and rows cannot be dragged; Add Clip, Delete Clip and Delete Playlist are hidden.
- Drag a row to change the order of the list.
- Every change of a list is saved at once (common\data\playList_<n>.xml).
- The Game tab stops the media and shows the scoreboard again.
- The remote control (Media tab, chapter 13) and the HTTP command start_playlist (chapter 14) start a playlist as well.




*Figure 97. The media window on the board output, playing the demo clip.*

Web pages: "URL" opens the list "Web URL".

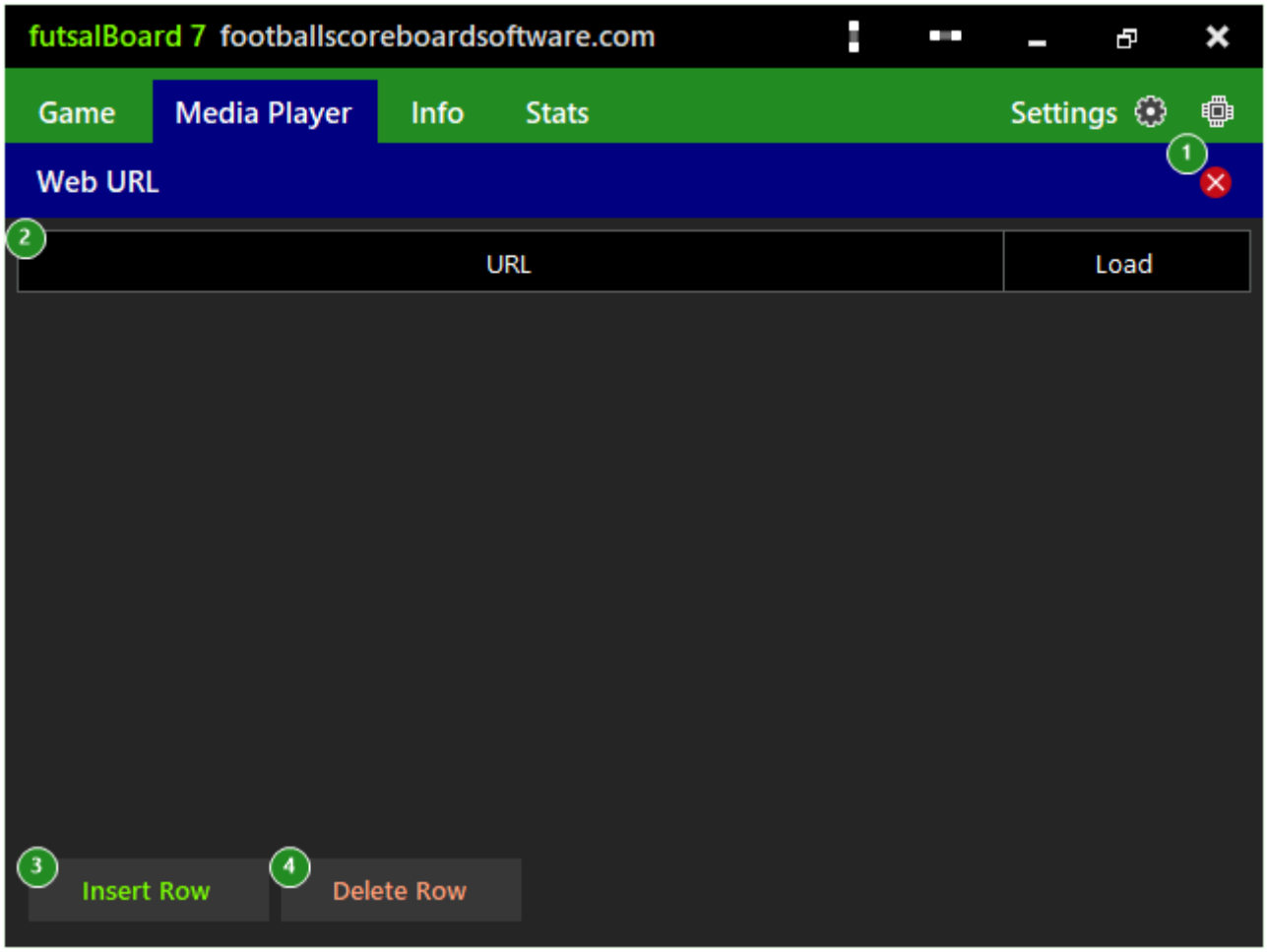
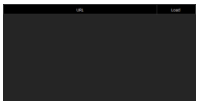
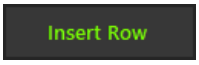
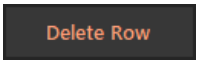



*Figure 98. The list Web URL (empty in the new installation).*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the list; Esc does the same. |
| 2 |  | **URL / Load** | The web addresses. The Load button of the selected row saves the list and shows the page on the board output. |
| 3 |   | **Insert Row** | Inserts an empty row above the selected one. |
| 4 |   | **Delete Row** | Removes the selected row. |

| Control | What It Does |
|---|---|
| The list | "URL" and "Load": type the address of a web page into the URL cell. When a row is selected, its Load cell shows the "Load" button: it saves the list and shows the page on the board output. |
| "Insert Row" | Inserts an empty row above the selected one (or adds the first row). |
| "Delete Row" | Removes the selected row. |
| X or Esc | Closes the list. |

The Game tab brings the scoreboard back. The list is kept in common\data\playList_url.xml.

The Ad and CK pages have their own Media Player with six playlists each, for the Ad multimedia area and the CK background (chapter 9.5 and 9.6).

## 12.2 Demo Playlists

The new installation brings one demo clip, Northwind_Promo.mp4 (a fictional sponsor), in C:\futsalBoard7\media\videos:

| Player | Demo Playlist |
|---|---|
| Media Player tab | Playlist 1: Northwind_Promo.mp4 |
| Ad page > Media Player | Playlist 1: Northwind_Promo.mp4 |
| CK page > Media Player | Playlist 1: Northwind_Promo.mp4 |

The other playlists are empty. The folder media\videos also holds the background videos of the boards (the factory background is BlackRoyal.mp4, chapter 11.5).

## 12.3 Sponsors

Info > "Sponsors" holds the sponsor logos. They are used by the Sp band (chapter 9.4), the Ad banners (chapter 9.5) and the sponsor choice of Banner, Announce and Video Support (chapter 10).

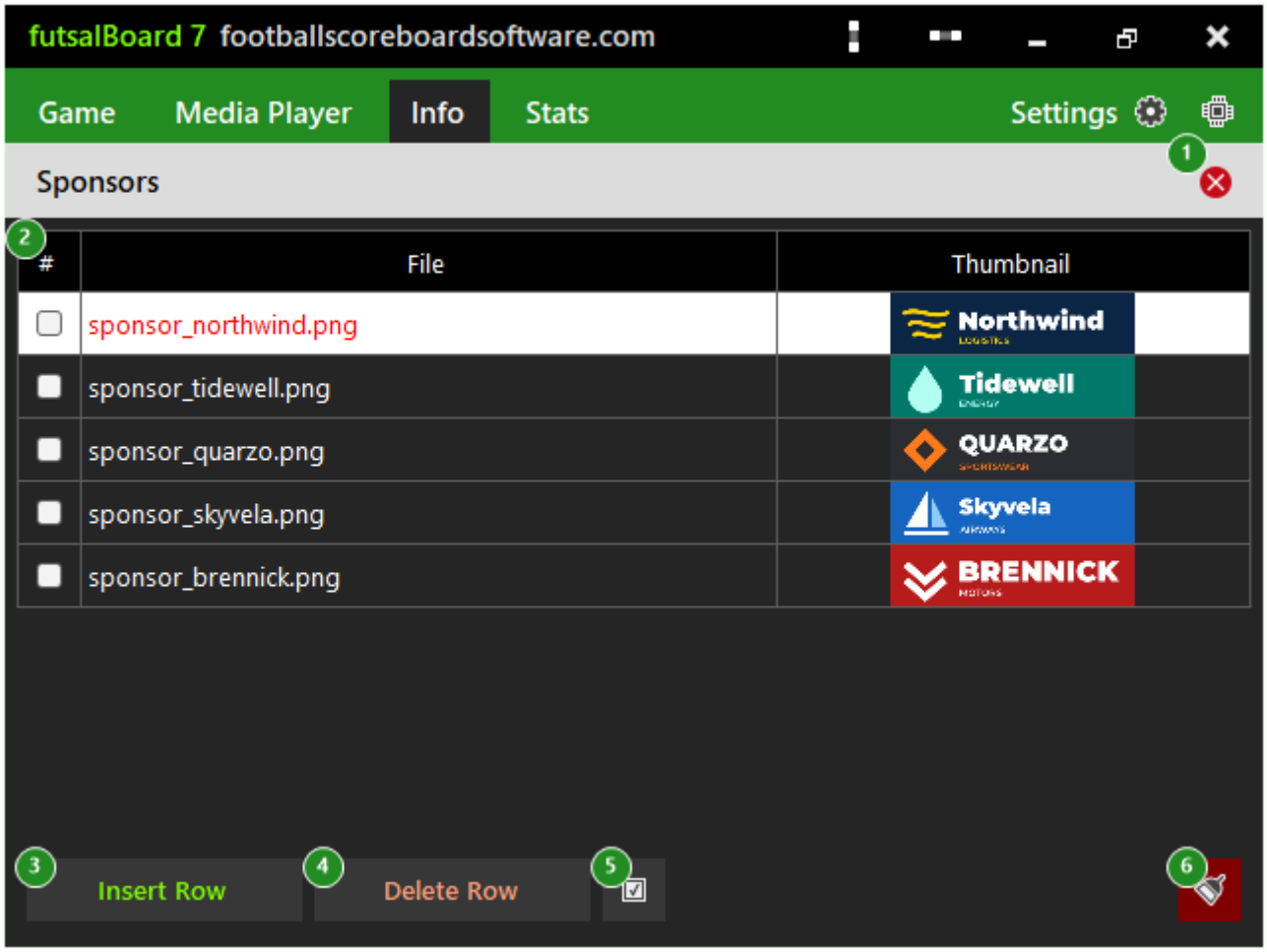
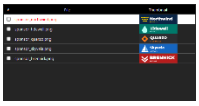
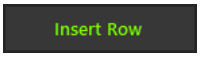
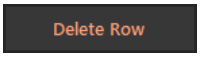



*Figure 99. The sponsor list with the five fictional demo sponsors.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close (X)** | Closes the list; Esc does the same. |
| 2 |  | **Sponsor list** | # (tick of the default sponsor), File and Thumbnail. Drag a row to change the order. Saved at once. |
| 3 |  | **Insert Row** | Adds one or more picture files (bmp, gif, jpeg, jpg, png). |
| 4 |  | **Delete Row** | Removes the selected logo. |
| 5 |  | **Set Default** | Ticks the selected logo, makes it the sponsor of Banner, Announce and Video Support and moves it to the top. On a ticked logo: removes the tick. Saved at once; kept after a restart. |
| 6 |  | **Clear All** | Empties the sponsor list. |

| Control | What It Does |
|---|---|
| The list | "#" (the tick of the default sponsor), "File" and "Thumbnail". Drag a row to change the order. |

| Control | What It Does |
|---|---|
| "Insert Row" | Adds one or more picture files (bmp, gif, jpeg, jpg, png). |
| "Delete Row" | Removes the selected logo. |
| "Set Default" (icon next to Delete Row) | Ticks the selected logo, makes it the sponsor of Banner, Announce and Video Support and moves it to the top of the list. On a ticked logo it removes the tick and the sponsor choice. Only one logo is ticked at a time; the choice is kept after closing the list and after a restart. |
| "Clear All" (icon at the right) | Empties the list. |
| X or Esc | Closes the list. |

- Every change is saved at once in common\data\sponsors.xml; there is no Save button.
- The Sp band and the Ad banners use all logos, in list order. Banner, Announce and Video Support offer the first five.
- The demo sponsors Northwind, Tidewell, Quarzo, Skyvela and Brennick are fictional; their logos are in C:\futsalBoard7\media\images\sponsors.

## 12.4 Show Pictures

Info > "Classic Screens" > "Show Pictures" (one button per team) shows the player pictures of a team as a slideshow on the board output.

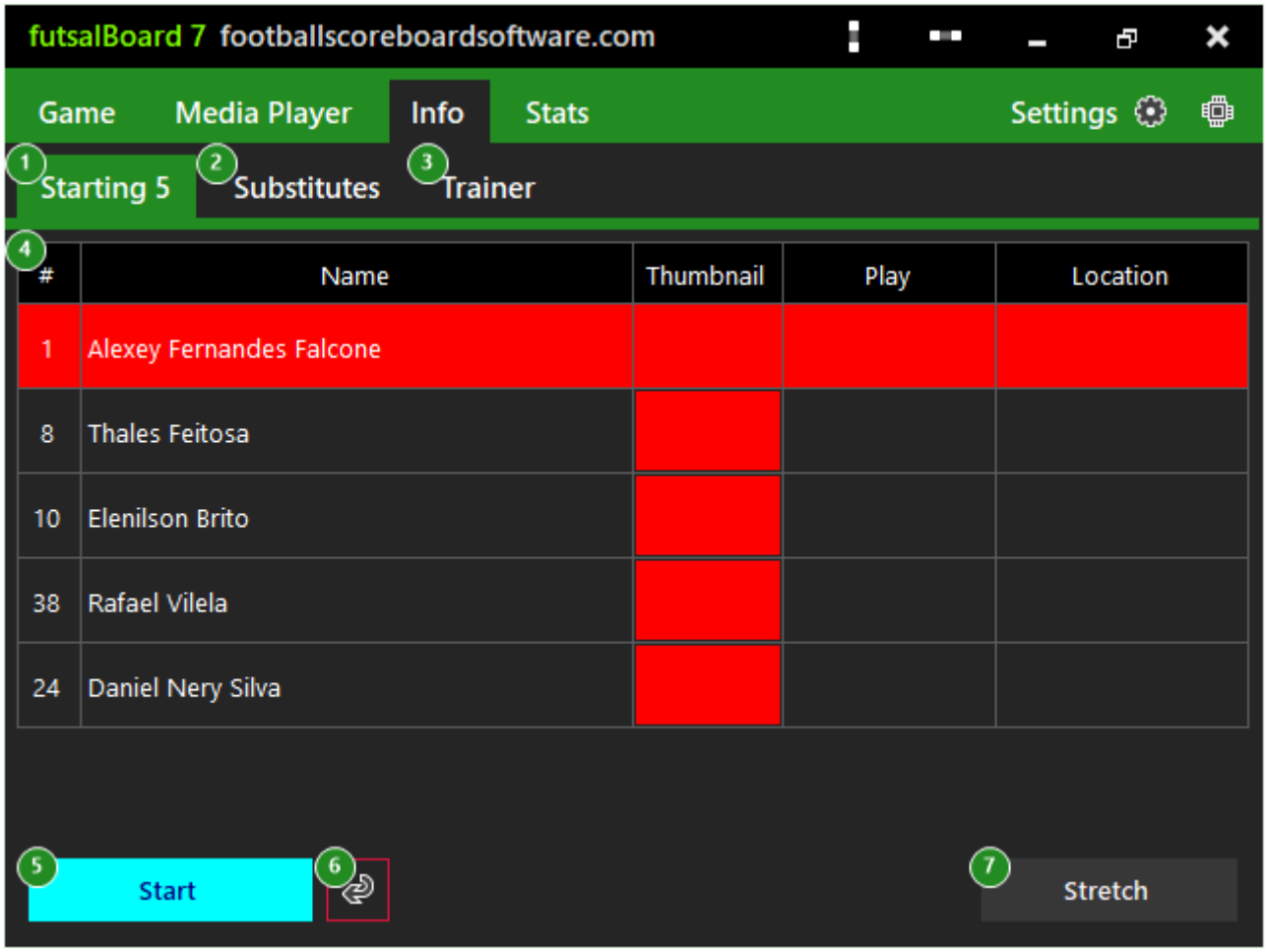
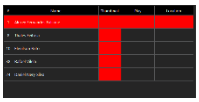



*Figure 100. Show Pictures of the home team. The thumbnails are red because the demo players have no Image for Banner pictures.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Starting 5 | **Starting 5** | Shows the Starting 5 group of the player list. |
| 2 | Substitutes | **Substitutes** | Shows the Substitutes group. |
| 3 | Trainer | **Trainer** | Shows the Trainer group. |
| 4 |  | **Pictures** | #, Name, Thumbnail (red = no Image for Banner file), Play and Location. |
| 5 | Start | **Start / Finish** | Shows the pictures of the group one after the other from the selected row; reads Finish while running. |
| 6 |  | **Return to Scoreboard Screen When Playlist Ends** | Green frame: the scoreboard comes back at the end. Red frame: the slideshow starts again. |
| 7 | Stretch | **Display mode** | How the picture fits the board: Center, CoverCenter, Original, SizeToFit, SizeToFitCenter, Stretch, ZoomCenter. |

| Control | What It Does |
|---|---|
| "Starting 5", "Substitutes", "Trainer" | The group of the player list to show (chapter 8.3). |
| The list | "#", "Name", "Thumbnail", "Play" (shows this picture) and "Location". A red thumbnail means the player has no Image for Banner picture, or the file is missing. |
| "Start" | Plays the whole group from the selected row; the button then reads "Finish". |
| "Return to Scoreboard Screen When Playlist Ends" (icon) | As in the Media Player. |
| Display mode ("Stretch") | As in the Media Player. |

- Only the "Image for Banner" pictures (or videos) of the player list are used.
- Each picture stays for "Image Play Duration" seconds.

