iceBoard 7

Ice Multi-Sport Scoreboard Software

User Guide



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1 Introduction

iceBoard 7 is the scoreboard software for ice rinks. One program runs the scoreboard for **ice hockey**, **para ice hockey**, **ringette**, **broomball** and **curling**. You operate the match on the Game page of one Windows PC, and iceBoard 7 renders the scoreboards, sponsor boards, TV graphics and information screens live on LED walls, projectors, monitors and video mixers.

This guide starts with a short Quick Start. The chapters after it describe the main window, the pages and the outputs that all sports share. Then each sport has its own chapter: **Ice Hockey and Para Ice Hockey**, **Ringette**, **Broomball** and **Curling**, each with its rules, its Game panel, its menus and dialogs, all its outputs, its remote control and worked examples. The guide ends with complete usage scenarios, a quick reference, troubleshooting and the files and folders.

Sports and Disciplines

Choose the sport and its discipline with the sport button in the bottom bar of the Game page (see Quick Start). Each discipline sets the rules iceBoard 7 enforces: periods, clocks, penalties, timeouts, overtime and shoot-outs, or for curling the ends, the thinking time and the breaks. Change the values of a discipline for your league in **Time Settings**.

Sport	Discipline	Game	Overtime / tie	Timeouts	Penalties
Hockey	Ice Hockey (IIHF)	3 periods of 20:00, clock counts down	5:00 sudden-death overtime, then a shoot-out of 5 shots each	1 of 30 s	Minor 2:00 (ends on a goal), Major 5:00, Misconduct 10:00 (personal); two timed at once
Hockey	Para Ice Hockey (World Para Ice Hockey)	3 periods of 15:00	5:00 sudden-death overtime, then a shoot-out of 3 shots each	1 of 60 s	As ice hockey
Ringette	Ringette (4 x 10 Min), (2 x 20 Min), U14 (2 x 15 Min)	4 × 10:00 (U16 and older, AA), 2 × 20:00, 2 × 15:00 (U14); 30-second shot clock	One overtime period of regulation length	1 of 30 s per game, +1 per overtime	Minor 2:00 (cancelled by a goal), Unsportsmanlike Conduct 2:00 and Major 4:00 (fully served), Misconduct and Match Penalty (ejection)
Broomball	Broomball (Round Robin), (Playoff)	2 periods of 18:00 stop time	Round robin: 5:00 sudden death, a tie stands; playoff: 18:00 sudden-death periods until a goal	1 of 60 s	Minor 2:00 (ends on a goal), Major 5:00, Misconduct 10:00 (personal), Game Misconduct
Curling	Curling (10 Ends), (8 Ends), Club Curling (8 Ends), Mixed Doubles, Wheelchair (8 Ends), Wheelchair Mixed Doubles	10 or 8 ends; thinking time 38:00 / 30:00 / 22:00 / 26:00 per team (club: none)	Extra ends: the first team to score wins	1 of 60 s per game and 1 per extra end	–

Where the values come from: ice hockey follows the IIHF rule book; para ice hockey the World Para Ice Hockey rules (Paralympic competition format); ringette the Official Rules and Case Book of Ringette 2025–2027 of Ringette Canada (the International Ringette Federation plays these rules); broomball the Canadian Broomball Federation Rulebook 2025–2027; curling the World Curling Rules of Curling and Rules of Competition (edition 1 September 2026). The Rules as Implemented section of each sport chapter lists the rules in detail.

Outputs

iceBoard 7 renders four boards for every sport: **St** (the standard scoreboard), **Sp** (the scoreboard with a sponsor area), **Ad** (a narrow score column next to a video or advert area) and **CK** (a chroma-key overlay on green, for vision mixers). Each board can go to a window on any monitor (LED wall, projector, video wall) or to an NDI source, and an info screen (intro, announcements, result, goal, penalty, team list and officials graphics; the curling line score as a result) can replace the St board or the CK overlay at any time. See Outputs and The Info Page for details, and the Outputs section of each sport chapter for every screen of that sport.

System Requirements

- Windows 10 or Windows 11, 64-bit.
- Microsoft .NET Framework 4.8 (included in current Windows versions).
- Microsoft Edge WebView2 Runtime. It renders the boards. The setup checks for it and offers to open the download page when it is missing.
- A screen of at least 1920 × 1080 for the operator window, plus one extra monitor or video output for each board you show on a separate screen.
- A network connection if you use the remote control, NDI outputs or the state broadcast to other programs.

Installation and Activation

1. Run the iceBoard 7 setup as an administrator. The program installs to **C:\iceBoard7** and adds a desktop shortcut and a shortcut to this guide.
2. The setup adds the Windows Firewall rules for the remote control and the state broadcast, so phones and other PCs on your network can connect.
3. If .NET Framework 4.8 or the WebView2 Runtime is missing, the setup asks whether to open the download page. Install the missing part, then start iceBoard 7.
4. Activate the program with the licence you received when you bought it. A licence is bound either to the computer or to a USB drive that you plug into the scoreboard PC. Follow the instructions that came with your purchase. If you need help, contact the vendor through footballscoreboardsoftware.com.

> **Note** Your own designs, teams, players, logos, media, settings, keyboard shortcuts and match journals are kept in **C:\iceBoard7\data** . Updates and uninstalls leave this folder in place. To remove everything, delete the folder after you uninstall.

Pro and Lite Editions

iceBoard 7 is the **Pro** edition. A **Lite** edition, iceBoard 7 L, has the same sports and operation for one LED board. This guide describes iceBoard 7.

	iceBoard 7 (Pro)	iceBoard 7 L (Lite)
Sports, rule presets, control panels, Undo, crash restore	all	the same
Board outputs	St, Sp, Ad and CK – four windows on any monitors	St – one window
Info page, Screens page, team lists and photos	St and CK graphics	St graphics
Media Player	20 playlists and the URL list	one playlist and the URL list
Sp / Ad Media (sponsor strip, Ad slicing, banners)	yes	–
NDI output, Video Sources (camera, NDI receive, screen capture)	yes	–
Board designs: gallery and editor	all outputs	the St screens
Remote control, officials' phones, console link, UDP broadcast, keyboard shortcuts, 46 languages	yes	yes
Program folder	C:\iceBoard7	C:\iceBoard7L
Licence	licence of iceBoard 7	licence of iceBoard 7 L (the licences of the two editions are not interchangeable)

2 Quick Start

This walkthrough runs an ice hockey period and a curling end. Every step is described in detail in the sport chapters.

Choose the Sport and Discipline

- Click the sport button in the bottom bar of the Game page (it shows the running discipline, e.g. **Ice Hockey** ▾).
- In Choose Sport and Discipline click **Hockey**, **Ringette**, **Broomball** or **Curling** at the top, then the discipline below (for hockey: **Ice Hockey** or **Para Ice Hockey**). The window is shown for each sport in Starting a Match ▸ Choosing the Sport and Discipline.

If a match is in progress, iceBoard 7 asks whether to switch and start a new match. Each sport keeps its own team list, so your hockey teams and curling teams never get mixed up.

Your First Hockey Period

1. Choose **Hockey** and **Ice Hockey** (or **Para Ice Hockey**).
2. On the Teams page, enter both teams, their logos and the players with their numbers. Enter the event name and the venue there too.
3. At the face-off, click the green **Start** button under the clock or press `F1`. The clock counts down from 20:00 (para ice hockey 15:00).
4. A goal: choose the scorer in the number box under the score (▾ opens the team list), then click the ↑ arrow of the team. The clock stops by itself on a goal.
5. A penalty: choose the player in the number box and click **2 Min**, **5 Min** or **10 Min**. The penalty counts down while the clock runs; a goal of the other team ends a minor.
6. When the period ends, click **2nd Period**. Made a mistake? Click ↶ **Undo** or press `F12`.

> **Tip** Put the St board on the rink's LED screen before the game (see Outputs and Sending the Board to the LED Screen). Everything you enter on the Game panel appears on the boards immediately.

Your First Curling End

1. Choose **Curling** and **Curling (10 Ends)** (or the discipline of your game).
2. Enter both teams (e.g. *Team Lindqvist*) and their players on the Teams page.
3. Give the last stone of the first end (won by the Last Stone Draw or a coin toss) with **Hammer** under the team. A gold dot marks the hammer on the panel and on the boards.
4. When the team without the hammer delivers its first stone, click **Switch Thinking Time**. Click it again each time the other team becomes the delivering team; only one thinking clock runs.
5. At the end of the end, click the points of the scoring team (**1** … **8**) or **Blank End**. The line score fills in, the hammer goes to the team that did not score, and the break between ends starts.
6. After the scheduled ends the team with more points wins; a tie goes to an extra end, where the first team to score wins.

3 The Main Window

iceBoard 7 runs in one operator window. Six page tabs and the Settings tab sit on the coloured strip at the top; the **Game** page holds the control panel of the running sport, framed by the output strip on the left, the tool strip on the right and the on-air rows and bottom bar below.

The boards themselves are separate windows without a frame (one per output). You open them with the **St**, **Sp**, **Ad** and **CK** buttons; where each one goes (which monitor, full screen or an exact area) is set once on the Outputs page and kept for every later start.