## 12.5 Camera

The Camera tabs of the Ad and CK pages show a live camera picture: in the Ad multimedia area, or on the CK board behind the graphics.

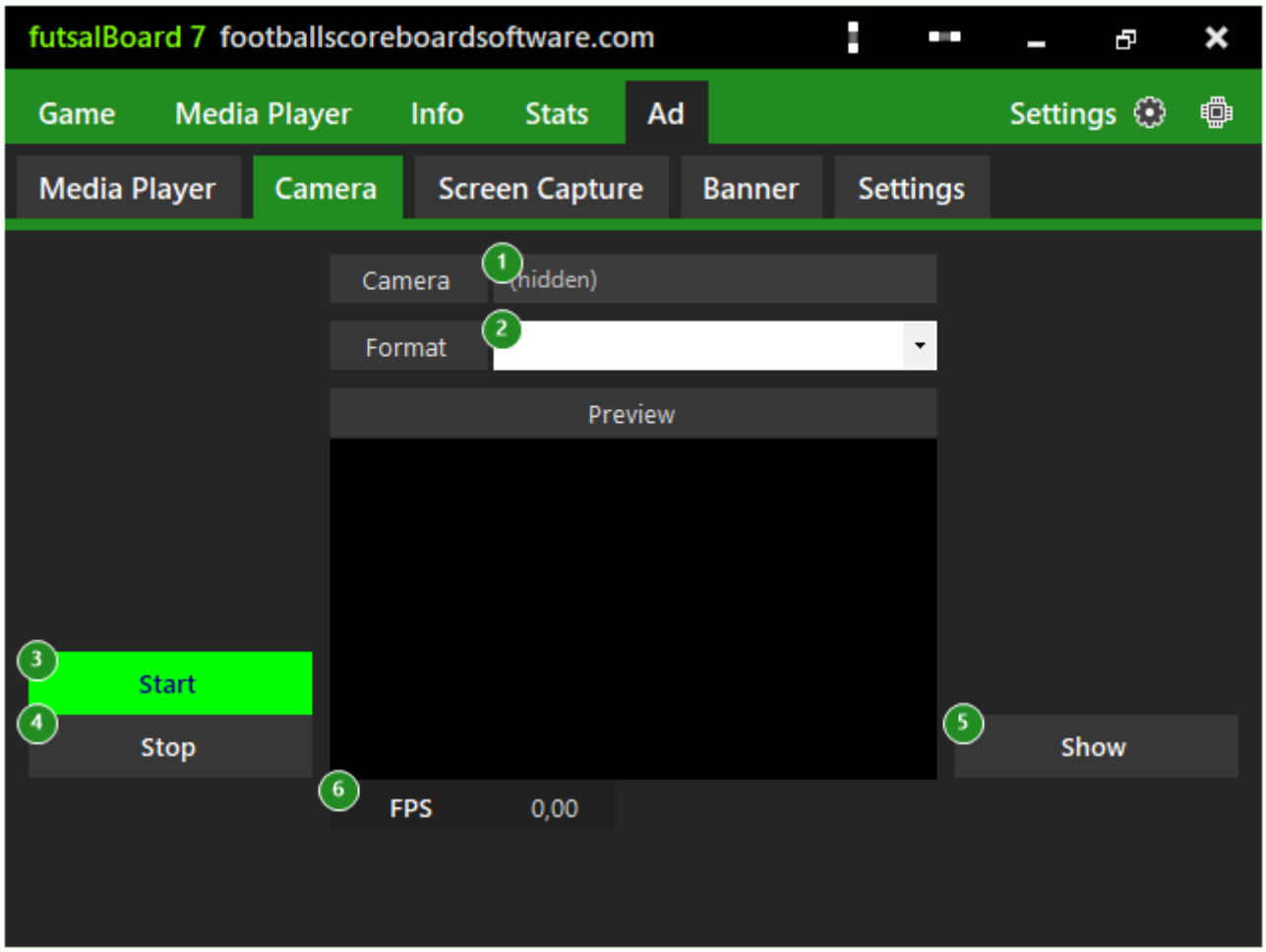



*Figure 101. The Ad page, Camera tab (the camera name is hidden in this picture).*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | (hidden) | **Camera** | The video devices of Windows. |
| 2 | | **Format** | The formats of the chosen camera, for example 1920x1080 @ 30fps. |
| 3 | Start | **Start** | Starts the camera; the picture appears in the Preview. |
| 4 | Stop | **Stop** | Stops the camera. |
| 5 | Show | **Show** | Puts the camera picture on the board; stops a playlist and a screen capture of the page. |
| 6 | FPS | **FPS** | Shows the frame rate of the camera picture. |

1. Choose the "Camera" (the video devices of Windows) and its "Format" (for example 1920x1080 @ 30fps).
2. Click "Start": the picture appears in the "Preview".
3. Click "Show": the picture goes on the board. Show on the Ad page stops a running playlist and screen capture of the Ad page.
4. "Stop" ends the camera.

- Without a camera and format the program says "Please select a camera and format.".
- "FPS" shows the frame rate of the picture.
- The picture fits the area with the display mode chosen on the Media Player tab of the same page (on the Ad page also Settings > "Multimedia"). The same applies to Screen Capture.
- While the camera is on the board, the Camera tab blinks.
- futsalBoard 7 has no NDI input: the Camera tab takes Windows video devices only.

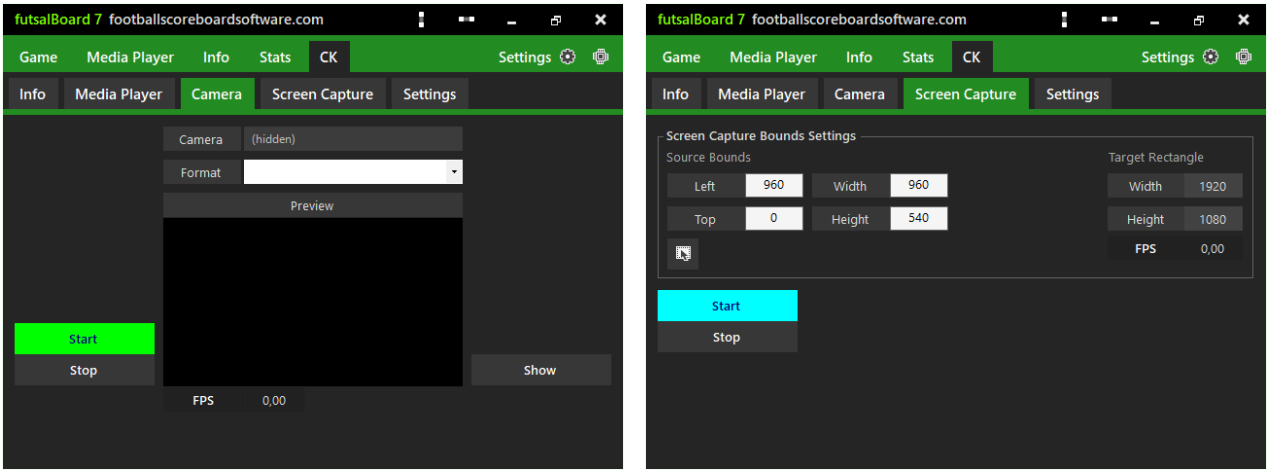



*Figure 102. The Camera and Screen Capture tabs of the CK page.*

## 12.6 Screen Capture

Screen Capture shows a part of the PC screen on the board, for example a statistics program or a browser window: in the Ad multimedia area, or on the CK board behind the graphics.

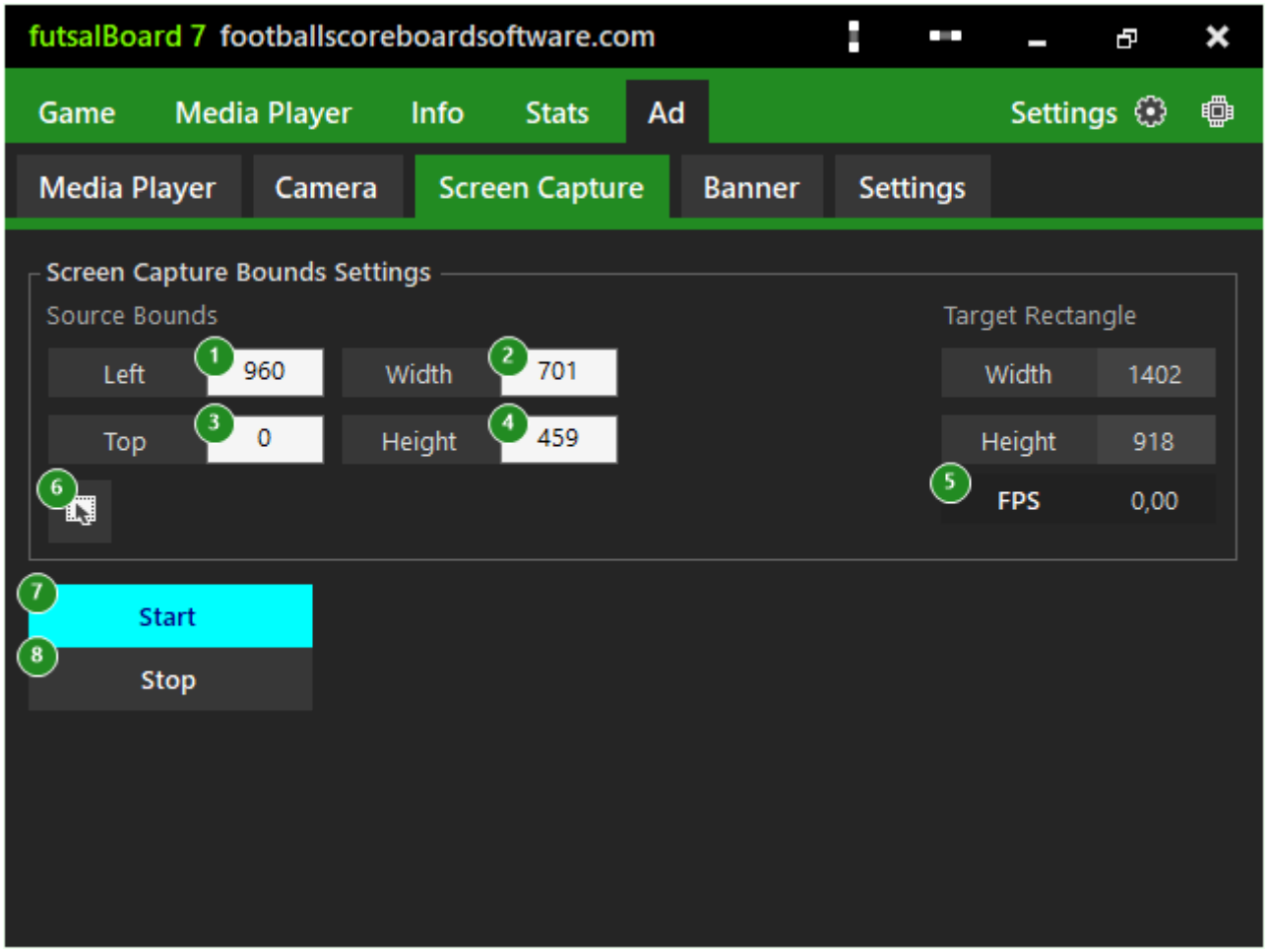



*Figure 103. The Ad page, Screen Capture tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | 960 | **Left** | The left edge of the captured area on the Windows desktop, in pixels. |
| 2 | 701 | **Width** | The width of the captured area, in pixels. |
| 3 | 0 | **Top** | The top edge of the captured area, in pixels. |
| 4 | 459 | **Height** | The height of the captured area, in pixels. |
| 5 | FPS | **FPS** | Shows the frame rate of the capture. |
| 6 | | **Select Rectangle** | Drag a frame on the screen to set the source bounds. |
| 7 | Start | **Start** | Saves the bounds and starts the capture on the board; stops a playlist and a camera of the page. |
| 8 | Stop | **Stop** | Stops the capture. |

1. Set the "Source Bounds": "Left", "Top", "Width" and "Height" in pixels of the Windows desktop, or click "Select Rectangle" and drag a frame on the screen.
2. "Target Rectangle" shows the size of the area on the board (read only).
3. Click "Start". Start on the Ad page stops a running playlist and camera of the Ad page. "Stop" ends the capture.

- The source bounds are saved for the next time.
- "FPS" shows the frame rate of the capture.
- When the licence includes it, the capture uses the graphics card (GPU, DXGI); otherwise the screen is copied by Windows.
- While the capture runs, the Screen Capture tab blinks.

## 12.7 NDI Output

The NDI button on the Game tab ("Start/Stop NDI Camera Stream") sends the board into the network as an NDI video stream. Receivers such as vMix or OBS list it under the sender name Fs7_NDI.

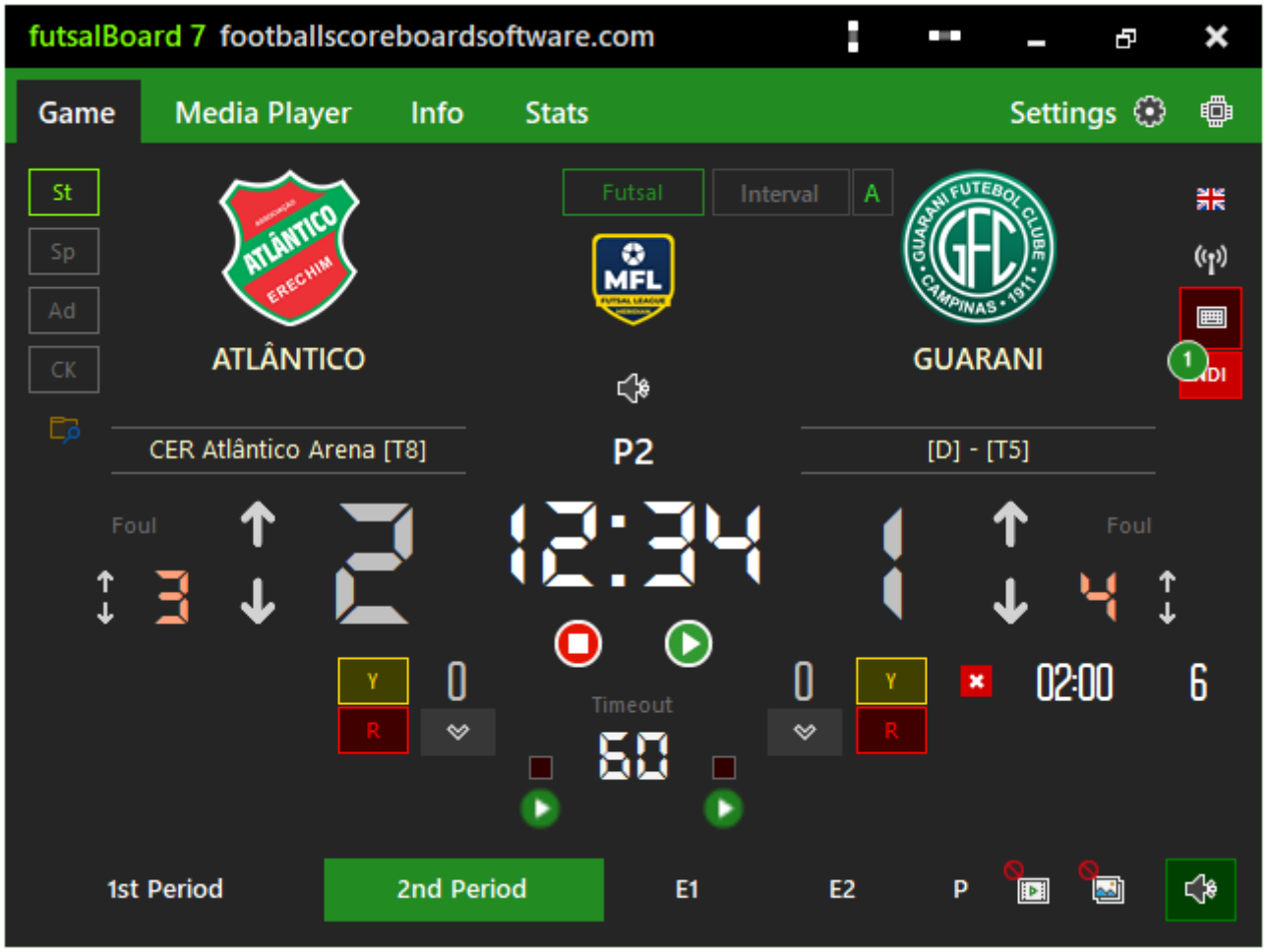



*Figure 104. The Game tab with the NDI output on (the NDI button red).*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | NDI | **NDI** | Starts and stops the NDI output of the board (chapter 12). Red = on. |

| Button | Meaning |
|---|---|
| Red | Sending. Click to stop. |
| Dark (as the panel) | Off. Click to start. |
| Amber | The stream stopped; the tooltip gives the reason ("NDI stopped: ... - click to reset"). Click to reset, then click again to start. |
| Grey | NDI could not start; rest the mouse on the button for the reason ("NDI unavailable: ...", "NDI start failed: ..." or "NDI error: ..."). |

- The stream follows what is on the output: the board of the active display mode, a full-page info screen, or the media window while it plays. A display-mode change moves the stream to the new board.
- The frame rate is set in Settings > "Screen Properties" > "NDI Frame Rate": 23.976, 25, 29.97, 30, 50, 59.94 (default) or 60. A change restarts a running stream with the new rate.
- The stream has no transparency: for the CK board use the green, blue or magenta key colour (chapter 9.6).
- The NDI runtime (Processing.NDI.Lib.x64.dll) is installed with the program. When it is missing or does not work on the PC, the button turns grey and the tooltip gives the reason.
- The sender name is set in start.xml (SETTINGS > NDI > SenderName, default Fs7_NDI); there is no setting for it in the program.
- futsalBoard 7 sends NDI only; it has no NDI input.

# 13. Remote Control

The remote control is a web page that a phone, a tablet or a second PC opens in its browser; no app is needed. The page talks to futsalBoard 7 over the network on port 1907 and uses the same commands as the HTTP API (chapter 14). It follows the discipline that is active on the PC: Futsal, Beach Soccer, Netball or Floorball.

## 13.1 Network and Firewall

- The phone or tablet and the PC are in the same network (Wi-Fi or LAN).
- The remote control is switched on. It is off on a new installation (section 13.2).
- Port 1907 is open in the Windows firewall. The setup runs C:\futsalBoard7\open_firewall_1907.bat, which adds the four rules "futsalBoard 1907 TCP IN", "futsalBoard 1907 UDP IN", "futsalBoard 1907 TCP OUT" and "futsalBoard 1907 UDP OUT" when they are missing. If a phone cannot connect, run the file again with a right click > Run as administrator.
- The port is fixed. Only one program at a time can use port 1907 on a PC: when another program already uses it, the remote control cannot start (section 13.2).

## 13.2 Switching the Remote On

Open Settings > Remote Control, or click the remote control icon on the right of the Game tab (tooltip "Remote Control").

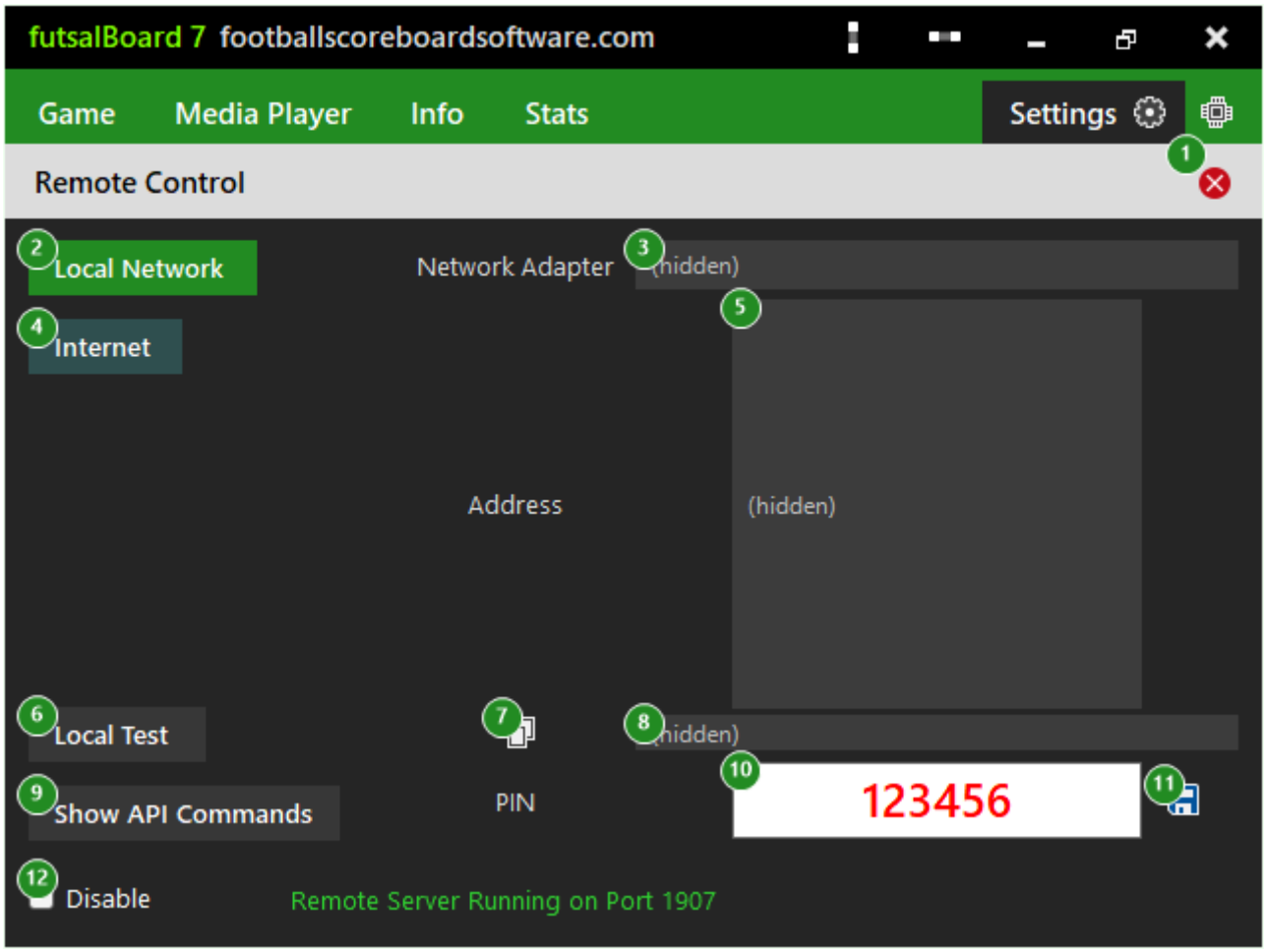
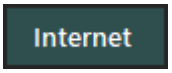
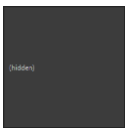
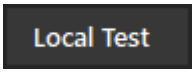
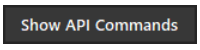
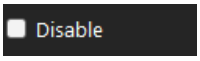



*Figure 105. Settings > Remote Control. The address, the QR code and the network adapter are hidden in this picture; your page shows the address of your PC.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close** | Closes the Remote Control page (also Esc). |
| 2 |   | **Local Network** | Shows the address of the selected network card in the local network, with its QR code (default). |
| 3 |  | **Network Adapter** | The connected Ethernet or Wi-Fi card whose address is shown. |
| 4 |   | **Internet** | Shows the public internet address of this connection (asked from api.ipify.org); "No Internet Connection" without a connection. Works only with port 1907 forwarded in the router. |
| 5 |  | **QR code** | The remote address as a QR code: scan it with the phone camera to open the logon page. |
| 6 |   | **Local Test** | Opens the address in the web browser of this PC. |
| 7 |  | **Copy** | Copies the address to the clipboard. |
| 8 |  | **Address** | The address to open on the phone: http://<PC address>:1907/logon.html. |
| 9 |   | **Show API Commands** | Opens API_Commands.txt (the HTTP API reference) in Notepad. |
| 10 |   | **PIN** | The PIN of the remote control and the API: digits only, up to 6 (123456 on a new installation). |
| 11 |  | **Save PIN (disk)** | Appears when the PIN is changed: saves it and uses it at once. An empty PIN is refused. A new PIN ends the open remote sessions. |
| 12 |   | **Disable** | Ticked (red) = the remote control is off. Untick it to start the remote server on port 1907; the choice is kept for the next start. |

To switch the remote control on, untick "Disable" at the bottom of the page. Ticked (red) = the remote control is off. The choice is saved in start.xml and used at the next start of the program.

- If the server cannot start because port 1907 is in use, the program says "Remote Control Could Not Start: Port 1907 Is in Use". Close the other program that uses the port, then tick and untick "Disable" again.
- If no PIN is saved, the program says "Remote Control Needs a PIN: Enter and Save a PIN Before Using It". The remote control starts as soon as a PIN is saved.
- At the start of the program the server is started when "Disable" was not ticked. If the port is in use at that moment, the program starts without the remote control; the status line and the tooltip of the remote control icon show the error.

The status line to the right of "Disable" shows the state of the server, and the tooltip of the remote control icon on the Game tab shows the same line:

| Status Line | Colour | Meaning |
|---|---|---|
| "Remote Server Running on Port 1907" | Green | Phones can connect. |
| "Remote Server Stopped" | Grey | "Disable" is ticked. |
| "Remote Server Stopped: No PIN Set" | Orange | Save a PIN (section 13.3). |
| "Remote Server Error on Port 1907: Port Already in Use by Another Program" | Red | Another program uses port 1907. Close it, then tick and untick "Disable". |

Another error shows the reason that Windows gave, after "Remote Server Error on Port 1907:".

The address in the middle of the page is the one to open on the phone: http://<PC address>:1907/logon.html.

- "Local Network" (default): the address of the selected network card in the local network. "Network Adapter" lists the Ethernet and Wi-Fi cards that are connected and have an IPv4 address. Without one, the list reads "No suitable Ethernet or Wireless card found."
- "Internet": the public address of the internet connection (asked from api.ipify.org). Without a connection the address reads "No Internet Connection".
- The QR code holds the same address: scan it with the phone camera.
- The copy button copies the address. "Local Test" opens it in the browser of this PC. "Show API Commands" opens API_Commands.txt in Notepad (chapter 14).

> **Note:** The Internet address works only when the router forwards TCP port 1907 to this PC. The remote control is protected by the PIN only and the connection is not encrypted (http). Use it over the internet only if you know what this means for your network.

## 13.3 PIN

- Digits only, up to 6 on the PC. A new installation uses 123456.
- Type the new PIN: the disk button appears beside it. Click it to save; the new PIN is used at once.
- An empty PIN is never saved ("The PIN Cannot Be Empty"). Without a PIN the remote control does not start and the logon page says "Remote Control PIN Is Not Set: Set a PIN on the Scoreboard PC".
- Saving a different PIN ends every open remote session: the phones go back to the logon page and must log on with the new PIN.

> **Note:** Change the PIN from 123456 before you use the remote control at an event.

## 13.4 Logging On

1. Open the address in the phone browser, or scan the QR code.
2. The logon page shows futsalBoard7 with the program version (for example 7.6.10.13), "Remote Control" and a keypad. Enter the PIN; ⌫ deletes the last digit. On a PC keyboard the digits, Backspace and Enter work too.
3. Tap ✓. The remote page opens on the Game tab.

- A wrong PIN brings the logon page back with "Wrong PIN".
- After 5 wrong PINs from the same device the PC refuses every PIN from it for 60 seconds: "Too Many Wrong PINs: Try Again in 60 s". Wait and enter the right PIN.

- The PIN is sent once. The PC then gives the browser a session (a cookie); the remote page itself never contains the PIN. A session ends after 12 hours without use, or when the PIN is changed on the PC.

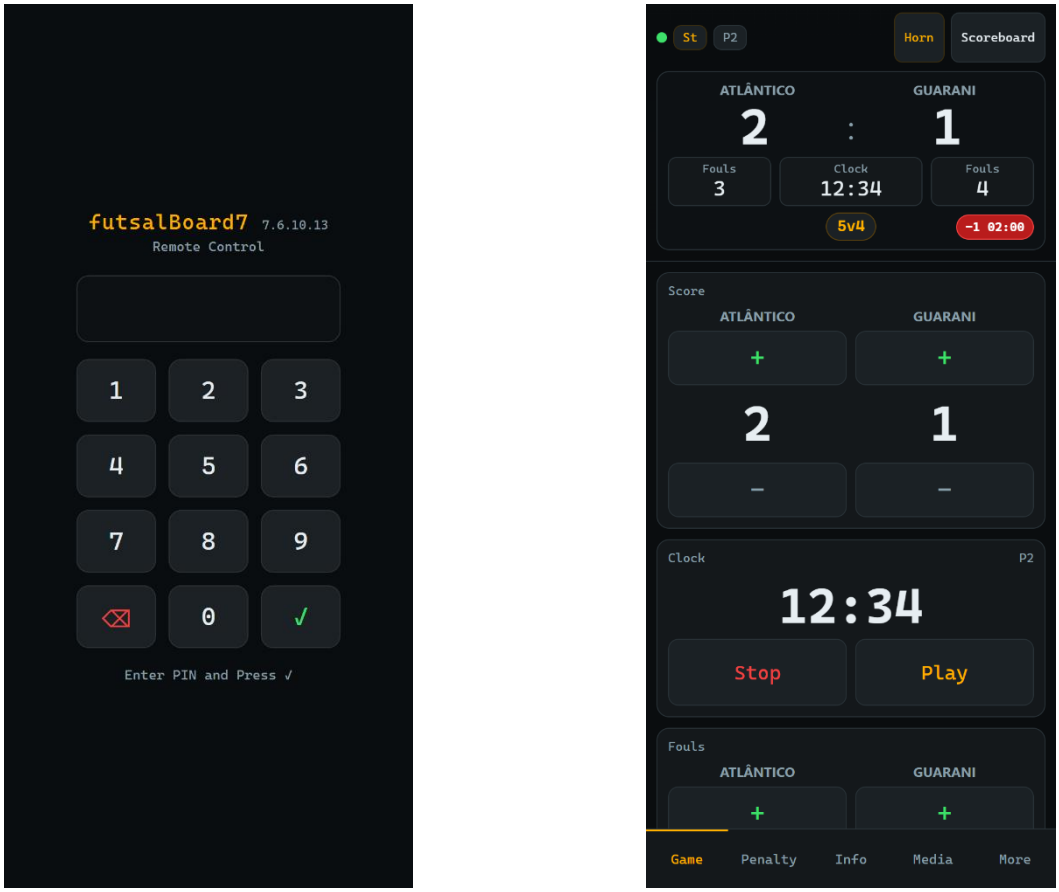



*Figure 106. The logon page and the Game tab on a phone.*

> **Note:** Logging on runs the command "match": the Game tab of the PC comes to the front and the scoreboard comes back on the board (an info screen or a picture on the St board is taken off). Reloading the remote page in the browser does the same. Log on before you start an info screen.

## 13.5 The Remote Page

The top of the page is always visible:

- the connection dot: green = the PC answers, red = the PC cannot be reached;
- the display mode (St, Sp, Ad or CK) and the period (for example P2);
- "Horn": sounds the horn on the PC;
- "Scoreboard": brings the scoreboard back on the board, as the Game tab does;
- the team names and the score, the clock (it is highlighted while it runs) and two counters: "Fouls" in futsal, "Timeouts Left" when the discipline has timeouts but no team fouls, "Players" (players on court) otherwise;
- a status row when it matters: the players on court (for example 5v4), the time left of the shortest numerical reduction of a team (for example −1 02:00), the 5th foul ("→ DFKSAF") or 6th foul ("DFKSAF") state, the centre pass (netball), and the status of the match: "Half-Time" or "Interval" with the interval clock, "Golden Goal", "Two-Goal Lead", "Final" with the winner.

The page asks the PC for the state every 0.6 seconds, so it also shows what is changed on the PC, on the keyboard or by another remote. The texts come from the language of the program (chapter 15.5). The tabs at the bottom are Game, Penalty, Info, Media and More.