Tabs and Side Strips

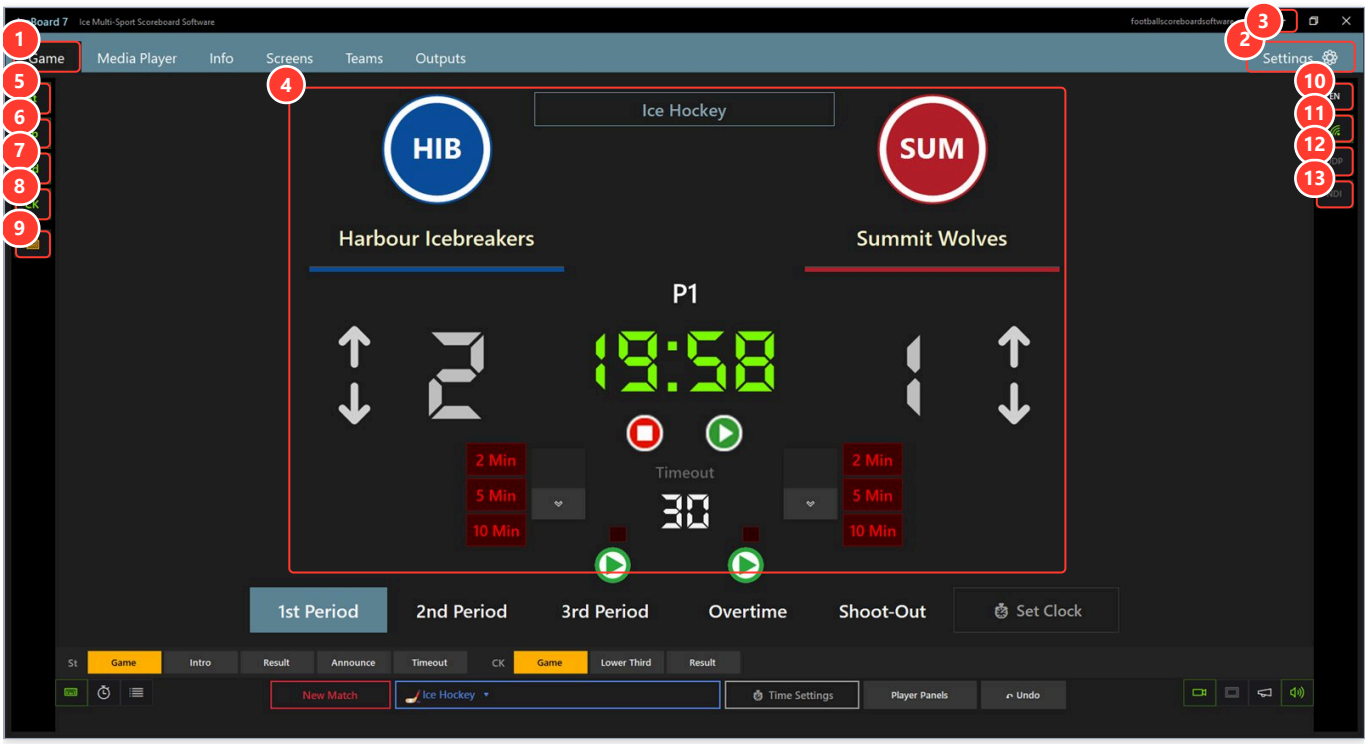


Figure 1. The Game page (Hockey): tabs, output strip (left) and tool strip (right)

#	Control	What it does
1	**Page tabs**	Switch between the pages **Game** (the control panel), **Media Player** (videos and pictures on the board), **Info** (event graphics), **Screens** (which screen each output shows), **Teams** (names, colours, logos, team lists) and **Outputs** (monitors, window positions, designs, NDI, Sp / Ad media, video sources). The open tab has the dark colour of the page below it. Clicking **Game** while the Media Player shows a clip brings the scoreboard back.
2	**Settings**	Opens the Settings page: language, remote control, console and UDP integration, keyboard shortcuts.
3	**Minimise / Maximise / Close**	The window buttons. Drag the title bar to move the window. Closing the main window also closes all board windows.
4	**Control panel of the sport**	The scoreboard controls of the running sport: clock, period, scores, fouls, timeouts, penalties, sets and so on. They are explained in the chapter of each sport. The panel grows with the window, and so do the drop-down menus it opens (Card ▾, player lists, More ▾ …): their text is as large as the buttons that open them.

#	Control	What it does
5	**St – Standard (LED) output**	Click to open or close the **Standard** board window (the main scoreboard for the LED wall, video board or a monitor in the venue). The letters light green while the window is open. Where the window goes is set once on the Outputs page (see *Sending the Board to the LED Screen*).
6	**Sp – Sponsored output**	Opens or closes the **Sponsored** board: the scoreboard with the sponsor strip. **Right-click** opens the *Sp / Ad Media* dialog at the **Sponsor Strip (Sp)** tab.
7	**Ad – Advertising output**	Opens or closes the **Advertising** board: the scoreboard slice next to a large advertising area and up to two banners. **Right-click** opens the *Sp / Ad Media* dialog at the **Ad Layout** tab.
8	**CK – Chroma Key (Video) output**	Opens or closes the **Chroma Key** window: broadcast graphics on a green background for a vision mixer (or with transparency over NDI). **Right-click** opens the *Video Sources* window (camera, NDI or screen capture under the CK graphics).
9	**Preview Design**	Opens the design gallery: every master and own design of the sport, rendered live with the running match. One click puts a design on an output (see *Board Designs*).
10	**Language**	Shows the language menu (the button shows the code of the current language). The chosen language is saved and used after the next start of the program (see *Settings*).
11	**Remote Control**	Switches the phone / tablet remote control (the built-in web server) on or off. Lit green while the server runs; the tooltip shows the port.
12	**UDP Broadcast**	Switches the UDP state broadcast for LED controllers and other listeners on or off. Lit green while it runs.
13	**NDI**	Switches NDI on or off for **every output that is open**. Lit green while at least one open output sends NDI. NDI per output is on the Outputs page.

On-Air Rows and Bottom Bar

Below the control panel are two rows: the on-air screens of the St and CK outputs, and the bottom bar with the match commands and the tool icons.

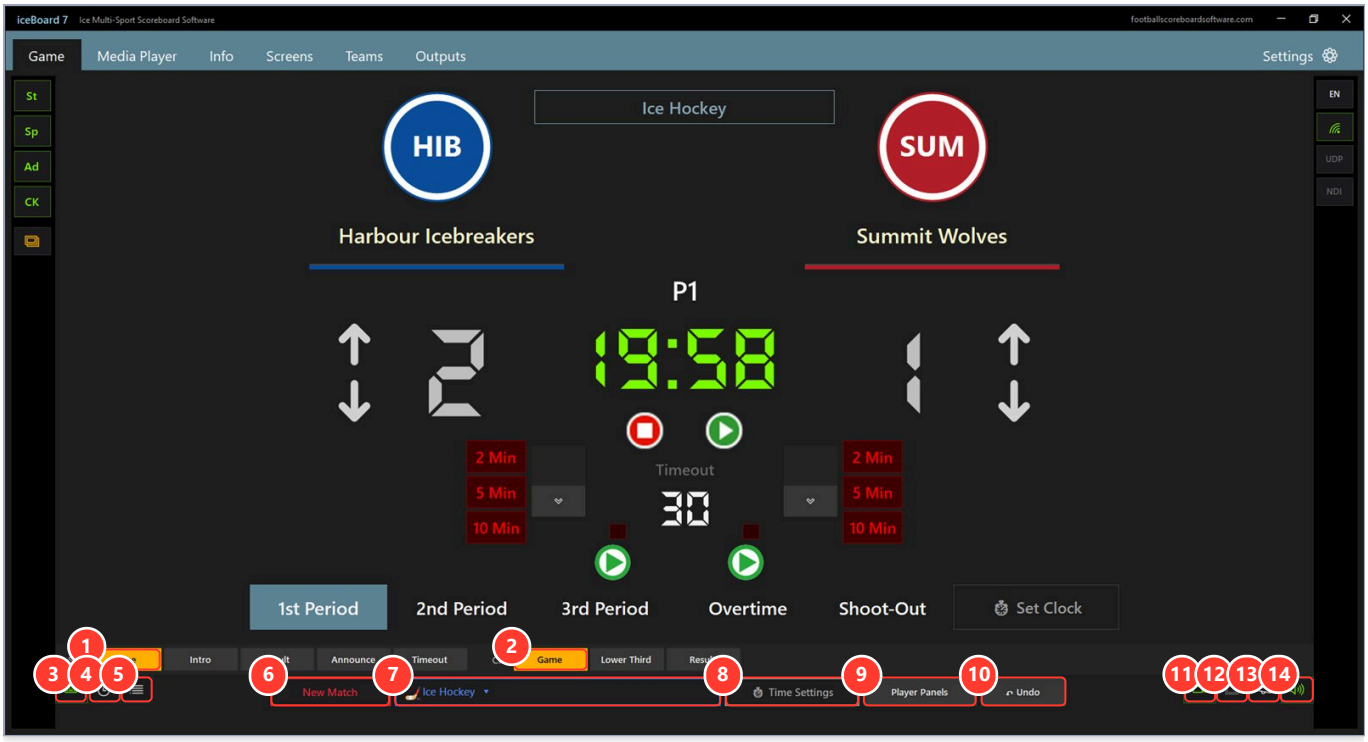


Figure 2. The Game page: on-air screens and bottom bar

#	Control	What it does
1	**St screens**	The screens of the Standard board: **Game** (the scoreboard) and the info screens of the design (**Intro**, **Result**, **Announce**, **Timeout** …). The screen on air is amber; click **Game** to return to the scoreboard.
2	**CK screens**	The screens of the Chroma Key output: **Game** (score bug), **Lower Third** (announcement) and **Result**. Event graphics (goal, card, substitution, team list, officials) go on air from the Info page.
3	**Keyboard Shortcuts**	Opens the keyboard shortcut editor. Lit green while the global shortcuts are on.
4	**Time Settings (icon)**	Opens the Time Settings of the discipline – the same as the **Time Settings** button.
5	**Players**	Opens the Teams page with the team lists.
6	**New Match**	Starts a new match of the same sport and discipline after a confirmation. Scores, clocks and statistics are reset; teams and team lists stay.
7	**Sport · Discipline**	Shows the running sport and discipline (rule set). Click to choose another sport or discipline.
8	**Time Settings**	Period lengths and names, overtime, timeout, shot clock, team foul limit and penalty times of the discipline. Shown amber with a ***** when the times differ from the default values.
9	**Player Panels**	Switches the Standard game screen between the plain scoreboard and the scoreboard with player panels (number, name, fouls, points …). Lit amber while the player panels are shown. Only for sports with player statistics. A name that does not fit its panel is shortened to the initial and the surname before it is cut with "…".
10	**Undo**	Takes back the last change of the score, fouls, timeouts, penalties … (up to 100 steps). Keyboard: `Ctrl` + `Z`. The bottom bar has this button only in the timed sports; the other sports have their Undo on their own panel, so there is never more than one Undo button.
11	**Background Video**	Plays the background video behind the St, Sp and Ad boards (the CK output stays green). Without a video in *data\media\background* a file dialog asks for one first.

#	Control	What it does
12	**Background Picture**	Shows a background picture behind the St, Sp and Ad boards. Without a picture in *data\media\background* a file dialog asks for one first.
13	**Horn**	Sounds the horn once on the PC speakers.
14	**Sound On / Off**	Switches all sounds (horn, shot clock horn, timeout signal) on or off. Lit green while the sounds are on.

> **Tip** When the panel refuses an action (for example a timeout when all timeouts are used, or Undo with nothing left to undo), the reason appears in red in the line under the bottom bar.

The Four Outputs

Every design has a set of boards for four outputs. Each output is its own window and can go to its own monitor, to NDI or to both at the same time.

Output	Name in the program	What it shows	Typical use
St	Standard (LED)	The full scoreboard and the full-screen info screens (Intro, Result, Announce, Timeout, Goal, Card, Substitution, Player Intro, Team List, Officials).	LED wall, video board or TV in the venue
Sp	Sponsored	The scoreboard with the sponsor strip (pictures, videos or scrolling text, see *Sp / Ad Media*) and the scrolling text of the Info page.	Venue screens that also carry sponsors
Ad	Advertising	The screen sliced into a scoreboard part, a large advertising area and up to two banners (see *Sp / Ad Media*).	Side boards, perimeter or concourse screens
CK	Chroma Key (Video)	Broadcast graphics (score bug, lower third, result, player, substitution, team list, officials) on a green background. Over NDI the green is sent as transparency.	vMix, OBS, CasparCG, hardware vision mixers

Board elements that only matter at times stay off the board until they have something to show: on the St and Ad boards a heading such as **Penalty**, **2 Min**, **Sin Bin**, **Card** or **Red Cards** appears only while a team has such a penalty or card (no empty “Card 0 0”), and score breakdown chips use the right number (*1 Goal*, *2 Goals*).

Until you add your own files, the Sp and Ad boards show sample sponsor pictures and videos. The background video and picture (bottom bar) appear behind St, Sp and Ad only; CK always keeps its key colour.

The Four Boards

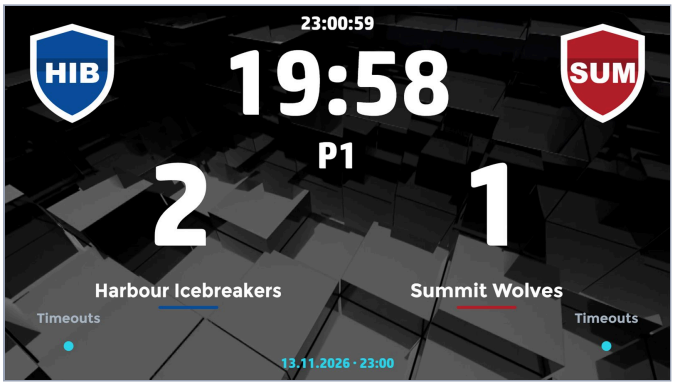


Figure 3. St – Standard (LED) board

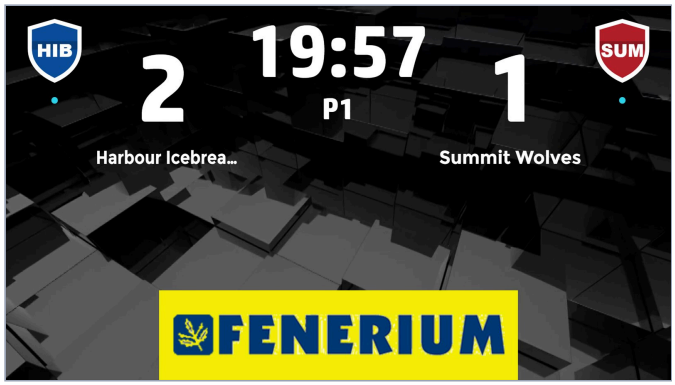


Figure 4. Sp – Sponsored board with the sponsor strip



Figure 5. Ad – Advertising board

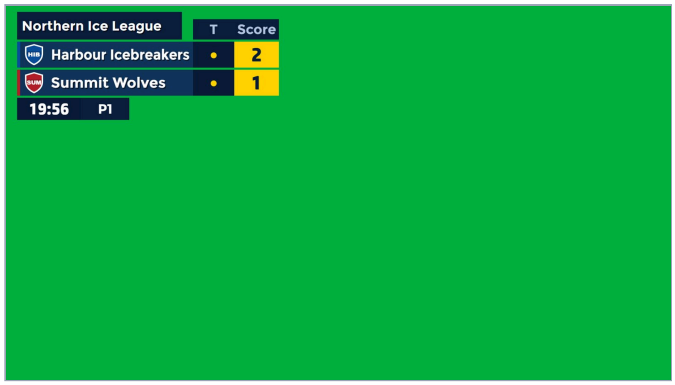


Figure 6. CK – Chroma Key output (green background)

Keys and Sounds in the Main Window

Key	What it does
`Space`	Starts or stops the game clock while the Game page is open (not while you type in a text box).
`Ctrl` + `Z`	Undo – the same as the Undo button (bottom bar or panel).
`F1` – `F12`, numpad	Global keyboard shortcuts of the sport (see *Keyboard Shortcuts*). They also work while another program has the focus.
`Esc`	Closes the open dialog (sport picker, Time Settings, Sp / Ad Media, keyboard shortcuts).
Right-click **Sp** / **Ad**	Opens the Sp / Ad Media dialog at the Sponsor Strip tab (Sp) or the Ad Layout tab (Ad).
Right-click **CK**	Opens the Video Sources window (camera, NDI or screen capture on the CK and Ad boards).

The program sounds the horn at the end of a period and of the match, a shot clock horn when the shot clock runs out, and a signal at the start and end of a timeout. Switch all sounds off with the speaker icon. To use your own horn, put a WAV file with the same name as the shipped sound (02.wav = horn, 03.wav = timeout, 04.wav = shot clock) into *data\sounds*.

4 Starting a Match

When iceBoard 7 starts, it opens the sport and discipline that were used last, with the team setup of that sport. Every command during the match is written to a match journal, so a match survives a power cut or a crash (see *Restoring a Match after a Crash*).

New Match

Click **New Match** in the bottom bar (set sports and some others also have it on their panel). A confirmation appears:

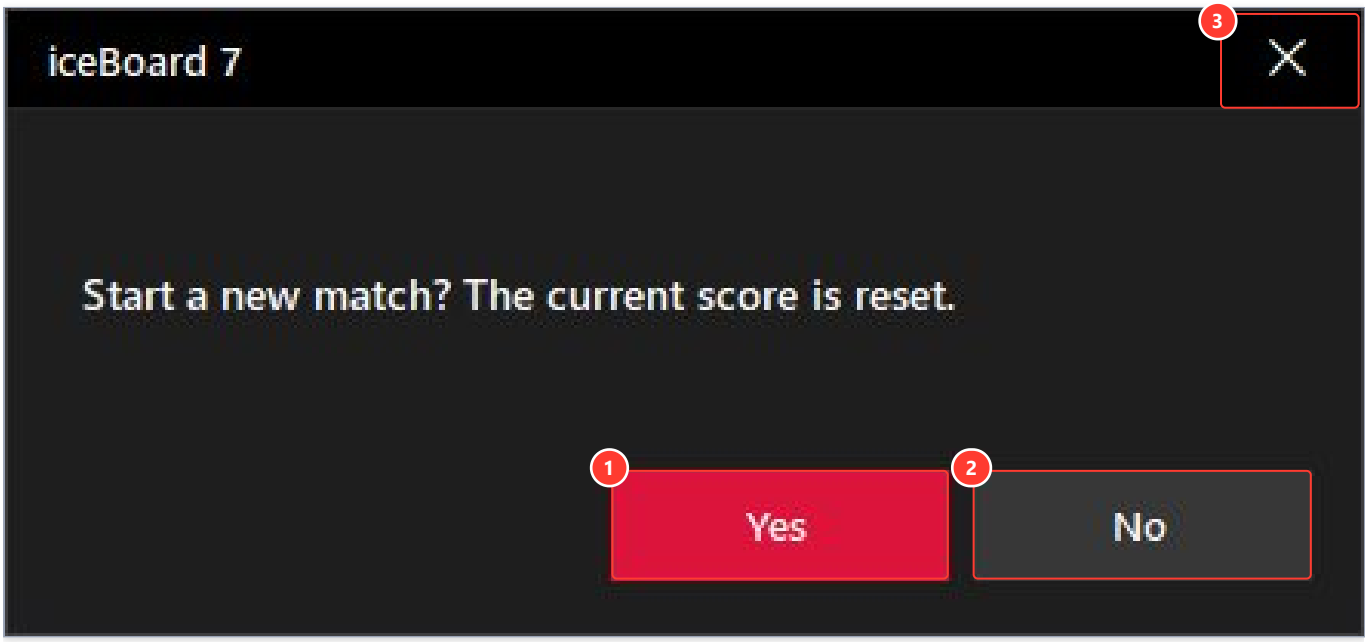


Figure 7. Confirmation of a new match

#	Control	What it does
1	Yes	Starts a new match of the same sport and discipline: scores, clocks, fouls, timeouts, penalties and player statistics are reset. Teams, colours, logos and team lists stay.
2	No	Keeps the running match.
3	Close (×)	The same as **No**. `Esc` also answers No.

> **Tip** The remote control has **New Match** in its *Match Control* section; it asks the same question on the phone.

Choosing the Sport and Discipline

Click the sport button in the middle of the bottom bar (it shows the sport and discipline, for example *Sport · Discipline* ▾). The picker shows every sport of iceBoard 7 as a tile and, below, the disciplines (rule sets) of the chosen sport.

The Sport Picker

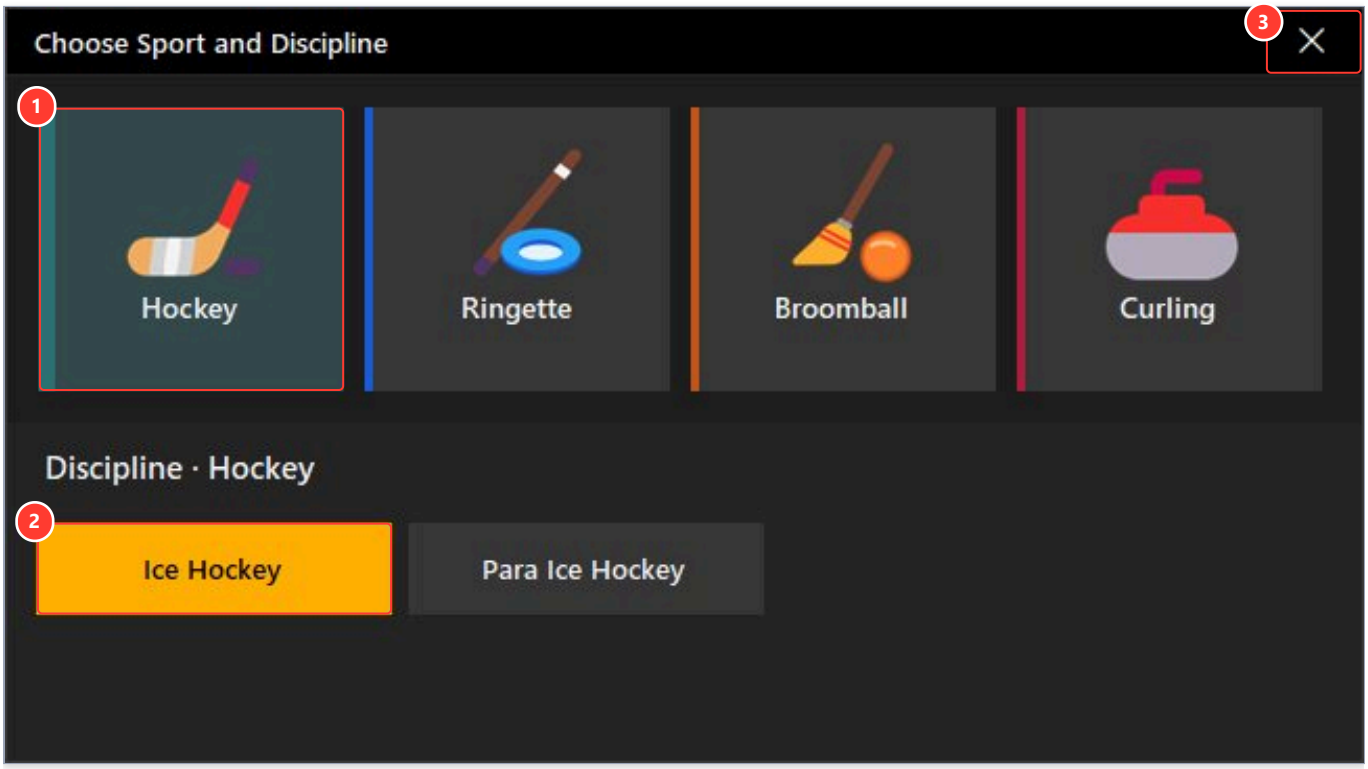


Figure 8. Choose Sport and Discipline

#	Control	What it does
1	**Sport tiles**	Every sport of iceBoard 7. Click a sport to show its disciplines below. The running sport is tinted in its colour. A sport with only one discipline is chosen with one click.
2	**Disciplines**	The rule sets of the chosen sport (e.g. league, junior or international rules with their own period lengths, timeouts and limits). Click a discipline to start it. The running discipline is amber; choosing it again changes nothing.
3	**Close (×)**	Closes the picker without a change (also `Esc`).

The disciplines of every sport of iceBoard 7:

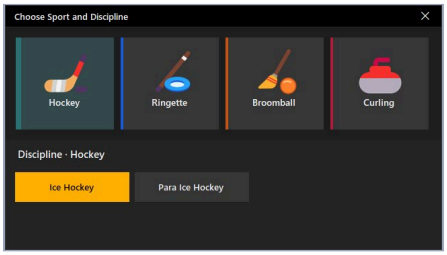


Figure 9. Hockey – its disciplines

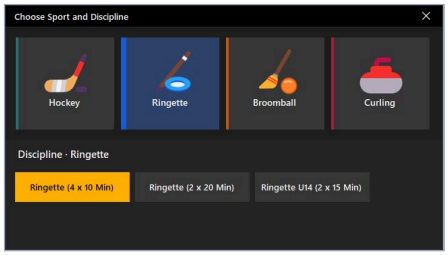


Figure 10. Ringette – its disciplines

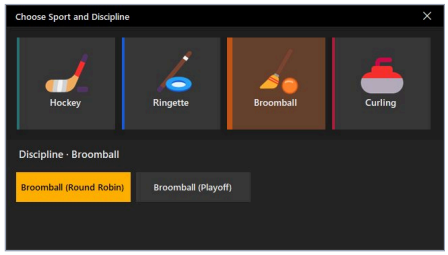


Figure 11. Broomball – its disciplines

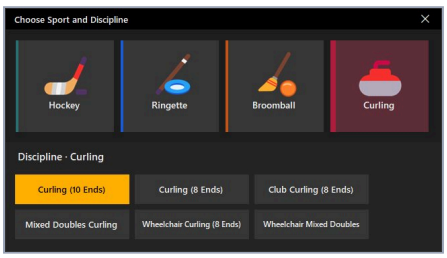


Figure 12. Curling – its disciplines

Switching during a Match

If a match is in progress (a score other than 0, the clock running or a set played), the program asks before it switches. The new sport starts with its own team setup, designs and keyboard shortcuts; the choice is remembered for the next start.

Switch Confirmation

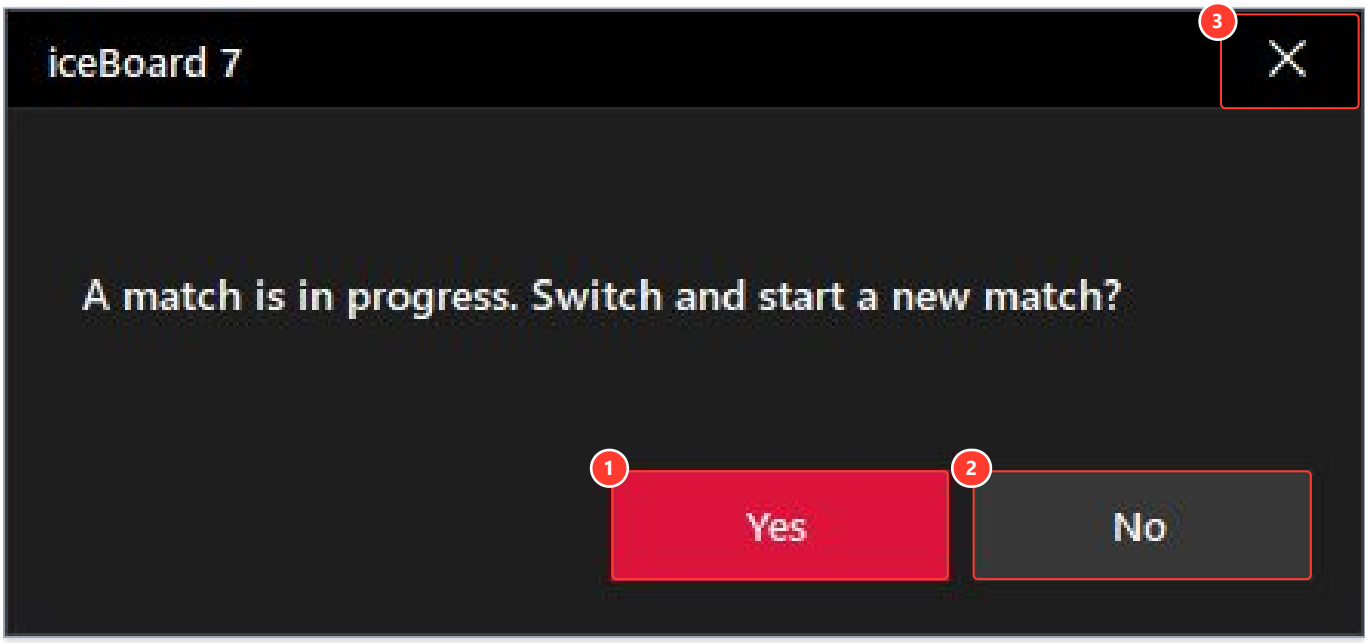


Figure 13. "A match is in progress. Switch and start a new match?"