## Game Tab

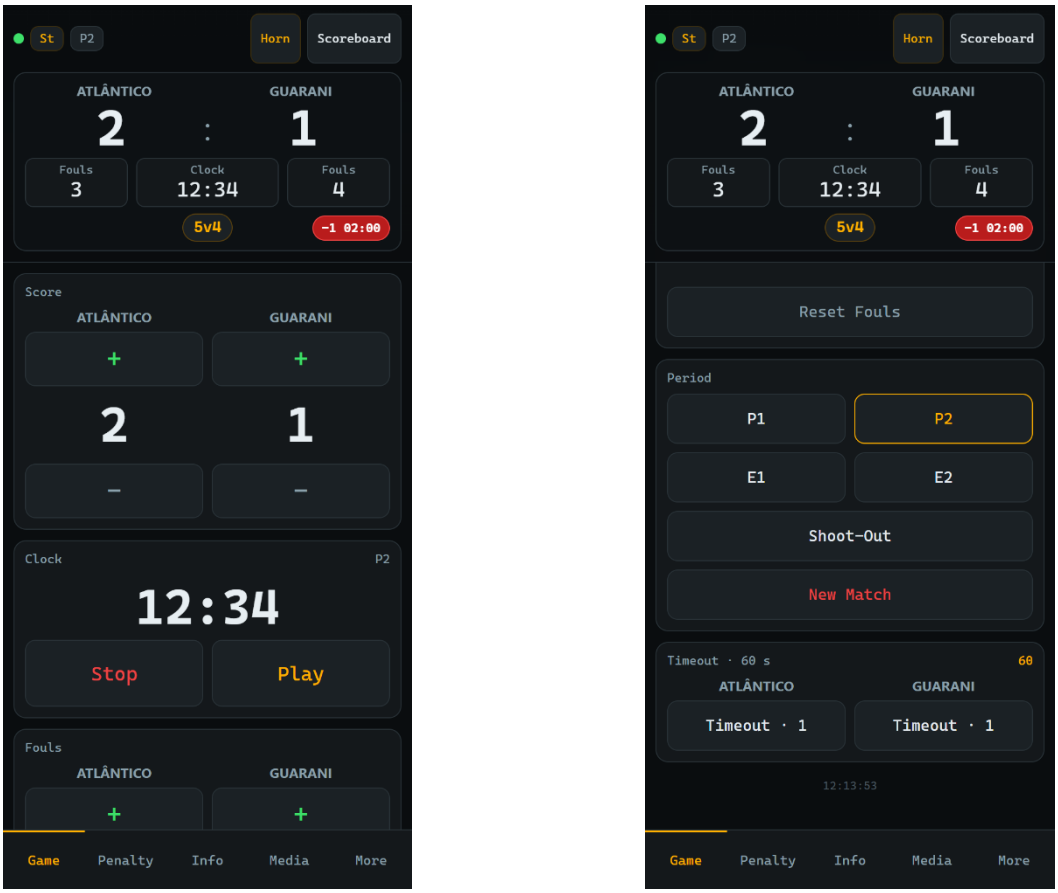



*Figure 107. The Game tab of a futsal match: score, clock and fouls (left); team fouls, periods and timeouts further down (right).*

| Element | What It Does |
|---|---|
| Score: + and − per team | One goal more or less, with the same rules as the goal arrows on the control panel (chapter 6). Tap the number to type a score. |
| "Scoring Locked" / "Unlock Scoring" | Appears when a rule has ended the match (golden goal, two-goal lead). The + buttons are then disabled. "Unlock Scoring" asks "Unlock Scoring?" and opens the match again. |
| Clock: "Stop" and "Play" / "Pause" | "Play" starts the clock, "Pause" stops it. "Stop": the first press stops a running clock, a press on a stopped clock sets it back to the start of the period. Tap the time to type a new one ("Set Time (mm:ss)"); this also stops the clock. |
| Interval button and "Auto" | Shown when the discipline has an interval after the period. "Half-Time · 15:00" (or "Interval · ...") starts the interval clock after the current period; while it runs the button reads "End Interval" with the time left. It cannot start while the match clock runs. "Auto On" / "Auto Off" is the setting "Start the Interval Automatically When the Period Ends" (the "A" button of the control panel). |

| Element | What It Does |
|---|---|
| Shoot-Out / Penalty Shots | Shown in the shoot-out period, or as soon as an attempt exists. Per team "Scored", "Missed" and "Undo" (removes the last attempt), the marks and the shoot-out score; the winner when it is decided. "Clear" asks "Clear All Shoot-Out Attempts?". |
| Centre Pass (netball) | One button per team; the lit team takes the next centre pass. It still alternates after each goal. |
| Fouls (futsal): + and − per team | One team foul more or less (one more also stops the clock, as on the panel). Tap the number to type it. The 5th foul shows "Next Foul: DFKSAF", from the 6th "DFKSAF". "Reset Fouls" asks "Reset the Team Fouls of This Period?". |
| Period | One button per period of the discipline (for example P1, P2, E1, E2) and the shoot-out. The buttons are disabled while the clock runs. Going back to the first period during a match asks "This Resets the Score, Penalties, Team Fouls, Timeouts, Cards, the Shoot-Out and the Timeline. Continue?". |
| "New Match" | Asks the same question, then starts a new match: period 1; the score, penalties, team fouls, timeouts, cards, the shoot-out and the timeline are cleared; teams, players, logos and settings stay. With the clock running it says "Stop the Clock First" (chapter 6.15). |
| Timeout (futsal, floorball) | "Timeout · 1" per team: starts the team's timeout (the number is the timeouts left). The countdown shows in the card title. A timeout cannot be started while the match clock runs; a press during the running timeout ends it. |

## Penalty Tab

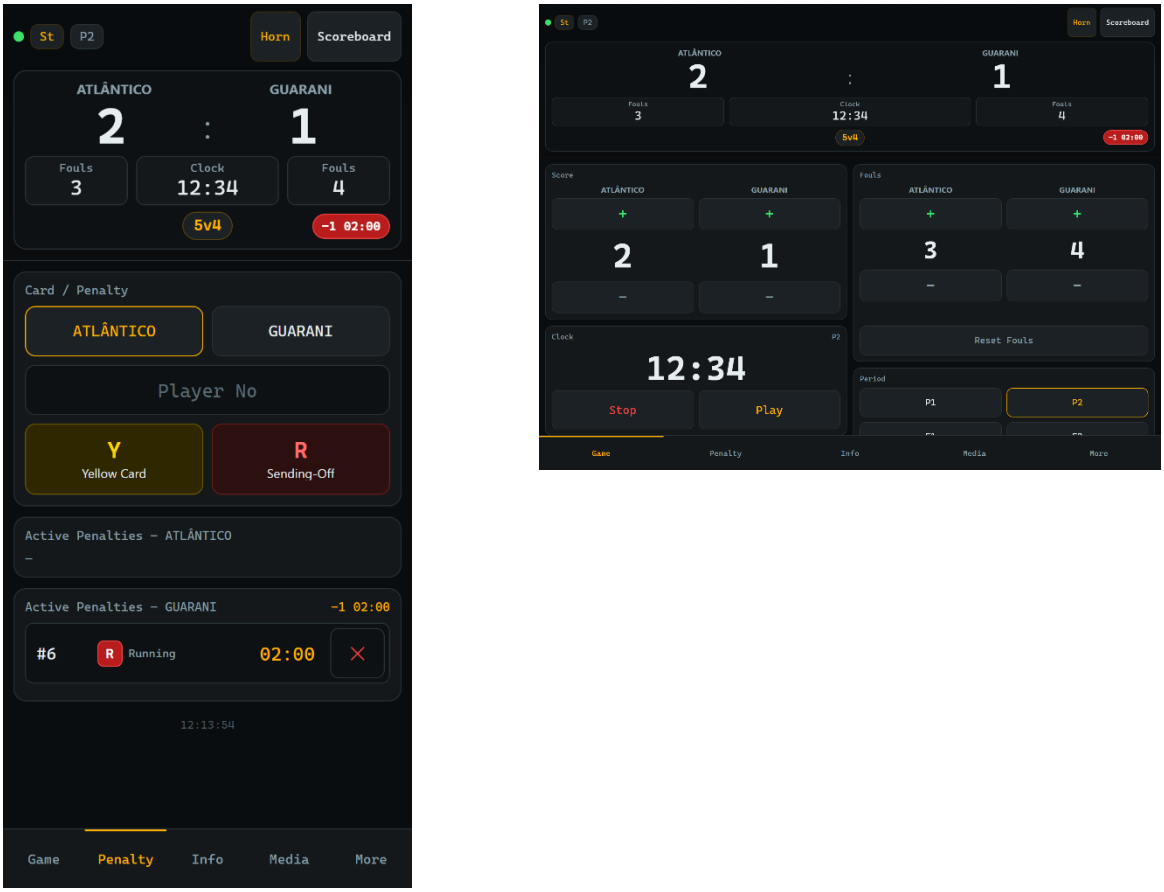



*Figure 108. The Penalty tab with a running sending-off (left), and the Game tab on a tablet (right).*

1. Tap the team.
2. Type the shirt number in "Player No".
3. Tap the card or penalty. The buttons are those of the active discipline that are switched on in the rules dialog (chapter 7), for example Y "Yellow Card" and R "Sending-Off" in futsal; "Caution", "Suspension" and "Ordered Off" in netball; the bench penalties, the personal penalty and the match penalty in floorball.

Without a number the page says "Enter the Player Number". The lists "Active Penalties – <team>" show every penalty with its number, kind, state ("Running", "Queued", "Personal") and time left. ✕ cancels that penalty.

## Info Tab

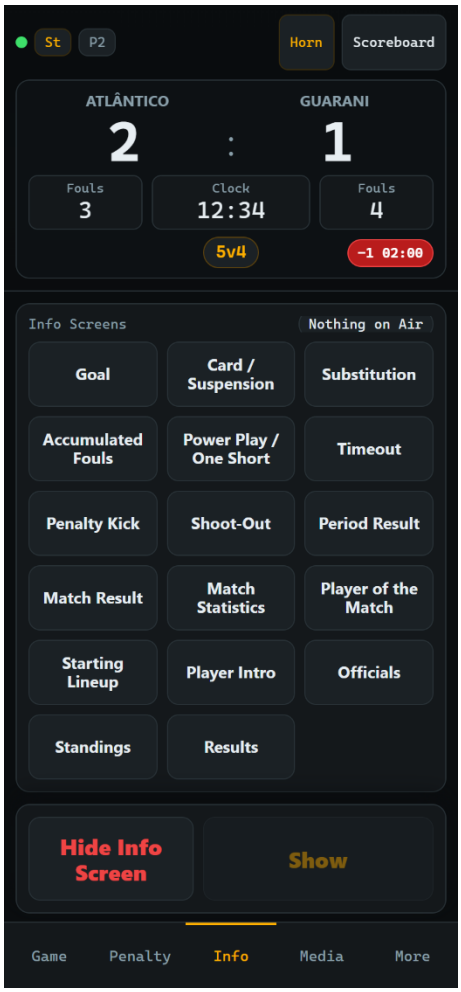



*Figure 109. The Info tab: the info screens of the discipline, "Hide Info Screen" and "Show".*

1. Tap an info screen. The tab shows only the screens of the active discipline; "On Air" names the screen that is on the board, "Nothing on Air" when none is.
2. Its fields appear below: choices (for example the team), text and number fields. A field you leave alone keeps the value set on the PC; tap a selected choice again to leave it to the PC.
3. Tap "Show: <screen>". The screen goes on the board: the full page in St, Sp and Ad, the lower third in CK (chapter 10).
4. "Hide Info Screen" takes it off.

## Media Tab

Type the number of a playlist on the keypad (⌫ deletes, C clears), then:

- "Start": opens the Media Player on the PC and starts that playlist. If a playlist already plays there, "Start" stops it.
- "Start on Ad Screen": switches to the Advertisement mode and starts that playlist of the Ad page.
- "Back to Scoreboard": the scoreboard again.
- "Sound On" / "Muted": switches the sound of the program on or off.

Without a number the page says "Enter the Playlist Number First". The Media Player and the Ad page have six playlists: use 1 to 6. Any other number plays nothing (the program answers "#Invalid Playlist Number (1-6)").

### More Tab

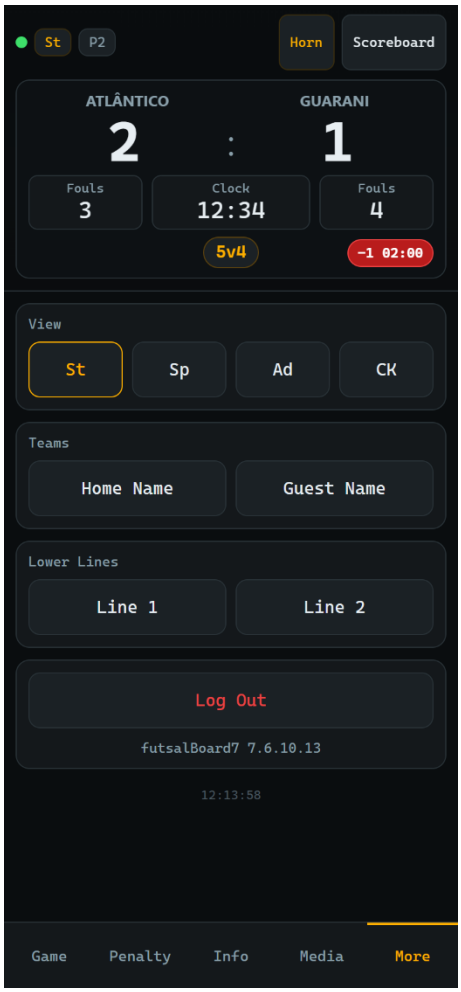



*Figure 110. The More tab with the program version under "Log Out".*

| Element | What It Does |
|---|---|
| View: St, Sp, Ad, CK | Switches the display mode and brings the scoreboard back. The current mode is lit. |
| "Home Name", "Guest Name" | Opens a box with the name; "Set" sends it, "Cancel" closes. A new line in the box becomes the second line of the name on the board. |
| "Line 1", "Line 2" | The two lower text lines of the board, the same way. |
| "Log Out" | Back to the logon page. |
| futsalBoard7 7.6.10.13 | The version of the program on the PC. |

## 13.6 Phone and Tablet

- On a phone the page is one column. On a screen 720 pixels wide or wider (a tablet, a PC browser) the cards are in two columns, and the Info tab shows the screens on the left and the fields with "Show" and "Hide Info Screen" on the right.
- Add the page to the home screen of the phone for a full-screen look.
- Let one person drive the clock and the penalties at a time. The PC does not stop two remotes (or a remote and the keyboard) from giving the same goal twice.

- If the connection dot turns red, check the Wi-Fi of the phone, that the program still runs on the PC, and that the remote control is on.
- In DEMO mode (chapter 3) the scores and the team fouls of both teams cannot be changed from the remote page. The program answers at once and changes nothing; no message appears on the PC.

# 14. HTTP API

futsalBoard 7 can be controlled by other programs and devices with plain web requests: a vision-mixer macro, a stream deck, a scoring system or a script. The remote page of chapter 13 uses the same commands. The full command list is in Appendix C; the file API_Commands.txt in C:\futsalBoard7 (Settings > Remote Control > "Show API Commands") is the developer's reference with more examples.

## 14.1 Request Format and Replies

```
http://<PC address>:1907/api.html?_=<number>&pin=<PIN>&cmd=<command>&value=<value>$
```

- The remote control must be on (chapter 13.2). Port 1907 is fixed. From the PC itself use 127.0.0.1 as the address.
- Only requests with the method GET to the path /api.html are API requests.
- Every request ends with $. The last $ of the request line is the end; text after it is ignored. A $ inside a value is sent encoded (%24).
- _=<number> is optional: any changing number, placed first, stops browsers and proxies from answering from their cache. The program ignores it.
- pin is the PIN of Settings > Remote Control (123456 on a new installation).
- Leave out &value= when the command has no value.
- Encode every value as a browser does (encodeURIComponent, UTF-8): a space as %20 (a plain + is also a space), & as %26, $ as %24, % as %25, + as %2B, = as %3D, # as %23, | as %7C. The program splits the request first and decodes each value after, so these characters arrive as typed and a value can never add another cmd or pin.
- In text values (team names, lower lines) an underscore _ is a new line.
- Command names are not case-sensitive, except GET, which must be written in capitals. Values are case-sensitive for set_chronometer (play, pause, stop); the other word values (click st, home, on ...) are not.

Replies (text/html, never cached):

| Reply | Meaning |
|---|---|
| !<command> | Accepted, for example !match. |
| !<value>::<command> | Accepted, for a command with a value, for example !7;120::add_home_penalty. The value is HTML-encoded (& arrives as &). |
| XML | The reply to cmd=GET (section 14.2), type application/xml. |
| #Invalid PIN | Wrong or missing PIN (or no valid session of the remote page). |
| #Locked | 5 wrong PINs from this IP address: every request with a PIN from it is refused for 60 seconds. |
| #PIN Not Set | No PIN is saved on the PC (chapter 13.3). |
| #Invalid API Request | The request is not a GET to /api.html, or the $ is missing. |
| #Invalid API Command | No command, or a command the program does not know. |
| #Invalid Playlist Number (1-6) | start_playlist or start_playlist_ad_screen with a number outside 1 to 6. Nothing plays. |

| Reply | Meaning |
|---|---|
| #License Required (DEMO) | Without a licence: a command that changes a score or the team fouls (set_home_score, set_guest_score_up, set_home_fault_down and the others). Nothing changes, and no message appears on the PC (chapter 3). |
| #Not Ready | The program is starting or closing (HTTP status 503). |
| #<message> | The command failed inside the program. |

"Accepted" means that the command was passed to the program. A command that cannot act at that moment (a period button while the clock runs, a timeout while the match clock runs, a card kind that is switched off) still replies with ! and nothing changes. Read the state with GET to check the result.

Examples:

```
http://127.0.0.1:1907/api.html?_=1&pin=123456&cmd=set_home_score_up$
http://127.0.0.1:1907/api.html?_=2&pin=123456&cmd=set_guest_fault_up$
http://127.0.0.1:1907/api.html?_=3&pin=123456&cmd=card_guest&value=6%3BR$
http://127.0.0.1:1907/api.html?_=4&pin=123456&cmd=set_home_team&value=ATL%C3%82NTICO$
http://127.0.0.1:1907/api.html?_=5&pin=123456&cmd=info_show&value=Goal%7CGoal.Side%3DHome%7CGoa
l.Scorer%3D10$
```

> **Note:** The API never asks for a confirmation: new_match, click period_1 (back to the first period) and shootout_clear act at once. Build a question into your own panel or macro, as the remote page does.

## 14.2 Reading the State

cmd=GET returns the state as XML: one Item inside Response.

```
http://127.0.0.1:1907/api.html?_=6&pin=123456&cmd=GET$
```

The fields come in groups:

- The board: BoardType (St, Sp, Ad, CK), Version (for example 7.6.10.13), Home, HomeScore, Guest, GuestScore, HomeFault, GuestFault, Mode (0 Futsal, 1 Beach Soccer, 2 Netball, 3 Floorball), Period, Chronometer, StatusChronometer (true / false), the timeout values, the penalties, Extra01 and Extra02 (the lower lines), PlaylistStarted and AdPlaylistStarted.
- The rules of the active discipline: Discipline, Features (Fouls, Timeouts, Shootout, Penalties, CentrePass, CountUp, TwoGoalLead, SuddenDeath), PeriodLabels, PenaltyKinds, the foul state, the players on court, the timeouts left, the penalty lists, the shoot-out, the centre pass.
- The match status: MatchStatus, MatchStatusText, MatchWinner, ScoringLocked, the interval values and AutoInterval.
- The info screens: InfoOnAir, InfoScreens and InfoFields.
- Labels: the texts of the remote page in the language of the program.

Appendix C.3 lists every field. Fields that a program does not know should be ignored: later versions can add fields. The remote page polls GET every 0.6 seconds; a panel of your own can do the same.

## 14.3 Command Groups

| Group | Commands |
|---|---|
| Names and lines | set_home_team, set_guest_team, line_text_1, line_text_2 |

| Group | Commands |
|---|---|
| Score | set_home_score, set_guest_score, set_home_score_up, set_home_score_down, set_guest_score_up, set_guest_score_down |
| Team fouls | set_home_fault, set_guest_fault, set_home_fault_up, set_home_fault_down, set_guest_fault_up, set_guest_fault_down, foul_reset |
| Clock | set_chronometer, click playpause, click stop |
| Timeouts | timeout_home, timeout_guest |
| Penalties and cards | add_home_penalty, add_guest_penalty, cancel_home_penalty, cancel_guest_penalty, card_home, card_guest |
| Shoot-out | shootout_home, shootout_guest, shootout_clear |
| Periods and match | click period_1 ... period_6, click shootout, click first_half / second_half / extra_1 / extra_2, new_match, interval, auto_interval, centre_pass, unlock_scoring |
| Info screens | info_show, info_hide, info_set, info_list |
| Display and others | match, click st / sp / ad / ck, horn |
| Media | volume, start_playlist, start_playlist_ad_screen |
| State | GET |

Appendix C describes every command with its values and its reply.

# 15. Settings Reference

## 15.1 The Settings Tab

Click "Settings" in the menu bar. The buttons on the left open the pages of the tab:

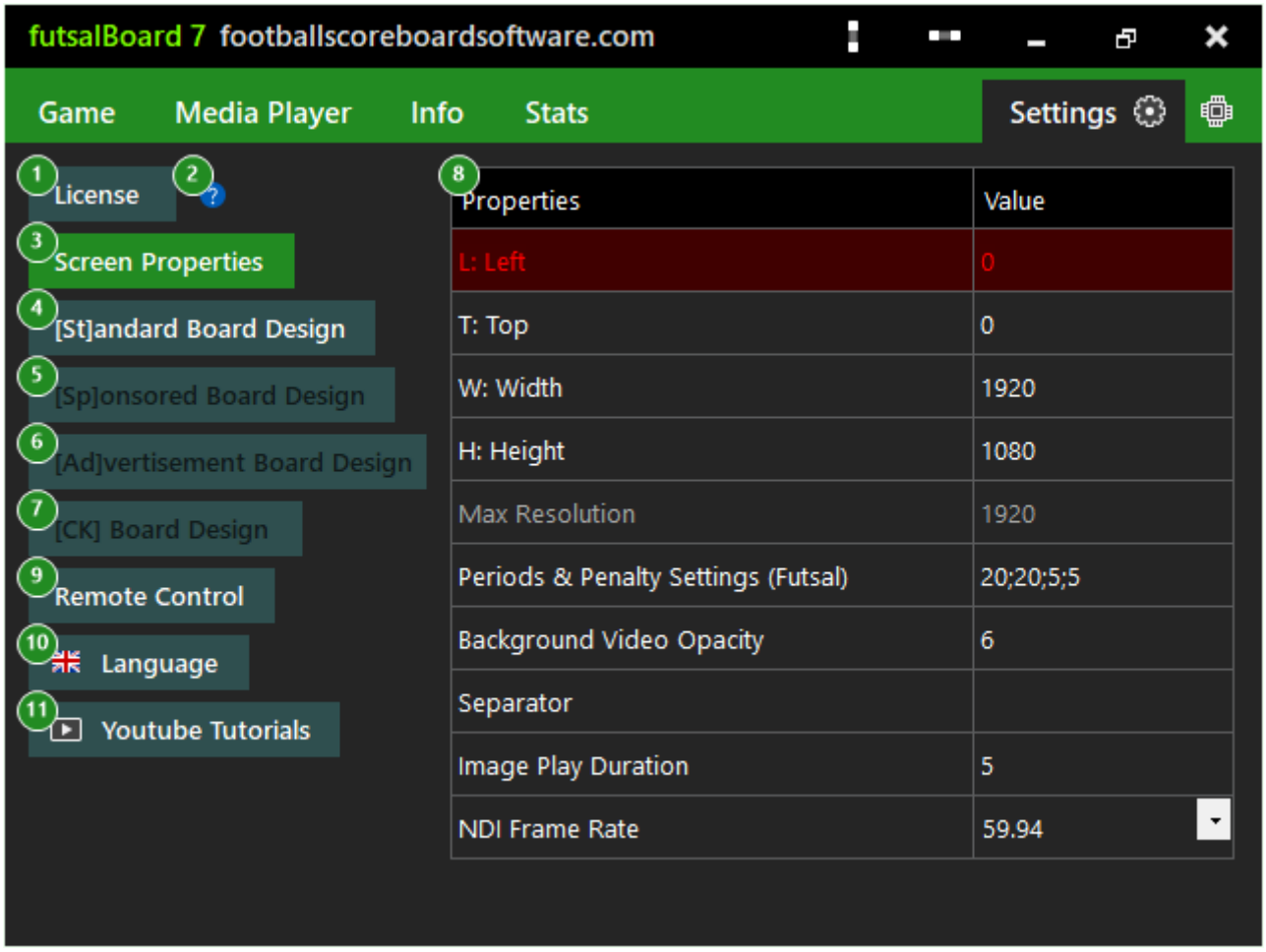
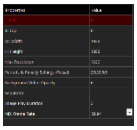



*Figure 111. The Settings tab with the Screen Properties page.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | License | **License** | Opens the License page: Computer ID, licence key, Save and the USB licence (chapter 3). |
| 2 | ? | **?** | Opens the License Info box: validation, Max Resolution, expiry date, model, options and the result of the date check. |
| 3 | Screen Properties | **Screen Properties** | Opens the Screen Properties table: board position and size, Max Resolution, the period row, background video opacity, separator, image play duration and NDI frame rate. |
| 4 | [St]andard Board Design | **[St]andard Board Design** | Opens the design editor of the Standard board. Enabled only in the St display mode. |
| 5 | [Sp]onsored Board Design | **[Sp]onsored Board Design** | Opens the design editor of the Sponsored board. Enabled only in the Sp display mode. |
| 6 | [Ad]vertisement Board Design | **[Ad]vertisement Board Design** | Opens the design editor of the Advertisement board. Enabled only in the Ad display mode. |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 7 | [CK] Board Design | **[CK] Board Design** | Opens the design editor of the Chroma Key board. Enabled only in the CK display mode. |
| 8 |  | **Properties / Value** | The settings table. Click a value, type (or press F2) and leave the cell: the change is applied and saved at once. An empty value is refused (except Separator). |
| 9 | Remote Control | **Remote Control** | Opens the Remote Control page: on / off, address, QR code and PIN (chapter 13). |
| 10 | Language | **Language** | Opens the Language page: program language, translations and titles. |
| 11 | Youtube Tutorials | **Youtube Tutorials** | Opens the video tutorials of futsalBoard 7 on YouTube in the web browser. |

| Button | Opens | Chapter |
|---|---|---|
| "License" (and ? for the License Info box) | The licence page: Computer ID, licence key, USB licence | 3 |
| "Screen Properties" | The board position and size and the other settings of section 15.2 | 15.2 |
| "[St]andard Board Design", "[Sp]onsored Board Design", "[Ad]vertisement Board Design", "[CK] Board Design" | The design editor of that display mode. Only the button of the current display mode can be clicked. | 15.3, 11 |
| "Remote Control" | The remote control page | 15.4, 13 |
| "Language" | Language, translations and titles | 15.5 |
| "Youtube Tutorials" | The video tutorials of futsalBoard 7 on YouTube, in the web browser | – |

## 15.2 Screen Properties

The page is a table with the columns "Properties" and "Value". Click a value and type the new one (or press F2 to edit it), then leave the cell with Enter or a click elsewhere. The change takes effect and is saved in start.xml at once; there is no Save button. An empty value is not accepted (except for "Separator"): the old value comes back.

| Row | Default | Values | What It Does |
|---|---|---|---|
| "L: Left" | 0 | Pixels | X position of the board windows on the Windows desktop |
| "T: Top" | 0 | Pixels | Y position of the board windows |
| "W: Width" | 960 | Pixels, up to Max Resolution | Width of the board windows. A larger value is cut to Max Resolution. |
| "H: Height" | 540 | Pixels, up to Max Resolution | Height of the board windows. A larger value is cut to Max Resolution. |
| "Max Resolution" | From the licence (38400 in DEMO) | Read only (grey) | The largest width and height the licence allows |
| "Periods & Penalty Settings (Futsal)" | 20;20;5;5 in futsal | Four numbers | The minutes of the periods of the active discipline (see below). The button in the cell opens the rules dialog. |
| "Background Video Opacity" | 6 | 0-10 | Strength of the background video behind the board and the info screens (0 = invisible, 10 = full). An invalid value is set back to 6. |
| "Separator" | Empty | Text | When set, the St, Sp and Ad boards show both scores in one field with this text between them (for example 2-1). Empty = two separate score fields. The CK board always shows two fields. |
| "Image Play Duration" | 5 | 1-120 seconds | How long a picture stays on screen in a Media Player playlist. An invalid value is set back to 5. |
| "NDI Frame Rate" | 59.94 | 23.976, 25, 29.97, 30, 50, 59.94, 60 | The frame rate of the NDI output (chapter 12). A choice is saved at once; a running NDI output restarts with the new rate. |

> **Note:** The board size and position apply to the board windows of all display modes. Set W and H to the pixel size of the screen or LED output that shows the board (chapter 9).

### The Period Row

The row name carries the active discipline, for example "Periods & Penalty Settings (Futsal)" or "Periods & Penalty Settings (Netball)". Its value is the minutes of the four period slots of that discipline, separated by semicolons: in futsal 20;20;5;5 means two periods of 20 minutes and two extra-time periods of 5 minutes.

- Type four whole numbers from 0 to 99. The first one cannot be 0. Any other text saves nothing and the stored value comes back.
- The minutes are saved into the rules of the active discipline (the same values as in the rules dialog). A slot that the discipline does not use keeps its value.
- A match in progress takes the new minutes; it is not reset.
- The row is read again every time the page opens, so it follows a discipline change made on the control panel.
- Select the row: a button appears at the right of the value. It opens the rules dialog of chapter 7 with every rule of every discipline. When the dialog closes, the table is read again.

## 15.3 Board Design Tabs

"[St]andard Board Design", "[Sp]onsored Board Design", "[Ad]vertisement Board Design" and "[CK] Board Design" open the design editor for the board of that display mode. Only the button of the display mode that is on now can be clicked (the others are grey); switch the display mode on the Game tab first. The design editor is described in chapter 11.

## 15.4 Remote Control

The Remote Control page switches the remote server on port 1907 on or off ("Disable" ticked = off), shows the address and a QR code for phones and tablets (for example http://192.168.1.20:1907/logon.html) and holds the PIN (123456 on a new installation). The remote control is off on a new installation. Every control of the page is described in chapter 13.2 and 13.3. The page closes with the red button at the top right or with Esc.

## 15.5 Language

The Language page chooses the language of the program and edits its texts. It has two tabs, "Language" and "Titles". It also opens from the language icon on the Game tab (tooltip "Language Settings"). The page closes with the red button at the top right or with Esc.

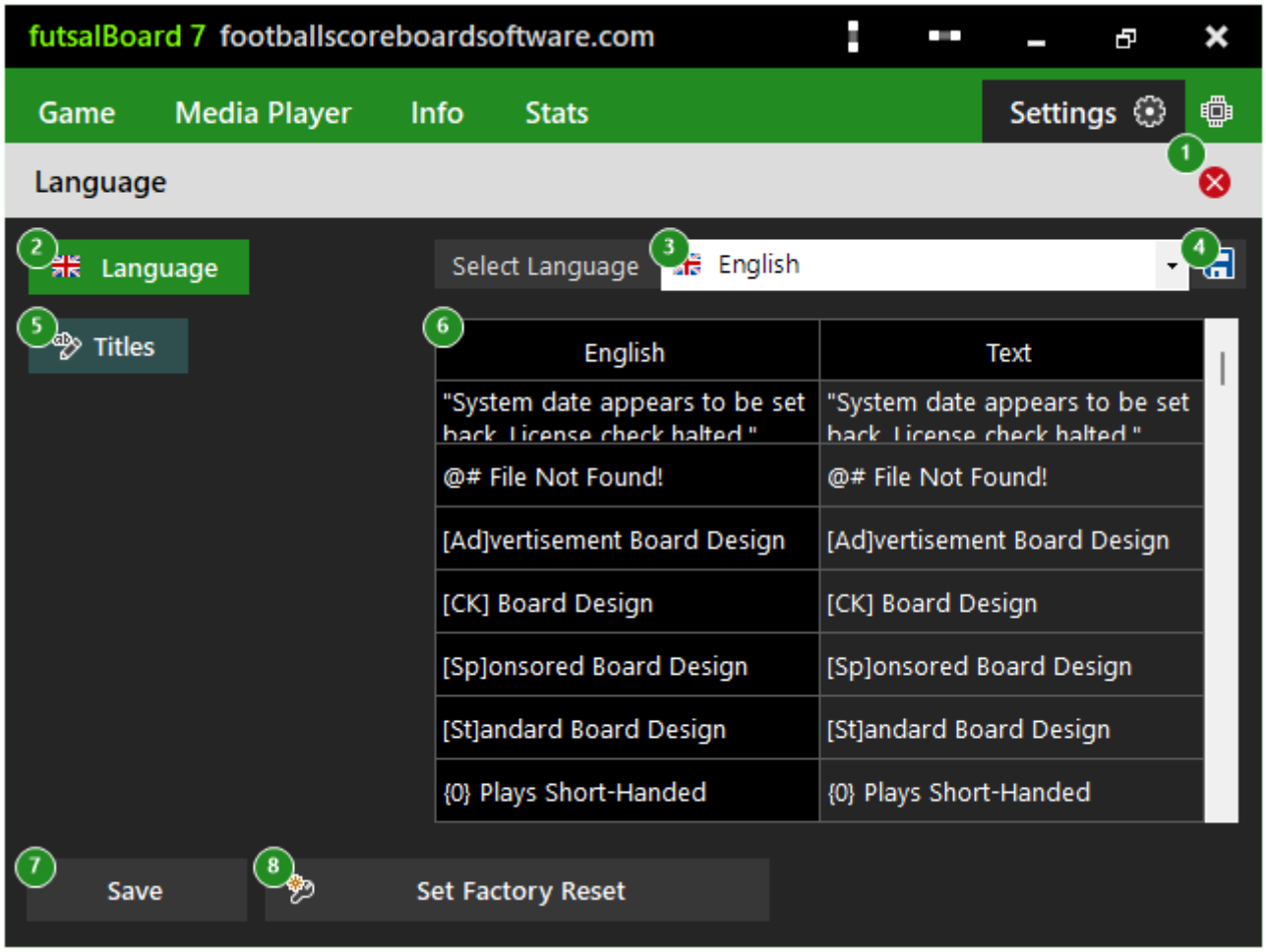
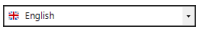
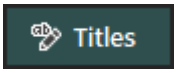
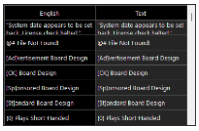
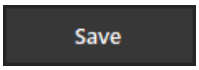
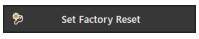



*Figure 112. Settings > Language, the Language tab.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 |  | **Close** | Closes the Language page (also Esc). |

| No. | Control | Name | What It Does |
|---|---|---|---|
| 2 |   | **Language** | Shows the translation table of the language chosen in Select Language. |
| 3 |   | **Select Language** | Chooses a language: the table shows its texts. The program language changes only with the disk button and a restart. |
| 4 |  | **Save Language (disk)** | Makes the chosen language the program language and asks for a restart of the program. |
| 5 |   | **Titles** | Shows the titles of the classic info screens (title.xml). |
| 6 |  | **English / Text** | The texts: English (read only) and Text. Select a Text cell and press F2 to edit it. |
| 7 |   | **Save** | Saves the changed texts into lang.xml (Language tab) or title.xml (Titles tab). Green while there are unsaved changes. |
| 8 |   | **Set Factory Reset** | Language tab: replaces lang.xml with the factory texts of all languages, without a question. Titles tab: fills the titles with the texts of the program language. |

## Choosing the Language

1. Choose the language in "Select Language". The list has 46 languages, each with its flag.
2. Click the disk button beside the list. The program says "New Language Selected ! Please Restart Application."
3. Close futsalBoard 7 and start it again. The menus, the control panel, the boards, the info screens and the remote page use the new language.