#	Control	What it does
1	Yes	Ends the running match and starts the chosen sport / discipline with a new match.
2	No	Stays with the running match; nothing changes.
3	Close (×)	The same as **No**. `Esc` also answers No.

Time Settings

Click **Time Settings** (or the stopwatch icon at the bottom left) to change the times of the running discipline. The title bar names the sport and, when the preset has a name of its own, the discipline. The window grows with the number of rows, so the last row is always visible. The dialog only shows what the discipline has:

- **Periods** – the name of each period as the board shows it (Q1, 1H, P1 …) and its duration in m:ss.
- **Overtime** – the names of the overtime periods as the period buttons show them, separated by commas (e.g. *ET1, ET2*), and their duration. Where the preset has one overtime name such as *OT*, further overtime periods are numbered automatically (OT1, OT2 …).
- **Timeouts** – the length of a timeout.
- **Shot Clock** – full time and reset time in seconds (e.g. 24 / 14).
- **Team Fouls** – the foul limit (penalty situation / bonus).
- **Penalties** – the length of each timed penalty (e.g. 2 minutes).
- Set sports: **Sets to Win**, **Points per Set**, **Deciding Set Points**, timeout and technical timeout length.
- Cricket: **Match Format** – overs per innings, overs per bowler, days of a two-innings match, balls per over, players per side, reviews, powerplay overs and the timeout length, depending on the format.
- Swimming and diving have no time settings (the dialog says so); their rules belong to the meet and the event.

Times are typed as m:ss (plain seconds are accepted too). The Time Settings dialog of every sport, with its own rows, is shown in the chapter of that sport. The three buttons at the bottom are the same everywhere:

Button	What it does
Default Values	Fills in the factory values of the discipline after a confirmation (below). Nothing is saved until you click Save.
Cancel	Closes without saving. When you changed something, it asks *"Discard Changes?"* first.
Save	Checks and saves the values. An invalid value is reported in red at the bottom of the dialog and nothing is saved.

Confirmations of the Time Settings

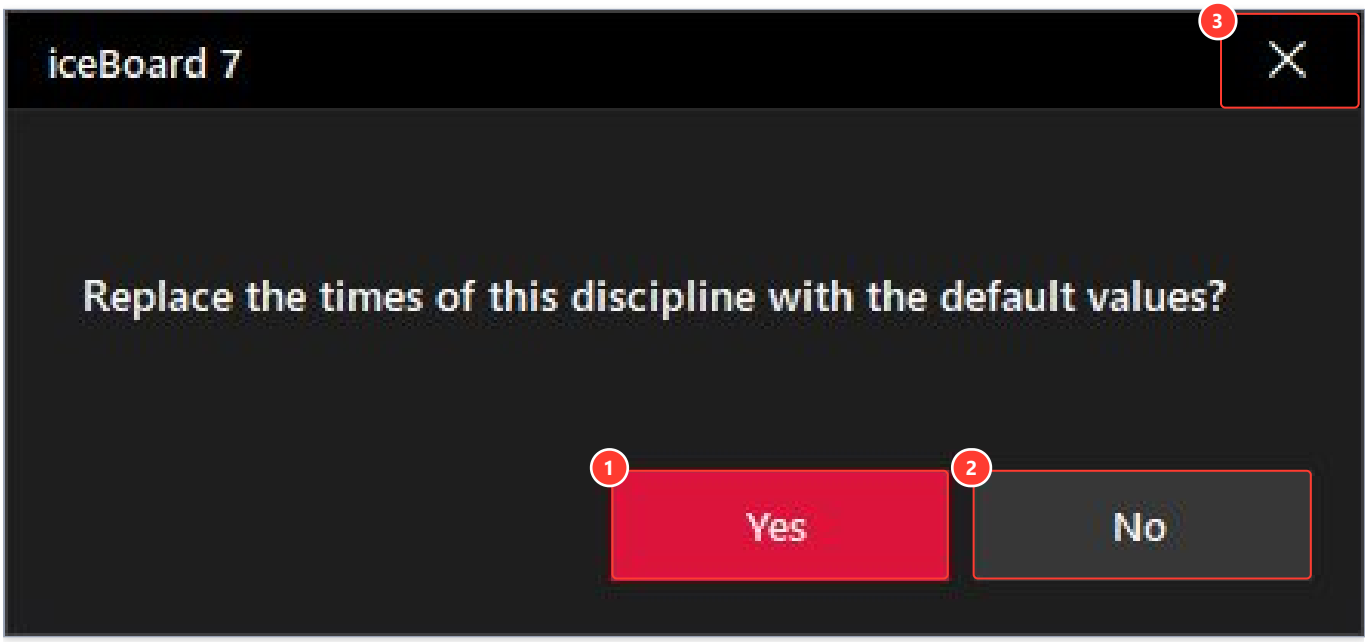


Figure 14. "Replace the times of this discipline with the default values?" (Default Values)

#	Control	What it does
1	Yes	Fills every row with the factory value of the discipline. Click **Save** afterwards to keep them.
2	No	Keeps the values in the dialog.
3	Close (×)	The same as **No**. `Esc` also answers No.



Figure 15. “Discard Changes?” (Cancel or × after a change)

#	Control	What it does
1	Yes	Closes the dialog and forgets the changes.
2	No	Returns to the dialog with your changes.
3	Close (×)	The same as **No**. `Esc` also answers No.

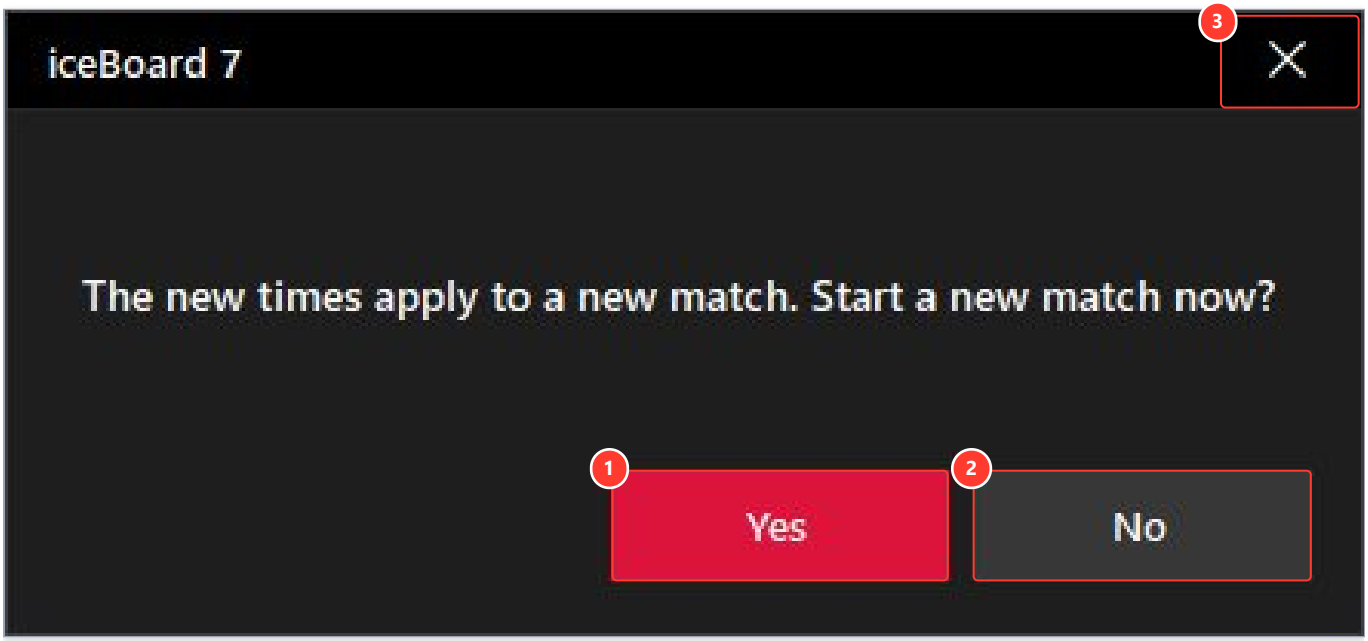


Figure 16. “The new times apply to a new match. Start a new match now?” (Save during a match)

#	Control	What it does
1	Yes	Starts a new match at once with the new times.
2	No	Keeps the running match with the old times; the new times are used from the next new match.
3	Close (×)	The same as **No**. `Esc` also answers No.