Choosing a language in the list only shows its texts in the table; the program language changes with the disk button and the restart.

## Editing the Texts

The table shows every text of the program: "English" (read only) and "Text", the text in the language chosen in "Select Language". The rows are sorted by the Text column.

1. Click a cell of the Text column and press F2.
2. Type the new text and press Enter. "Save" turns green.
3. Click "Save". The changed texts are written into common\xml\lang.xml for the chosen language.

Texts with {0} keep the {0}: the program puts a name or a number there. Most texts are used the next time a page or a board is drawn; restart the program to be sure every page uses them. The remote page reads its texts once per language and needs a restart.

"Set Factory Reset" on the Language tab copies the factory texts (common\xml\langFactory.xml) over lang.xml at once, without a question: the edited texts of every language are lost.

## Titles

The Titles tab holds the titles of the classic info screens of chapter 10 (Info > Classic Screens): goal, own goal, penalty goal, the 2-minute penalties of the disciplines, yellow card, red card, second yellow,

substitution, referees, standings, results, fixtures, starting line-up, substitutes and trainer. The editors of these screens open this tab with their title button.

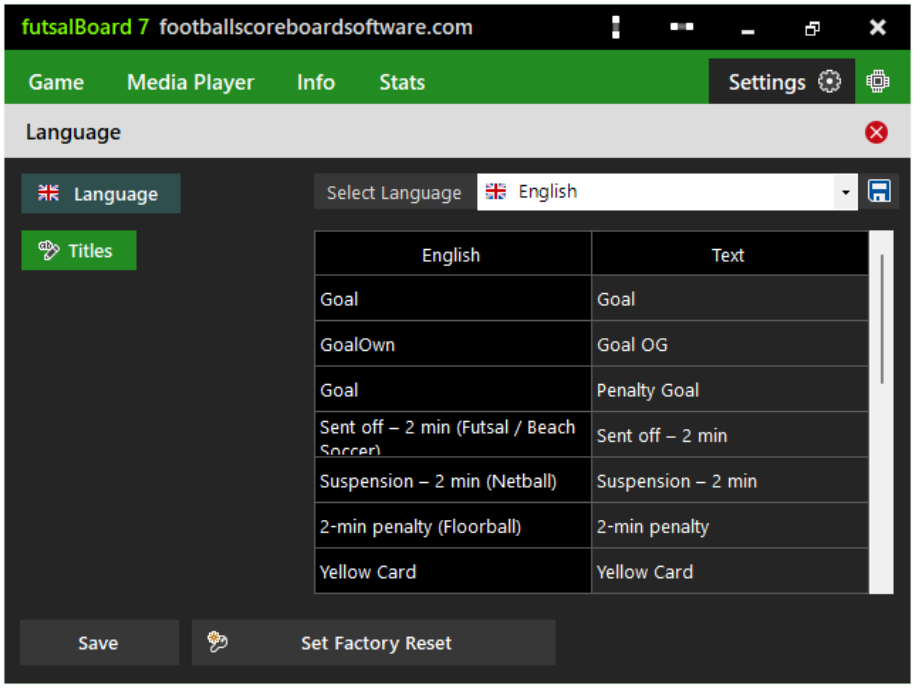



*Figure 113. Settings > Language, the Titles tab with the English titles.*

- "English" is the name of the title, "Text" the title the board shows. Edit and save as on the Language tab; the titles are saved in common\xml\title.xml.
- The titles follow the program language. At every start, and when you save another language on the Language tab, each title that is empty or still a factory text (of any language) is set to the text of the program language. A title you typed yourself is kept.
- "Set Factory Reset" on the Titles tab sets every title, also the ones you typed, to the text of the program language from lang.xml and shows them.

### Updates Keep Your Texts

lang.xml belongs to you: the setup never overwrites it. A new version brings its new texts in langFactory.xml only. At every start the program adds to lang.xml what it does not have yet:

- a text key that exists only in langFactory.xml is copied with all its languages;
- a language that is missing or empty in a key of lang.xml is filled from langFactory.xml;
- a text that exists in lang.xml is never changed, and nothing is removed.

Before the first change lang.xml is copied once to lang.xml.bak_premigration. Every addition is written to lang.migration.log (beside start.xml) and to the log file. A damaged lang.xml is restored from its backup, or rebuilt from langFactory.xml (chapter 16.8).

## 15.6 Keyboard

The Keyboard Hook Manager sets the global keyboard shortcuts: they work while another program (for example the vision-mixer software) has the focus. Open it with the keyboard icon on the right of the Game tab (tooltip "Keyboard Active"). The icon is green while the shortcuts are on and red while they are off.

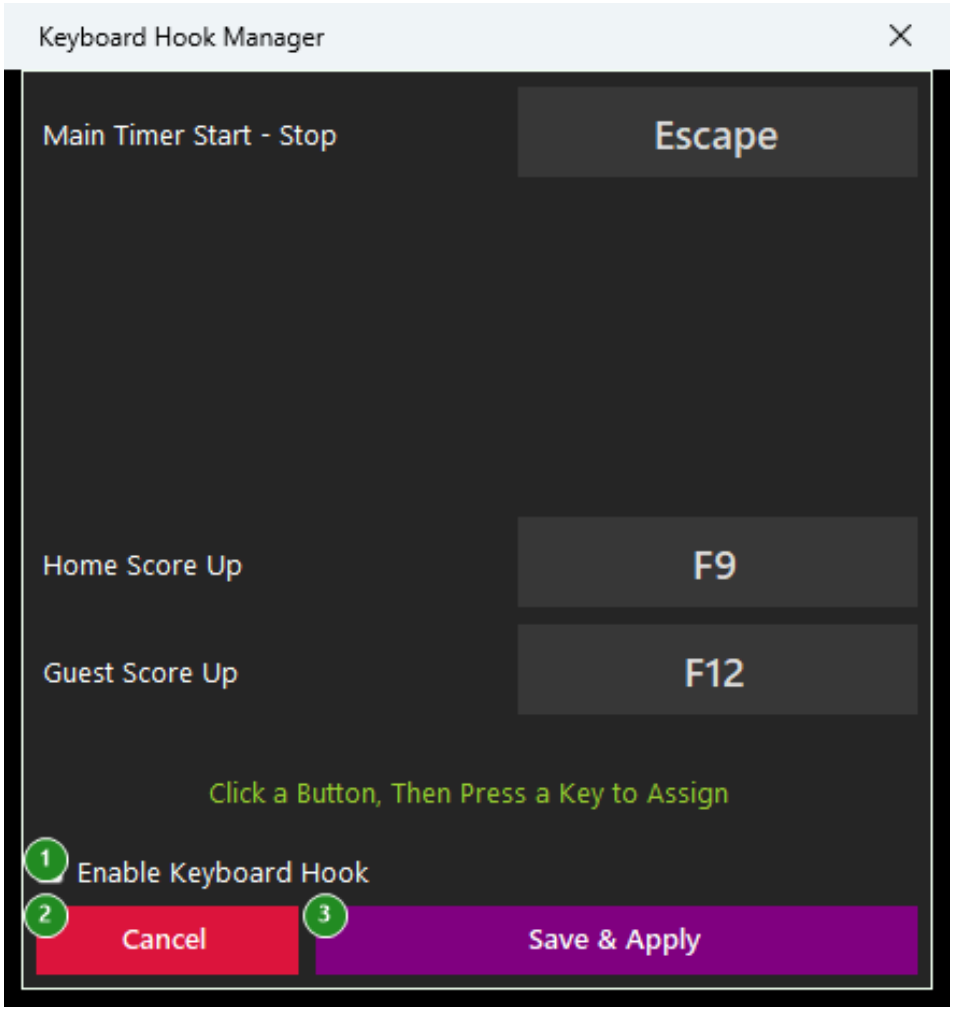



*Figure 114. The Keyboard Hook Manager with the default keys.*

| No. | Control | Name | What It Does |
|---|---|---|---|
| 1 | Enable Keyboard Hook | **Enable Keyboard Hook** | Switches the global keyboard shortcuts on (ticked) or off; applied with Save & Apply. |
| 2 | Cancel | **Cancel** | Closes the dialog without saving. |
| 3 | Save & Apply | **Save & Apply** | Saves the keys and the on / off choice and applies them at once. |

| Action | Default Key | Same As |
|---|---|---|
| "Main Timer Start - Stop" | Escape | The start / stop button of the match clock |
| "Home Score Up" | F9 | The goal arrow of the home team (one goal more) |
| "Guest Score Up" | F12 | The goal arrow of the guest team |

1. Tick "Enable Keyboard Hook". The shortcuts are off on a new installation.

2. To change a key, click its box (it turns green, "Click a Button, Then Press a Key to Assign"), then press the new key. The box shows the Windows name of the key, for example F5, NumPad7 or Space.
3. Click "Save & Apply". The keys work at once and again at every start of the program while the box is ticked. "Cancel" closes without saving.

Good to know (Appendix A has the summary):

- The key also reaches the program that has the focus: the shortcuts do not take it away. Esc, F9 and F12 can also do something in that program.
- A key pressed together with Ctrl, Shift or Alt is ignored.
- Holding a key down repeats it: tap the keys.
- The keys of the numeric keypad have other names with NumLock off (for example Home instead of NumPad7). Keep NumLock as it was when you assigned the key.
- In DEMO mode the scores of both teams cannot be changed: the score keys show "License Required !".

## 15.7 Where the Settings Are Kept

All settings are stored in C:\futsalBoard7\start.xml (and config.xml, configSp.xml, configAd.xml, configCK.xml). The program saves them at once and keeps the previous version as <file>.bak (chapter 16.8). start.xml is not part of the setup: the program creates it with the first-start values when it is missing.

# 16. Troubleshooting and FAQ

## 16.1 The Board Is Black or Empty (WebView2)

The boards and the info screens are drawn by the Microsoft Edge WebView2 Runtime. When it is missing, the setup downloads and installs it (chapter 2.1).

If the runtime is missing when futsalBoard 7 starts (for example, it was removed after the installation, or the setup could not download it), the program says "Microsoft Edge WebView2 Runtime Is Not Installed. The Scoreboards Cannot Be Shown Without It." with the address of the download page. Yes opens that page; No goes on without it. The program starts, but the board windows stay black or empty. The log file of the day (section 16.7) has the line "WebView2 runtime is missing".

1. Install the Microsoft Edge WebView2 Runtime (Evergreen) from the download page, or run the setup of futsalBoard 7 again.
2. Restart futsalBoard 7.

If the board turns black during a match, the board engine has stopped. The program shows no message in this case. Restart the program: the score and the settings are saved. Update the graphics driver if it happens again.

## 16.2 Display Scaling

We recommend a Windows display scaling of 100 % (Windows Settings > System > Display > Scale) for the monitor of the control window and for the board output. Other values (125 %, 150 %) may need adjustment: the windows and texts of the program can be enlarged, cut or blurred, and the board position and size of Screen Properties (chapter 15.2) may need to be set again so that they match the pixels of the output.

## 16.3 Fonts

The setup installs the fonts of the boards in Windows (C:\futsalBoard7\install_fonts.ps1), and the program also loads them from C:\futsalBoard7\common\font at every start. If a board shows a wrong font, run the font installation again in a PowerShell window opened as administrator:

```
powershell -ExecutionPolicy Bypass -File C:\futsalBoard7\install_fonts.ps1
```

Then restart the program.

## 16.4 Licence and USB

- At start the program reads the Computer ID through Windows WMI (it waits up to 30 seconds) and looks for USB sticks with a licence (up to 8 seconds), then continues in any case.
- If Windows cannot report the hardware data, the program runs in DEMO and a notice says "License check unavailable - Windows WMI error. Try: winmgmt /verifyrepository". Run that command in a command prompt opened as administrator, restart the PC and the program.
- A USB stick plugged in after the start is not seen: plug it in and restart the program. The licence file futsal7License.xml must be in the root folder of the stick.
- A PC licence is the file futsal7License.xml in C:\futsalBoard7. "License Key Not Valid!" when you save a key means the key belongs to another PC or stick: after a hardware change, send the new Computer ID to support.
- An expired licence, or a PC clock set back before the last start, gives DEMO without a message. Check the ? License Info box on the License page (chapter 3) and the Windows date and time.

## 16.5 The Remote Control Is Not Reachable

| Problem | Fix |
|---|---|
| The phone cannot open the page | Is "Disable" unticked in Settings > Remote Control? Are the phone and the PC in the same network? Is the address correct, with :1907 (http://<PC address>:1907/logon.html)? Try "Local Test" on the PC. |
| "Local Test" works, the phone does not | The firewall blocks port 1907. Run C:\futsalBoard7\open_firewall_1907.bat as administrator: it adds the four "futsalBoard 1907" rules if they are missing. Check other firewall or security software, and that the Wi-Fi is not a guest network that separates its devices. |
| "Remote Control Could Not Start: Port 1907 Is in Use" | Another program (for example a second copy of futsalBoard 7 or another Board7 program) uses the port. Close it, then tick and untick "Disable". |
| "Remote Control PIN Is Not Set: Set a PIN on the Scoreboard PC" | Type a PIN on the Remote Control page and save it with the disk button. |
| "Too Many Wrong PINs: Try Again in 60 s" | 5 wrong PINs were entered on this device. Wait one minute and enter the right PIN. |
| The page goes back to the logon page | The PIN was changed on the PC, or the session ended after 12 hours without use. Log on again. |
| The connection dot is red | The phone lost the network, or the program on the PC was closed or the remote control switched off. |
| The Internet address does not work | The router must forward TCP port 1907 to the PC. |

## 16.6 NDI

- Grey NDI button that does not start: the NDI runtime cannot be used on this PC. Rest the mouse on the button for the reason ("NDI unavailable: ..."). The runtime file Processing.NDI.Lib.x64.dll is installed with the program in C:\futsalBoard7; repair or reinstall futsalBoard 7 if it is missing, and restart.
- Amber NDI button: the stream stopped ("NDI stopped: ... - click to reset"). Click it to reset it, then click it again to start the stream.
- The source does not appear in the receiver: PC and receiver in the same network, NDI not blocked by the firewall. The sender is called Fs7_NDI on a new installation.
- The NDI frame rate is set in Screen Properties > "NDI Frame Rate" (chapter 15.2).

## 16.7 Log Files

The program writes a log file per day: C:\futsalBoard7\logs\fs7_yyyy-MM-dd.log, kept for 14 days. When that folder cannot be written, the logs go to %ProgramData%\futsalBoard7\logs. Send the log of the day of the problem to support. At every start it records the program version, Windows, .NET, the WebView2 runtime, the NDI runtime, the licence mode and the Computer ID, and the log folder; later it records warnings and errors.

If the program meets an internal error, a notice says "futsalBoard7: an internal error was logged and the application continues." with the name of the log file. An error the program cannot recover from shows "futsalBoard7 hit an unrecoverable error and must close." with the place of the log.