When the New Times Apply

Saved times are stored per discipline (only the values that differ from the factory values) and are used for every later match of that discipline. After **Save** a new match starts at once; if a match is in progress the program first asks whether to start one now (above).

> **Note** While a discipline uses own times, the Time Settings button shows an asterisk (**Time Settings ***) in amber. Use **Default Values** and **Save** to return to the official times.

Undo

Undo (the Undo button, `Ctrl`+`Z`, or `F12` in the default keyboard shortcuts) takes back the last scoring change: points, goals, fouls, timeouts, penalties, period changes and so on, up to 100 steps back. The running clocks keep their time. Undo also works from the remote control. Text changes and info graphics are not part of Undo.

There is one Undo button per sport: in the timed sports it is in the bottom bar; set sports, beach tennis, cricket and the swimming desk have it on their own panel and no Undo in the bottom bar. The dive desk has no Undo button: use **Correct** for a published dive, or `Ctrl`+`Z` / the remote Undo.

Restoring a Match after a Crash

If iceBoard 7 did not close normally (power cut, Windows update, crash), the next start finds the journal of the unfinished match and asks whether to restore it. The question names the sport and the time of the last entry.

Restore Question

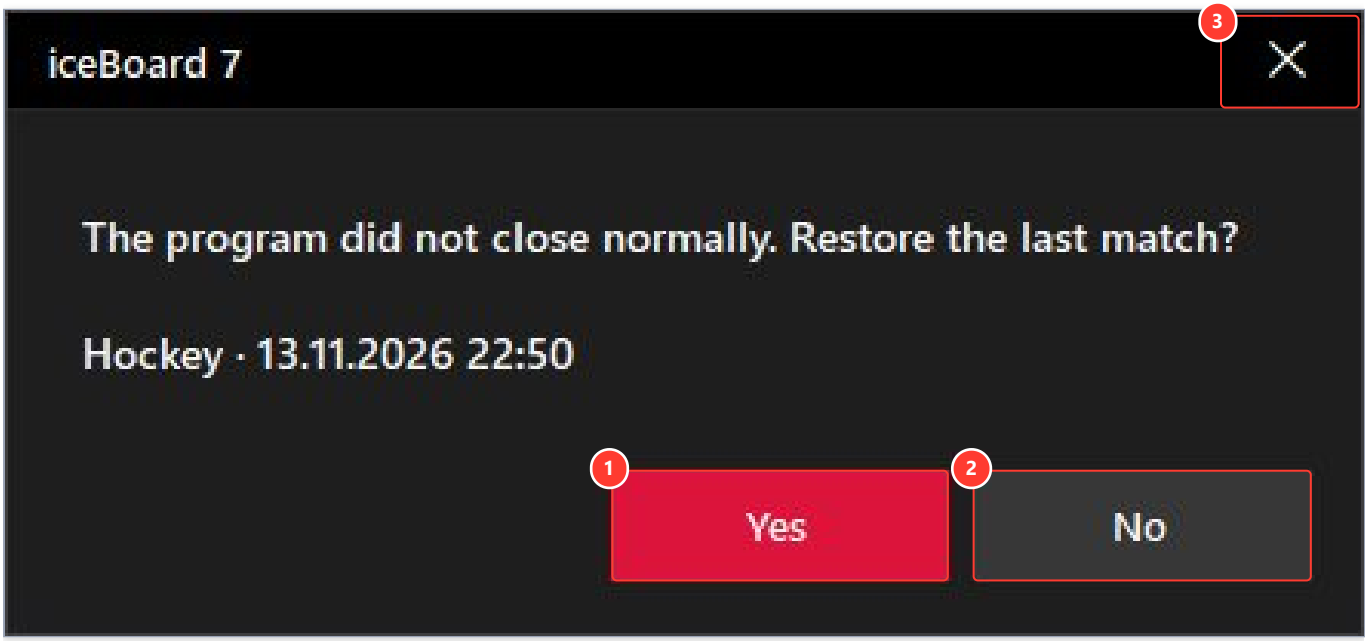


Figure 17. “The program did not close normally. Restore the last match?”

#	Control	What it does
1	Yes	Replays every command of the journal: scores, fouls, timeouts, penalties, periods and the team setup are back as they were. The clock is **stopped** and shows the time of the last recorded action.
2	No	Starts with a new match of the last sport. The journal file stays in *data\matches*.
3	Close (×)	The same as **No**. `Esc` also answers No.

1. Answer **Yes**.
2. Compare the clock with the official time and correct it with **Set Clock** if needed (the time that ran between the last action and the crash is not in the journal).
3. Check that the boards are open (St / Sp / Ad / CK – every output that was on opens again by itself at its place) and start the clock.

5 The Info Page

The Info page puts event graphics on air: announcements, goals, cards and time penalties, player intros, substitutions, team lists and officials. Each row has its team, its player fields and a **Show** button. Which rows you see depends on the sport and the design: basketball has no goal or card row, handball has its 2-minute penalties, set sports show sanctions (warning, penalty, expulsion, disqualification), sports that count red cards have a Red Card row, and swimming, diving and cricket keep only the announcement, the scrolling text and the info screens.

The Rows of the Info Page

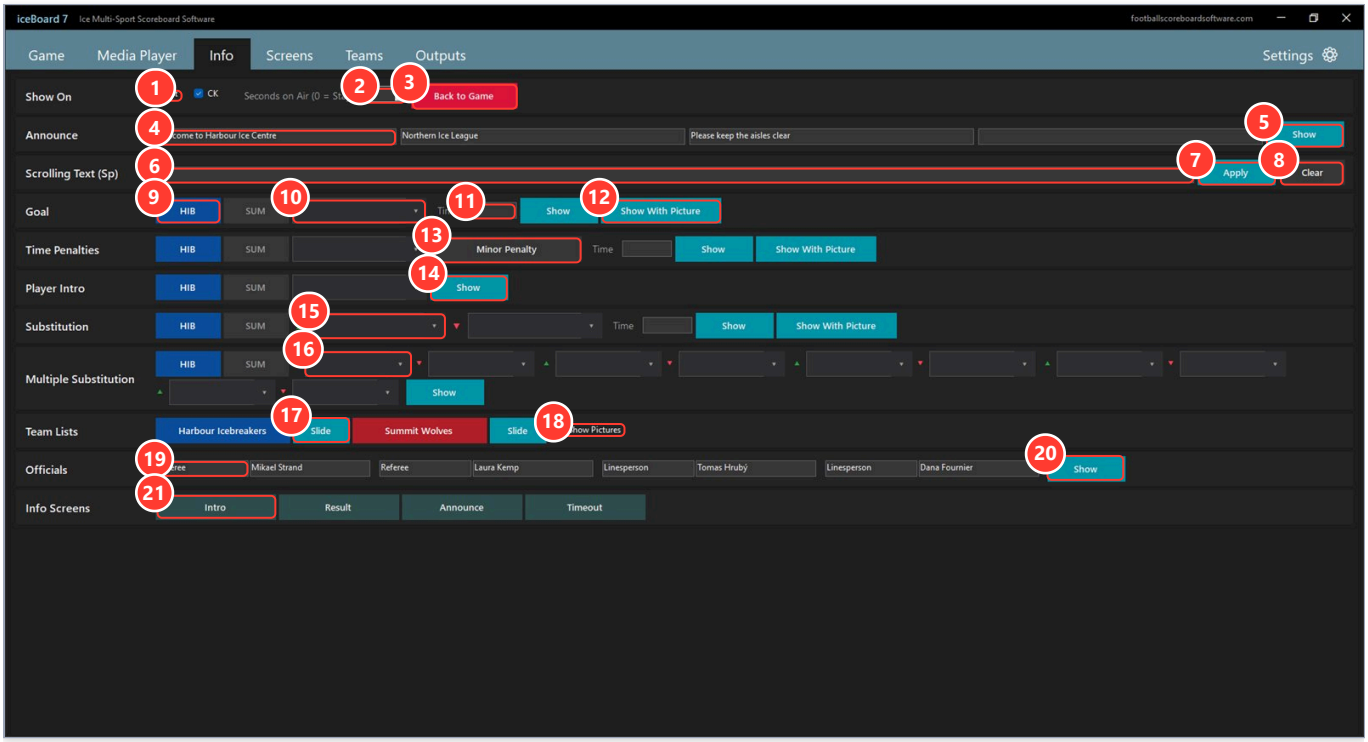


Figure 18. The Info page

#	Control	What it does
1	**Show On: St / CK**	Where the graphics of this page go: the Standard board (full-screen info screen) and / or the Chroma Key output (broadcast graphic). CK is ticked when the CK output was open when the page was built.
2	**Seconds on Air (0 = Stay)**	How long a graphic stays on air before the outputs return to the game screen (0–120 s, default 10). **0** = the graphic stays until you click Back to Game.
3	**Back to Game**	Takes the graphic off at once and returns St and CK to the game screen (it also stops a running team slide). An output that you switched to another screen in the meantime is left alone.
4	**Announce: Title, Line 1, Line 2, Line 3**	Free announcement texts (welcome, next match, safety notes …): a title and up to three lines. The same four texts are on the Screens page.
5	**Announce: Show**	Saves the texts and shows the **Announce** screen on St and the **Lower Third** on CK (the title and the first two lines).
6	**Scrolling Text (Sp)**	The text that scrolls on the Sponsored board – in its own band above the sponsor strip or inside the strip (see *Sp / Ad Media*).