## 16.8 Damaged Settings Files

Every settings file (start.xml, config*.xml, lang.xml, players, playlists, designs) is saved safely: the program writes a temporary copy first and keeps the previous version as <file>.bak. If a file is damaged or empty (for example after a power cut), the program restores it at the next load from the temporary copy or the backup, keeps the damaged copy as <file>.corrupt-<date and time> and writes it into the log. lang.xml without a usable backup is rebuilt from langFactory.xml; a missing start.xml or config file is created with the factory values. At most five .corrupt files are kept per file, none older than 30 days.

To start with fresh settings: close the program and rename start.xml. The program creates a new one with the first-start values. The licence file futsal7License.xml stays valid.

## 16.9 FAQ

The score does not change. The program runs in DEMO: the scores of both teams cannot be changed and the PC shows "License Required !". A remote or API request gets the answer "#License Required (DEMO)". Check Settings > License (chapter 3).

A goal is refused and the "Final" tag flashes red. A rule has ended the match (golden goal, two-goal lead). Click the "Final" tag and confirm "Unlock Scoring?" to reopen the match, or start a new match (chapter 6).

A timeout from the remote or the API does nothing. A timeout can only be started while the match clock is stopped, and only while the team has a timeout left (futsal: one per period, none in extra time; floorball: one per match; none in beach soccer and netball).

A period button does nothing. The period cannot be changed while the match clock or a timeout runs. Stop the clock first.

A shortcut key does nothing. Tick "Enable Keyboard Hook" in the Keyboard Hook Manager and click "Save & Apply" (chapter 15.6). Check NumLock for keys of the numeric keypad.

The board is in the wrong place or has the wrong size. Set "L: Left", "T: Top", "W: Width" and "H: Height" in Settings > Screen Properties (chapter 15.2), and use 100 % display scaling.

The Design button I need is grey in Settings. Only the design editor of the current display mode can be opened. Switch the display mode on the Game tab first (chapter 15.3).

My translations changed after an update. They did not: an update only adds new texts to lang.xml (chapter 15.5). "Set Factory Reset" on the Language tab replaces all texts with the factory texts.

I chose a language and nothing changed. Click the disk button beside "Select Language" and restart the program.

The playlist number 7 plays playlist 1. The Media Player and the Ad page have six playlists: use 1 to 6 (chapter 13.5).

My NDI receiver shows a green picture. That is the Chroma Key display mode with its key colour. Key it in the receiver or the vision mixer, or switch to another display mode (chapter 9).

# Appendix A: Keyboard Shortcuts

## A.1 Global Shortcuts

The global shortcuts work in every program while "Enable Keyboard Hook" is ticked in the Keyboard Hook Manager (Game tab, keyboard icon; chapter 15.6). They are off on a new installation.

| Action | Default Key | What It Does |
|---|---|---|
| "Main Timer Start - Stop" | Esc (box text Escape) | Starts or stops the match clock, as the start / stop button of the control panel |
| "Home Score Up" | F9 | One goal for the home team, as its goal arrow (with the goal rules of the discipline) |
| "Guest Score Up" | F12 | One goal for the guest team |

- Only these three actions exist. Each can be given another key in the Keyboard Hook Manager.
- The key is not taken away from the program that has the focus: it does its own work there too.
- A key pressed together with Ctrl, Shift or Alt is ignored. Holding a key down repeats the action.
- Keys of the numeric keypad have other names with NumLock off; keep NumLock as it was when the key was assigned.
- In DEMO mode the scores of both teams cannot be changed ("License Required !").

> **Note:** With the shortcuts on, Esc starts and stops the match clock even when you press it to close a page or a dialog of futsalBoard 7. Assign another key to "Main Timer Start - Stop" (for example a function key you do not use elsewhere) if you close pages with Esc during a match.

## A.2 Keys in the Program

| Key | Where | What It Does |
|---|---|---|
| Esc | Settings pages (Remote Control, Language), info editors, dialogs | Closes the page or dialog |
| Enter | A typed score on the control panel | Takes the typed score (chapter 6) |
| F2 | Screen Properties table, Language table | Starts editing the selected value |

## A.3 Keys on the Remote Logon Page

On a PC browser the logon page of the remote control (chapter 13.4) also takes the keyboard: the digits 0-9 type the PIN, Backspace deletes the last digit, Enter logs on. In the edit boxes of the remote page Enter sets the value (one-line fields) and Esc closes the box.

# Appendix B: Rule Quick Reference per Discipline

The factory rules of the four disciplines, as "Set Default" loads them in the rules dialog (chapter 7). Every value can be changed per discipline. Sources: FIFA Futsal Laws of the Game 2025-26, FIFA Beach Soccer Laws of the Game 2024-25, World Netball Rules of Netball 2024, IFF Rules of the Game 2026.

## B.1 The Four Disciplines Side by Side

| Setting | Futsal | Beach Soccer | Netball | Floorball |
|---|---|---|---|---|
| Regular periods | 2 × 20 min | 3 × 12 min | 4 × 15 min | 3 × 20 min |
| Period labels | P1, P2 | P1, P2, P3 | Q1, Q2, Q3, Q4 | P1, P2, P3 |
| Extra time | 2 × 5 min (E1, E2) | 1 × 3 min (ET) | 2 × 7 min (E1, E2) | 10 min overtime (OT) |
| "Intervals (Min)" | 15;0;0 | 3;3;0 | 4;12;4;4;1 | 10;10;2 |
| Half-time | After P1 (15 min) | None (two intervals) | After Q2 (12 min) | None (two intervals) |
| "Start Interval Automatically" | On (one setting for all) | On | On | On |
| "Clock" | Count Down | Count Down | Count Down | Count Up |
| "Overtime Golden Goal" | Off | Off | Off | On |
| "Decider" | Shoot-Out | Shoot-Out | Two-Goal Lead | Shoot-Out |
| "Kicks per Team" | 5 | 5 | 0 | 5 |
| "Timeout Rule" | Per Period | None | None | Per Match |
| "Timeouts per Team" | 1 | 0 | 0 | 1 |
| "Timeout Duration (s)" | 60 | 0 | 0 | 30 |
| "Timeouts in Extra Time" | Off | Off | Off | On |
| "Team Fouls" | On | Off | Off | Off |
| "Warning at / DFKSAF From" | 5 / 6 | 5 / 6 (not used) | 5 / 6 (not used) | 5 / 6 (not used) |
| "Players on Court" | 5 | 5 | 7 | 6 |
| "Max Measured at Once" | 0 (no limit) | 0 (no limit) | 0 (no limit) | 2 |
| "End Penalty On Goal" | On | On | Off | On |
| "Stop Chronometer on Goal" | On | On | Off | On |
| Centre pass | - | - | Yes (alternates) | - |

The intervals are given in the order of the period rows: the value after each period, the last value is the gap between the last two period rows. Futsal 15;0;0 = 15 minutes after P1, none after P2 (before E1), none between E1 and E2. Netball 4;12;4;4;1 = after Q1, Q2, Q3, Q4 (before E1) and between E1 and E2. Floorball 10;10;2 = after P1, P2 and P3 (before overtime).

## B.2 Futsal

| Period Row | Minutes | Label |
|---|---|---|
| "1st Period" | 20 | P1 |
| "2nd Period" | 20 | P2 |
| "Extra Time - 1" | 5 | E1 |
| "Extra Time - 2" | 5 | E2 |

| Card / Penalty | On | Seconds | Button | Rule |
|---|---|---|---|---|
| "Yellow Card" | Yes | - | Y | Counted per player. A second yellow for the same shirt number becomes a sending-off. |
| "Sending-Off" | Yes | 120 | R | 2 minutes of numerical reduction (playing time). Ends earlier when the team with more players scores (5v4, 4v3: one player back; 5v3: one player back only; equal strength or a goal by the shorter team: no change). |

- Team fouls per period; the 5th foul shows the warning, from the 6th foul DFKSAF. Extra time continues the 2nd period count.
- Timeouts: 1 per team per period, 60 seconds; an unused timeout does not carry over; none in extra time.
- Kicks from the penalty mark: 5 per team, then one each until one team scores and the other does not.

## B.3 Beach Soccer

| Period Row | Minutes | Label |
|---|---|---|
| "1st Period" | 12 | P1 |
| "2nd Period" | 12 | P2 |
| "3rd Period" | 12 | P3 |
| "ET" | 3 | ET |

| Card / Penalty | On | Seconds | Button | Rule |
|---|---|---|---|---|
| "Yellow Card" | Yes | - | Y | As in futsal; a second yellow becomes a sending-off. |
| "Sending-Off" | Yes | 120 | R | 2 minutes of numerical reduction, ended by a goal of the team with more players as in futsal. |
| "Blue Card" | No | 120 | B | Optional (not in the FIFA Laws): 2 minutes, reduces the team, never ends on a goal. |

- No timeouts, no team fouls.
- Kicks from the penalty mark: 5 per team, then sudden death.

## B.4 Netball

| Period Row | Minutes | Label |
|---|---|---|
| "1st Quarter" | 15 | Q1 |
| "2nd Quarter" | 15 | Q2 |
| "3rd Quarter" | 15 | Q3 |
| "4th Quarter" | 15 | Q4 |
| "Extra Time - 1" | 7 | E1 |
| "Extra Time - 2" | 7 | E2 |

| Card / Penalty | On | Seconds | Button | Rule |
|---|---|---|---|---|
| "Caution" | Yes | - | W | Counted only (warning / caution). |
| "Suspension" | Yes | 120 | S | 2 minutes of playing time, the team plays one short; never ends on a goal. |
| "Ordered Off" | Yes | 240 | O | 4 minutes of playing time, then a substitute may come on; never ends on a goal. |

- Level after the last period (E2, or Q4 when extra time is 0 minutes): play goes on until a team leads by two goals ("Two-Goal Lead", then "Final").
- The centre pass alternates after each goal; a new match starts with the home team.
- No timeouts (injury stoppages are not timeouts), no team fouls, no shoot-out. A goal does not stop the clock.

## B.5 Floorball

| Period Row | Minutes | Label |
|---|---|---|
| "1st Period" | 20 | P1 |
| "2nd Period" | 20 | P2 |
| "3rd Period" | 20 | P3 |
| "Overtime" | 10 | OT |

| Card / Penalty | On | Seconds | Button | Rule |
|---|---|---|---|---|
| "Bench Penalty" | Yes | 120 | 2 | Reduces the team; ends on a goal of the opponent unless the scoring team was short- |

| Card / Penalty | On | Seconds | Button | Rule |
|---|---|---|---|---|
| | | | | handed or at equal strength. |
| "Major Bench Penalty" | Yes | 240 | 2+2 | Two parts of 2 minutes; a goal ends only one part. |
| "5-Minute Penalty" | No | 300 | 5 | Optional national penalty (not in IFF 2026); reduces the team, never ends on a goal. |
| "10-Minute Personal Penalty" | Yes | 600 | 10 | Given together with a 2-minute bench penalty; starts after the bench penalties of the player; does not reduce the team. |
| "Match Penalty" | Yes | - | MP | For the rest of the match, given together with a 2+2 major bench penalty. |

- At most 2 penalties per team measured at once and 1 per player; the others wait in the order given.
- Penalties continue into overtime; after overtime every penalty except a match penalty ends.
- Overtime: the first goal ends the match ("Golden Goal", then "Final").
- Timeouts: 1 per team per match, 30 seconds, also in overtime, never during the penalty shots.
- Penalty shots: 5 per team, then sudden death.
- The clock counts up from 00:00 to 20:00.

## B.6 Where the Rules Show

| Rule | Control Panel | Board | Remote / API |
|---|---|---|---|
| Team fouls, warning, DFKSAF | Foul boxes (yellow / red) | Foul cells (yellow / red plate) | HomeFoulState, GuestFoulState |
| Timed penalties | Penalty lists | Penalty rows, red card marks | HomePenaltyList, HomeStrength, HomeOneShort |

| Rule | Control Panel | Board | Remote / API |
|---|---|---|---|
| Intervals | Interval button, "Half-Time" / "Interval" tag | Main clock countdown, status label | MatchStatus, IntervalLeft, AutoInterval |
| Golden goal, two-goal lead, final | Match state tag | Status label | MatchStatus, MatchWinner, ScoringLocked |
| Centre pass | "Centre Pass" buttons | Yellow dot beside the team | CentrePass |
| Shoot-out | Marks, tick and cross buttons | Ticks and crosses | ShootoutHome, ShootoutWinner |

The snapshot keys are described in chapter 14 and Appendix C.

# Appendix C: HTTP API Command Reference

## C.1 Request and Replies

Request (chapter 14):

```
http://<PC address>:1907/api.html?_=<number>&pin=<PIN>&cmd=<command>&value=<value>$
```

- Command names are not case-sensitive, except GET.
- home and guest name the team. In text values an underscore _ is a new line.
- Reply column: "!" is the reply !<command>, "!v" is the reply !<value>:<command> (the value as sent, HTML-encoded). Chapter 14.1 lists the error replies.
- A command that cannot act at that moment still gives its normal reply; nothing changes. Check the result with GET.

The groups follow API_Commands.txt in C:\futsalBoard7, the developer's reference with more examples.

## C.2 Commands

### Names and Lower Lines

| Command | Value | What It Does | Reply |
|---|---|---|---|
| set_home_team | Text | Sets the home team name. _ = new line (second line of the name). | !v |
| set_guest_team | Text | Sets the guest team name. | !v |
| line_text_1 | Text | Sets lower line 1 of the board. _ = new line. [D] = the current day, [T] = the current time, [T8] / [T5] = only the first 8 / 5 characters of the time. | !v |
| line_text_2 | Text | Sets lower line 2, the same way. | !v |

### Score

| Command | Value | What It Does | Reply |
|---|---|---|---|
| set_home_score, set_guest_score | Number | Sets the score to this number. A higher score applies the goal rules once per goal (a numerical reduction that ends on the goal, the netball centre pass); a lower score is a correction without rules. It never ends the match by a rule: the deciding score stays pending until the next goal or until the operator confirms it on the control panel. | !v |
| set_home_score_up, set_guest_score_up | – | One goal, as the goal arrow of the control panel. It can end one opponent penalty and stop the clock when those options are on (chapter 7), and it can end the match by a rule (overtime golden goal, netball two-goal lead). Refused while scoring is locked. | ! |
| set_home_score_down, set_guest_score_down | – | One goal less (correction). | ! |

Without a licence (DEMO mode) the score and team-foul commands of both teams (set_home_score, set_guest_score, the _up and _down commands, set_home_fault, set_guest_fault and their _up and _down commands) reply #License Required (DEMO) and change nothing.

### Team Fouls

Team fouls are counted in futsal (Mode 0).

| Command | Value | What It Does | Reply |
|---|---|---|---|
| set_home_fault, set_guest_fault | Number | Sets the accumulated team fouls of the team. | !v |
| set_home_fault_up, set_guest_fault_up | – | One team foul more. This stops the clock. | ! |
| set_home_fault_down, set_guest_fault_down | – | One team foul less. | ! |
| foul_reset | – | Clears the accumulated team fouls of the current period. No question. | ! |

### Clock

| Command | Value | What It Does | Reply |
|---|---|---|---|
| set_chronometer | play | Starts the clock (the remaining time is kept). Nothing when it runs. | !v |
| set_chronometer | pause | Stops the clock. Nothing when it is stopped. | !v |
| set_chronometer | stop | A running clock stops; a stopped clock is set back to the start of the period. | !v |
| set_chronometer | mm:ss, for example 01:23 | Sets the clock to this time; this also stops it. | !v |
| click | playpause | Starts or stops the clock, as the start / stop button. | !v |
| click | stop | As the stop button: the first press stops the clock, a press on a stopped clock sets it back to the start of the period. | !v |

The values of set_chronometer are written in small letters. Any other value without a colon is ignored.

### Timeouts

| Command | Value | What It Does | Reply |
|---|---|---|---|
| timeout_home, timeout_guest | – | Starts a timeout of the team, or ends it when it is already running. Refused while the match clock runs (except to end the running timeout) and when the team has no timeout left. The allowance follows the | ! |

| Command | Value | What It Does | Reply |
|---|---|---|---|
| | | discipline: futsal one per period and none in extra time, floorball one per match, none in beach soccer and netball. | |

## Player Penalties and Cards

| Command | Value | What It Does | Reply |
|---|---|---|---|
| add_home_penalty, add_guest_penalty | number;seconds, for example 7;120 | A timed penalty for the player. The penalty kind with this duration is used; if none has it, the first kind that reduces the team gets this duration. The countdown runs with the match clock. | !v |
| cancel_home_penalty, cancel_guest_penalty | Row index, 0 = first | Cancels the penalty in that row of the list returned by GET (HomePenaltyList / GuestPenaltyList). | !v |
| card_home, card_guest | number;kind, for example 7;R | A card or penalty of the active discipline, exactly as the panel buttons. kind = the kind id, its name or its button text (see below). Without a number (only the kind) it is given to the team / an official. Kinds that are switched off in the rules dialog are refused. | !v |

The kinds (id and button text):

| Discipline | Kinds |
|---|---|
| Futsal, Beach Soccer | Yellow (Y), SendingOff (R), BlueCard (B, beach soccer option, off by default) |
| Netball | Warning (W), Suspension (S, 2 minutes), OrderedOff (O, 4 minutes) |
| Floorball | Minor (2), Major (2+2), Personal (10, adds its 2-minute bench penalty), Match (MP, adds its 2+2 bench penalty), FiveMinute (5, option, off by default) |

A second yellow card for the same number becomes a sending-off with the 2-minute numerical reduction. GET PenaltyKinds lists the kinds that are switched on.

## Shoot-Out

| Command | Value | What It Does | Reply |
|---|---|---|---|
| shootout_home, shootout_guest | 1 = scored, 0 = missed, undo = remove the last attempt (also o / x, true / false, goal / miss) | A kick from the penalty mark (futsal), a shoot-out kick (beach soccer) or a penalty shot (floorball). | !v |
| shootout_clear | – | Clears all shoot-out attempts. No question. | ! |

## Periods and Match

| Command | Value | What It Does | Reply |
|---|---|---|---|
| click | period_1 ... period_6 | Selects that period of the active discipline (the slots listed in GET PeriodLabels), and brings the Game tab and the scoreboard back. Only while the match clock and a timeout are stopped. period_1 during a match starts a new match without a question. | !v |
| click | shootout | Selects the shoot-out period (where the discipline has one). | !v |
| click | first_half, second_half, extra_1, extra_2 | The older names of the first four period buttons. | !v |
| new_match | – | Period 1 and the clock at its start; the score, penalties and sent-off timers, team fouls, timeouts, cards, the shoot-out and the timeline are cleared. Teams, players, logos and settings stay. No question. Refused while the clock or a timeout runs. | ! |
| interval | start, stop, toggle (or empty), or a number of minutes | The interval / half-time clock after the current period: start with its configured length, stop it, toggle, or start it with that many minutes. Refused while the match clock or a timeout runs. It also starts by itself when a period ends and the match goes on, unless auto_interval is off. | !v |
| auto_interval | on, off, toggle (also 1 / 0, true / false; empty = toggle) | The setting "Start Interval Automatically", the same as the "A" button of the control panel. | !v |
| centre_pass | home, guest, toggle (empty = toggle) | Netball: the team that takes the next centre pass. It still alternates after each goal. | !v |
| unlock_scoring | – | Opens a match again that a rule has ended (floorball overtime goal, netball two-goal lead), so goals are accepted again. No question. | ! |

## Info Screens

| Command | Value | What It Does | Reply |
|---|---|---|---|
| info_show | Screen, Screen\|Field.Key=value\|... | Sets the fields first, then shows the screen on the active display: St, Sp, Ad = the full page, CK = the lower third. Only the screens of the active discipline are accepted (GET InfoScreens). Example: Goal\|Goal.Side=Home\|Goal.Scorer=10\|Goal.Assist=7. | !v |
| info_hide | – | Takes the info screen off: back to the scoreboard; in CK the lower third fades out. | ! |

| Command | Value | What It Does | Reply |
|---|---|---|---|
| info_set | Field.Key=value | Sets one field without showing the screen. A choice takes one of its option keys, a number field digits only. A wrong key or value is ignored (a warning goes to the log). | !v |
| info_list | List.Key=rows | Replaces a list: rows separated by \|, cells by ~. An empty value after = clears the list. Example: Officials.Rows=Referee~D. Moreau~\|Timekeeper~E. Arda~ | !v |

Screens: Goal, Card, Fouls (futsal), PowerPlay, Timeout (futsal, floorball), Penalty (futsal, beach soccer, floorball), Shootout (futsal, beach soccer, floorball), PeriodResult, MatchResult, Substitution, Lineup, Intro, Potm, Stats, Standings, Results, Officials.

| Field | Values |
|---|---|
| Goal.Side | Home, Guest |
| Goal.Scorer, Goal.Assist | A shirt number or a name of the team list |
| Goal.Time | Text; empty = the match time |
| Goal.Kind | Goal, Penalty, SecondMark, OwnGoal (futsal); Goal, Penalty, OwnGoal (beach soccer); Goal, PenaltyShot, PowerPlayGoal, ShortHanded, EmptyNet, OwnGoal (floorball) |
| Card.Side, Card.Player, Card.Kind | Home / Guest; a player; a kind id of PenaltyKinds (Yellow, SendingOff, Suspension, Minor ...) |
| Timeout.Side | Home, Guest |
| Penalty.Side, Penalty.Kind, Penalty.Taker, Penalty.Keeper, Penalty.Result | Home / Guest; PenaltyKick, SecondMarkKick, PenaltyShotKind; a player; a player; Pending, Scored, Saved, Missed |
| Substitution.Side, Substitution.Out, Substitution.In | Home / Guest; players |
| Lineup.Side | Home, Guest |
| Intro.Side, Intro.Player, Intro.Note | Home / Guest; a player; text |
| Potm.Award, Potm.Side, Potm.Player, Potm.Goals, Potm.Assists, Potm.Saves | PlayerOfTheMatch, TopScorer, BestGoalkeeper, BestPlayer; Home / Guest; a player; numbers |
| Standings.Title, Results.Title | Text |
| Officials.Rows (list) | role~name~country per row |

The live values of a screen on air (penalty, one-short and timeout timers, fouls, shoot-out, score) follow the match and stop with the match clock.

### Display and Others

| Command | Value | What It Does | Reply |
|---|---|---|---|
| match | – | Brings the Game tab to the front and the scoreboard back on the board (an info screen on the St board is taken off). | ! |
| click | st, sp, ad, ck | Switches the display mode: Standard, Sponsored, Advertisement, Chroma Key. Then works as match. | !v |
| horn | – | Sounds the horn. | ! |

### Media

| Command | Value | What It Does | Reply |
|---|---|---|---|
| volume | 0 = mute, 1 = sound on (also on) | Switches the sound of the program off or on. | !v |
| start_playlist | 1 ... 6 (empty = 1) | Opens the Media Player tab and starts that playlist. If a playlist already plays, it stops it. Any other number: the reply #Invalid Playlist Number (1-6), nothing plays. | !v |
| start_playlist_ad_screen | 1 ... 6 (empty = 1) | Switches to the Advertisement mode, opens the Ad page and starts that playlist of its Media Player. If a playlist already plays there, it stops it. Any other number: the reply #Invalid Playlist Number (1-6), nothing plays. | !v |

### State

| Command | Value | What It Does | Reply |
|---|---|---|---|
| GET | – | The state of the board as XML (C.3). Must be written in capitals. | XML |

## C.3 Fields of GET

The reply is one Item inside Response. Booleans of StatusChronometer are true or false; the other flags are 1 or 0. A program should ignore fields it does not know.

### Board

| Field | Content |
|---|---|
| BoardType | The display mode: St, Sp, Ad, CK |
| Version | The program version, for example 7.6.10.13 |

| Field | Content |
|---|---|
| Home, Guest | The team names (a second line after a line break) |
| HomeScore, GuestScore | The score |
| HomeFault, GuestFault | The accumulated team fouls (futsal) |
| Mode | 0 Futsal, 1 Beach Soccer, 2 Netball, 3 Floorball |
| Period | 1-4 = the period slots of the discipline, 5 = the shoot-out, 6 and 7 = slots 5 and 6 (netball extra time) |
| Chronometer | The match clock, mm:ss |
| StatusChronometer | true while the clock runs |
| Timeout_Timer | The timeout countdown value |
| Timeout_H, Timeout_G | Timeouts used by the team |
| HomePenalties, GuestPenalties | Running penalties: number,mm:ss entries separated by \| (empty = none) |
| Extra01, Extra02 | Lower line 1 and 2 |
| PlaylistStarted, AdPlaylistStarted | 1 while a playlist of the Media Player / of the Ad page is started, 0 otherwise |
| PenaltyLevels | The penalty presets of older remote panels: seconds~title entries separated by \| |
| HasFouls | 1 = the discipline counts team fouls |
| UseTimeout | 1 = timeouts are used |
| Labels | The texts of the remote page in the language of the program: one L element per text, with the key in the attribute k |

## Rules of the Active Discipline

| Field | Content |
|---|---|
| Discipline | Futsal, Beach, Netball, Floorball |
| Features | Fouls, Timeouts, Shootout, Penalties, CentrePass, CountUp, TwoGoalLead, SuddenDeath (those of the discipline, separated by commas) |
| PeriodLabels | period_N:Label entries separated by \|, for example period_1:P1\|period_2:P2\|period_3:E1\|period_4:E2: the values for click period_N |
| PenaltyKinds | The kinds that are switched on: id,text,seconds entries separated by \|, for example Yellow,Y,0\|SendingOff,R,120 |
| HomeFoulState, GuestFoulState | Empty, warning (5th foul) or dfksaf (6th foul and later) |
| HomeStrength, GuestStrength | Players on court |
| Strength | For example 5v4; empty at full strength |
| HomeOneShort, GuestOneShort | Time left of the shortest numerical reduction, mm:ss |

| Field | Content |
|---|---|
| HomeTimeoutsLeft, GuestTimeoutsLeft | Timeouts left in this period (or match) |
| TimeoutSeconds | Length of a timeout in seconds |
| HomePenaltyList, GuestPenaltyList | number,mm:ss,kind,state entries separated by \|; state run, queued or personal |
| ShootoutHome, ShootoutGuest | Every attempt, sudden death included, for example [O] [X] [O] |
| ShootoutHomeScore, ShootoutGuestScore | The shoot-out score |
| ShootoutKicks | Kicks per team before sudden death |
| ShootoutWinner | Empty, home or guest |
| CentrePass | Netball: home or guest, the team with the next centre pass (empty in the other disciplines) |

## Match Status

| Field | Content |
|---|---|
| MatchStatus | Empty, halftime, interval, twogoallead, goldengoal or final |
| MatchStatusText | The status label of the board in the language of the PC, for example Half-Time |
| MatchWinner | Empty, or home / guest when a rule ended the match |
| ScoringLocked | 1 = the match is over, goals are refused |
| IntervalRunning | 1 while the interval clock runs |
| IntervalLeft | The interval countdown, mm:ss; empty when none runs |
| IntervalLabel | Half-Time or Interval: the interval after the current period |
| IntervalNext | Seconds of the interval after the current period (0 = none) |
| AutoInterval | 1 = the interval starts by itself when a period ends |

## Info Screens

| Field | Content |
|---|---|
| InfoOnAir | The key of the screen on air; empty = none |
| InfoScreens | Key~Label entries separated by \| (the screens of the discipline) |
| InfoFields | Screen~Field.Key~Kind~Label~Option=Label/... entries separated by \|; Kind is Choice, Text or Number |

# Appendix D: Files and Folders

Everything futsalBoard 7 needs lives in C:\futsalBoard7. The program always works in this folder, whatever the "Start in" folder of the shortcut says.

## D.1 Program Folder

| File or Folder | Contents | Upgrade / Uninstall |
|---|---|---|
| futsalBoard7.exe, futsalBoard7.exe.config | The program | Replaced / removed |
| AForge*.dll, Microsoft.Web.WebView2.*.dll, Microsoft.WindowsAPICodePack.*.dll, Newtonsoft.Json.dll, PVS.MediaPlayer.dll, QRCoder.dll, SharpDX*.dll | Libraries: camera, board renderer, media player, QR code, GPU screen capture | Replaced / removed |
| Processing.NDI.Lib.x64.dll, NDILibDotNet2.dll | The NDI output | Replaced / removed |
| runtimes\win-x64\native | The WebView2 loader | Replaced / removed |
| start.xml | All settings, the rules of each discipline, the keyboard keys, the remote PIN, the match info. Created at the first start. | Kept / kept |
| config.xml | Banner, Announce and the info screen settings | Kept / kept |
| configSp.xml, configAd.xml, configCK.xml | Sponsored, Advertisement and Chroma Key settings | Kept / kept |
| futsal7License.xml | The PC licence key (written when you save a key on the License page) | Kept / kept |
| futsalBoard7Help.pdf | This guide (desktop shortcut "futsalBoard7 Help") | Replaced / removed |
| API_Commands.txt | The HTTP API reference (Appendix C) | Replaced / removed |
| open_firewall_1907.bat, install_fonts.ps1 | Helpers to repeat the firewall and font steps of the setup (chapter 2) | Replaced / removed |
| lang.migration.log | The texts added to lang.xml by an upgrade (created when needed) | Kept / kept |

| File or Folder | Contents | Upgrade / Uninstall |
|---|---|---|
| futsalBoard7.exe.WebView2 | The browser data of the boards, emptied at every start | Kept / kept |
| logs | One log file per day, fs7_yyyy-MM-dd.log, kept for 14 days | Kept / kept |

If C:\futsalBoard7\logs cannot be written, the log files go to C:\ProgramData\futsalBoard7\logs.

## D.2 The common Folder

| Folder or File | Contents | Upgrade / Uninstall |
|---|---|---|
| common\data | Your data: teams (dataTeams.xml, team_*.xml), players (playersHome.xml, playersGuest.xml), match events (dataEvents.xml), statistics (dataStats.xml), standings, results and fixtures, logos list, officials (referees.xml), sponsors (sponsors.xml), playlists (playList*.xml) | Kept / kept |
| common\font | The eight fonts of the boards | Replaced / removed |
| common\images | Team and league logos, card and event icons, the Video Support pictures | Replaced / removed |
| common\images\flags | The language flags | Replaced / removed |
| common\sounds | The horn and signal sounds (01.wav to 05.wav) | Replaced / removed |
| common\remote | The remote control pages (logon.html, rcpanel.html) and a copy of API_Commands.txt | Replaced / removed |
| common\vizrt\storage | The factory designs (St, Sp, Ad, CK and the master designs), the factory design list | Factory files replaced and removed; your saved designs kept |

| Folder or File | Contents | Upgrade / Uninstall |
|---|---|---|
| | (dataBoardsFactory.xml) and the designs you save | |
| common\vizrt\storage\dataBoards.xml | Your design list of the design gallery | Kept / kept |
| common\vizrt\current | The working designs: the board and info screen pages in use | Kept / kept |
| common\vizrt\factory_current | The factory copy of the working designs, used to update unchanged designs at the start | Rebuilt by every install / removed |
| common\vizrt\js | The scripts of the board pages | Replaced / removed |
| common\xml\lang.xml | All interface texts in 46 languages, with your changes | Kept / kept |
| common\xml\langFactory.xml | The factory copy of the texts | Replaced / removed |
| common\xml\title.xml | Your info screen titles | Kept / kept |
| common\xml\css.xml | The style properties of the design editor | Replaced / removed |
| common\xml\svr_01.xml to svr_03.xml | Country and league lists for an online league download; this version does not use them | Replaced / removed |
| common\xml\CPULicense.html, USBLicense.html | The licence terms pages | Replaced / removed |

## D.3 The media Folder

| Folder | Contents | Upgrade / Uninstall |
|---|---|---|
| media\videos | Background and demo videos (BlackRoyal.mp4 is the first-start background) | Factory files replaced and removed; files you added kept |
| media\images\backgrounds | Background pictures | As media\videos |
| media\images\players | Player photos | As media\videos |
| media\images\sponsors | The sponsor plates | As media\videos |

| Folder | Contents | Upgrade / Uninstall |
|---|---|---|
| media\downloads | The data and pictures of standings, results and fixtures, and the team logos | Kept / kept |

## D.4 Backup Copies of the Settings Files

The program saves every settings file safely: it writes a new copy first and keeps the previous version beside it.

| File | Meaning |
|---|---|
| name.bak | The previous version of the file |
| name.tmp | A save in progress; left-over files are cleaned at the start |
| name.corrupt-time | A damaged file that was replaced by its backup at the start (at most 5 per file, none older than 30 days) |
| name.bak_premigration | The file as it was before an upgrade changed it, for example lang.xml.bak_premigration |

When a settings file is damaged or missing, the program restores it from its backup at the start (lang.xml from langFactory.xml) or creates it with the factory values, and shows a short notice at the bottom right of the screen.

## D.5 Outside the Program Folder

| Where | What |
|---|---|
| Windows font folder | The eight fonts installed by the setup (they stay after an uninstall) |
| Windows firewall | The rules "futsalBoard 1907 TCP IN", "futsalBoard 1907 UDP IN", "futsalBoard 1907 TCP OUT" and "futsalBoard 1907 UDP OUT" (they stay after an uninstall) |
| Desktop (all users) | The shortcuts "futsalBoard7" (run as administrator) and "futsalBoard7 Help" |
| USB stick | futsal7License.xml in the root folder (USB licence) |