#	Control	What it does
7	**Apply**	Puts the scrolling text on the Sp board.
8	**Clear**	Empties the text and removes the scrolling text from the Sp board (the sponsor strip shows its own content again).
9	**Team buttons**	Every player row starts with the two teams (short names). The chosen team is shown in its team colour; changing the team empties the player fields of the row.
10	**Player field**	Type a number and / or a name (e.g. *17 John Smith*) or click ▾ to pick from the team list (menu below). A typed player that is not in the team list is added to it (number and name).
11	**Time**	The box after the **Time** label: minute or game time printed on the graphic. Empty = the game clock at the moment you click Show. The box empties after each Show.
12	**Show / Show With Picture**	**Show** puts the graphic on air with number and name; **Show With Picture** adds the player photos chosen in the **Photo** column of the Teams page (a player without a photo is shown without one).
13	**Card / penalty type**	Chooses the card or time penalty of the sport (yellow card, 2 minutes, warning …). The title of the graphic is the chosen type (menus below).
14	**Player Intro: Show**	Shows one player (number, name, photo when there is one) on St and as the player graphic on CK.
15	**Substitution: In ▲ / Out ▼**	The player coming in (green ▲) and the player going out (red ▼). Show / Show With Picture put both on one graphic.
16	**Multiple Substitution**	Up to five in ▲ / out ▼ pairs of one team. Each pair (green ▲ in, red ▼ out) stays together as one block; when the row is too narrow, a whole pair moves to the next line. Pairs with an empty field are left out. **Show** puts all pairs on one graphic (St *Substitutions*, CK *Substitutions*).
17	**Team Lists: team / Slide**	The team button (team name in its colour) shows the whole team list of that team. **Slide** shows the players marked Show one after the other as player intros (every half of Seconds on Air, at least 3 s), then returns to the game screen.
18	**Show Pictures**	Team lists with the player photos (from the **Photo** column of the Teams page).
19	**Officials**	Four pairs of role and name (referee, umpire, table official, commissioner …). Rows with an empty name are left out.
20	**Officials: Show**	Saves the officials with the team setup and shows the officials graphic on St and CK.
21	**Info Screens**	The other info screens of the design: **Intro** (event and teams), **Result**, **Announce**, **Timeout** where the sport has one (cricket adds **Batting** and **Bowling**). They follow Show On and Seconds on Air like the rows above.

1. Tick where the graphic goes (**St**, **CK** or both) and set **Seconds on Air**.
2. Choose the team in the row.
3. Type the player (number, name or both) or pick from the list with ▾; for a card choose the type, for a goal the score type if there is a list.
4. Optionally type the minute into the **Time** box; leave it empty to use the game clock.
5. Click **Show** (or **Show With Picture**). After the seconds on air the outputs return to the game screen by itself; **Back to Game** ends it earlier.

> **Tip** You can work without team lists: a number alone is enough for the graphic. A number with a name is added to the team list of the Teams page, so it is there for the next graphic and the next match.

> **Note** A row appears only when the St or CK design has a screen for it, and a graphic is only put on an output whose design has that screen. Apart from the Red Card row, the Info page does not change the score: goals, fouls and cards for the board are entered on the Game page.

The Player List (▾)

Click ▾ in a player field: the list shows the players of the chosen team that are marked **Show** on the Teams page, with number and name.

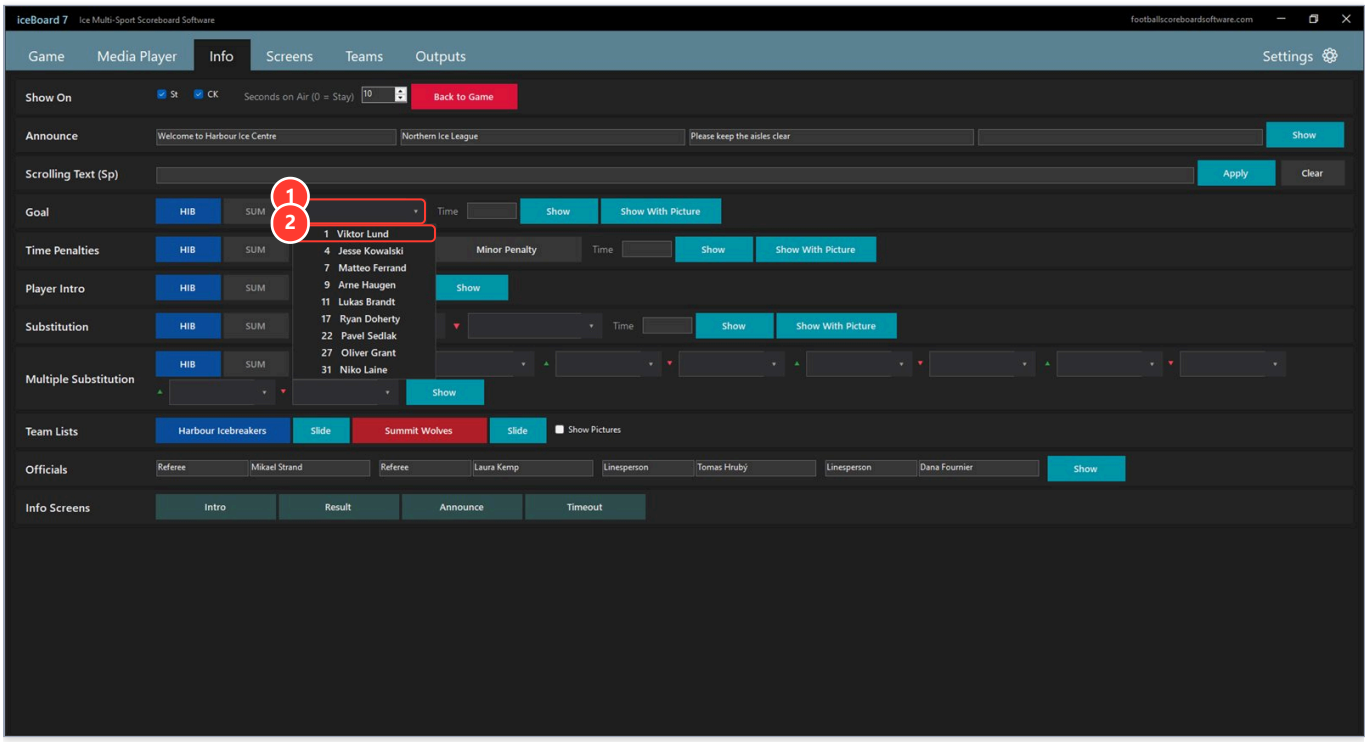


Figure 19. The player list of a player field (Hockey)

#	Control	What it does
1	**Player field**	The field whose list is open. You can also type here instead of picking.
2	**Players (number, name)**	Click a player to put number and name into the field. The list has one entry per player marked Show; it scrolls when the team is long.

Score Type, Card and Sanction Lists

The type list of a row decides the title of the graphic. Every sport has its own entries:

Hockey

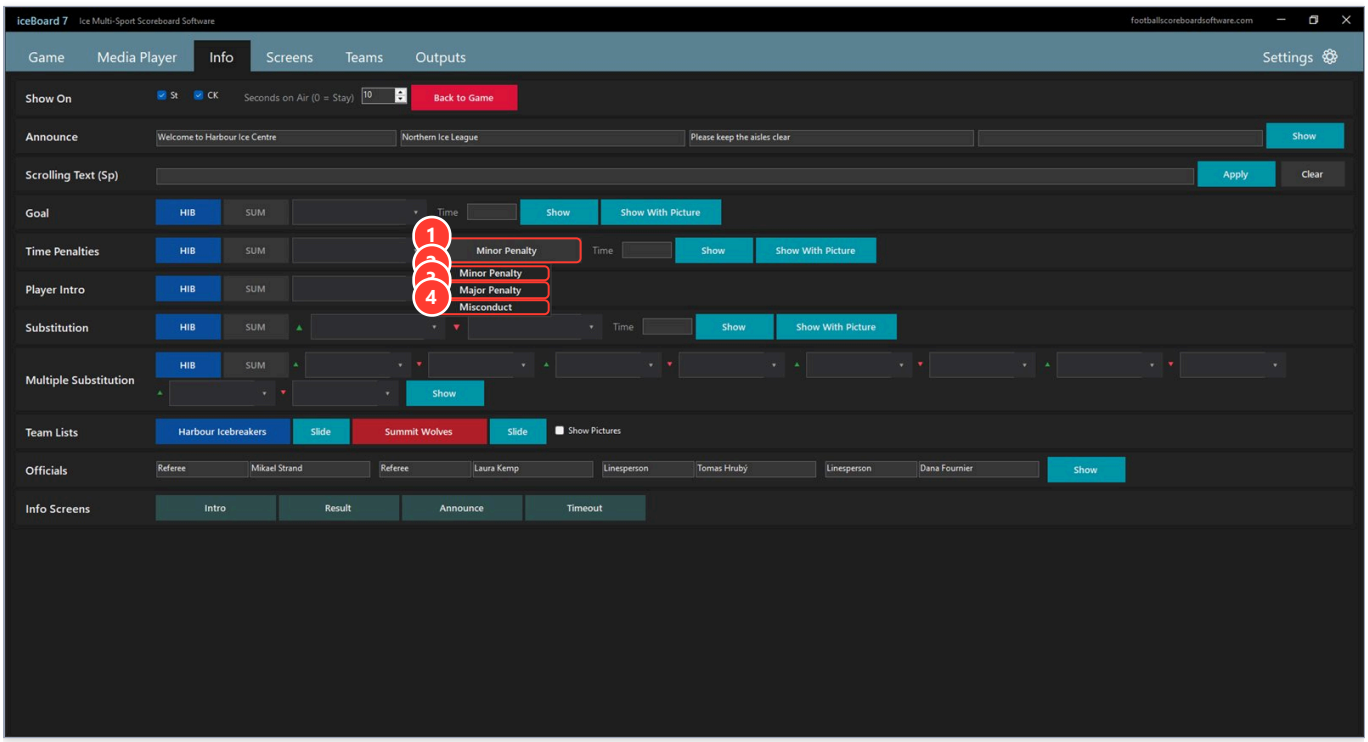


Figure 20. Hockey: the cards / time penalties of the row

#	Control	What it does
1	**Type list**	Click to open the list; the chosen entry is the title of the graphic. The penalty itself (its clock, the count on the board) is entered on the Game page.
2	**Minor Penalty**	The graphic titled “Minor Penalty”.
3	**Major Penalty**	The graphic titled “Major Penalty”.
4	**Misconduct**	The graphic titled “Misconduct”.

Ringette

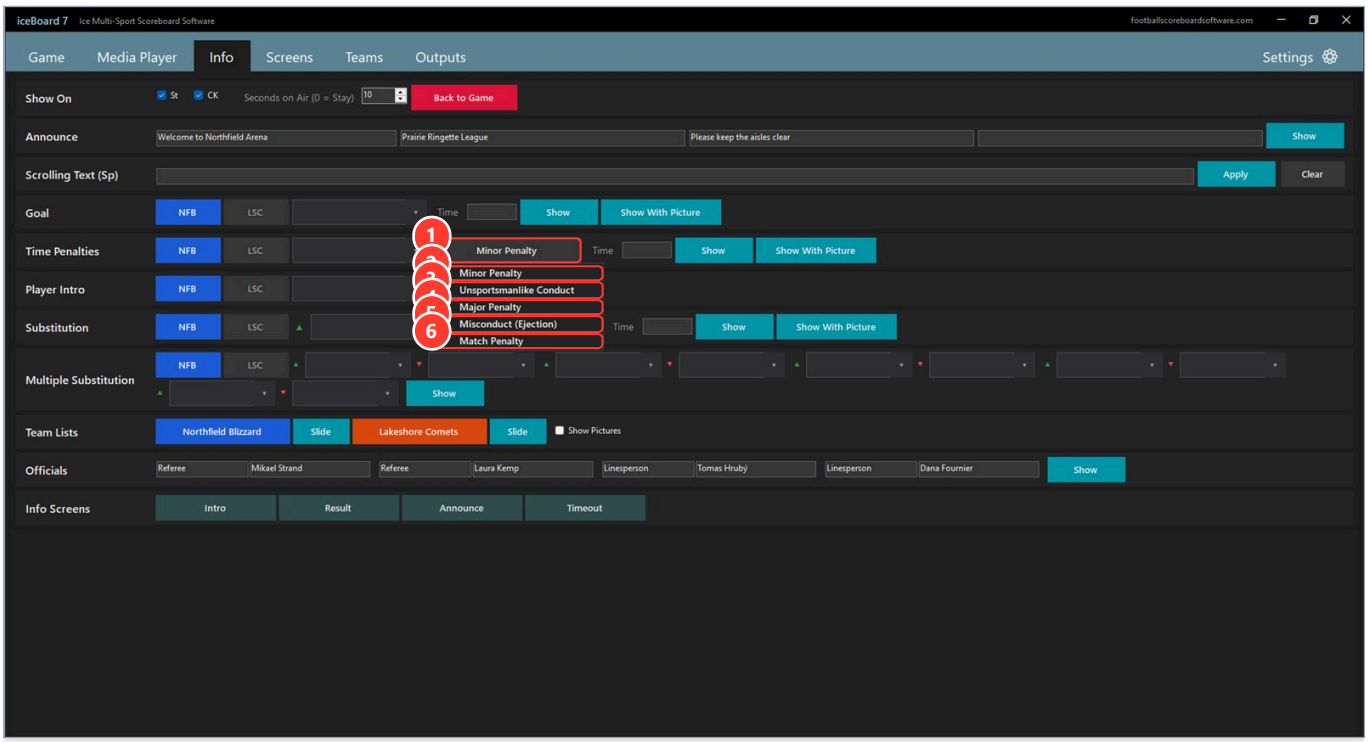


Figure 21. Ringette: the cards / time penalties of the row

#	Control	What it does
1	**Type list**	Click to open the list; the chosen entry is the title of the graphic. The penalty itself (its clock, the count on the board) is entered on the Game page.
2	**Minor Penalty**	The graphic titled “Minor Penalty”.
3	**Unsportsmanlike Conduct**	The graphic titled “Unsportsmanlike Conduct”.
4	**Major Penalty**	The graphic titled “Major Penalty”.
5	**Misconduct (Ejection)**	The graphic titled “Misconduct (Ejection)”.
6	**Match Penalty**	A match penalty (the player is out for the rest of the match).

Broomball

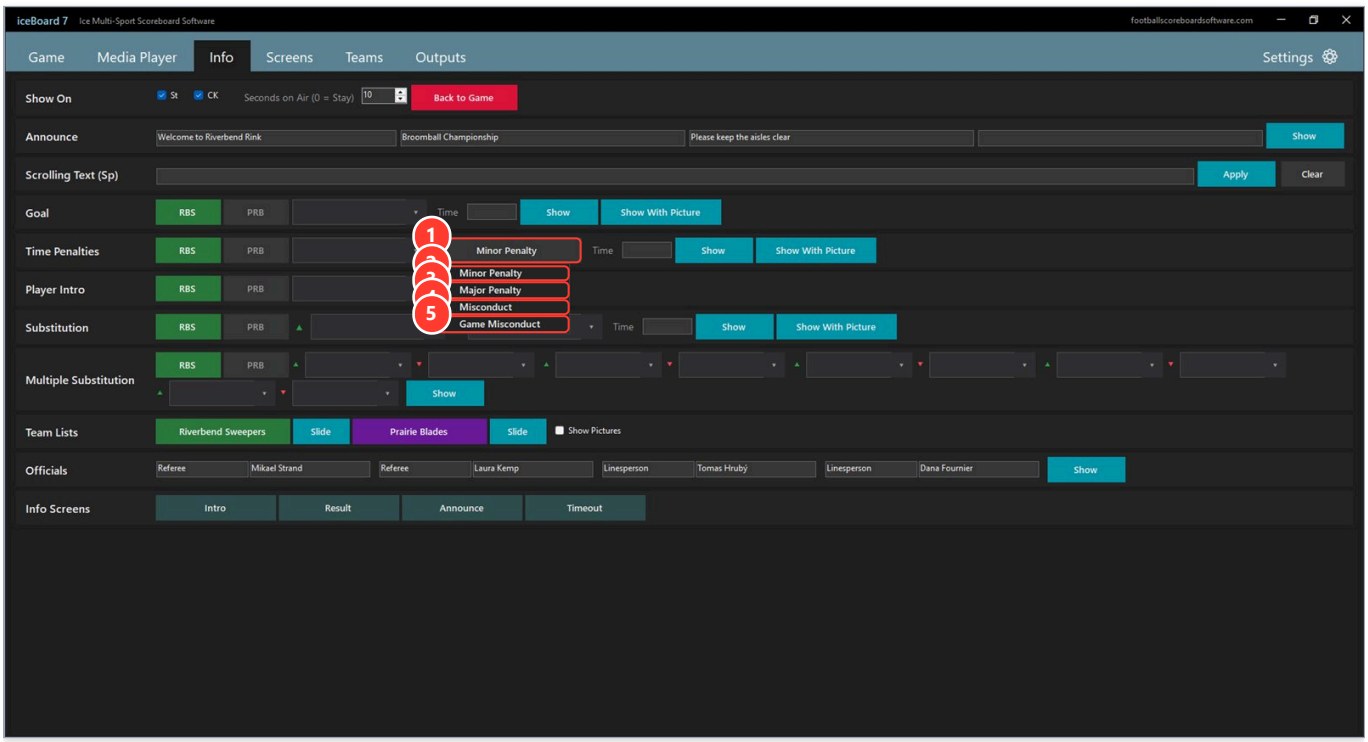


Figure 22. Broomball: the cards / time penalties of the row

#	Control	What it does
1	**Type list**	Click to open the list; the chosen entry is the title of the graphic. The penalty itself (its clock, the count on the board) is entered on the Game page.
2	**Minor Penalty**	The graphic titled “Minor Penalty”.
3	**Major Penalty**	The graphic titled “Major Penalty”.
4	**Misconduct**	The graphic titled “Misconduct”.
5	**Game Misconduct**	The graphic titled “Game Misconduct”.

The Info Page of Each Sport

The rows follow the sport. The pages of all sports of iceBoard 7:

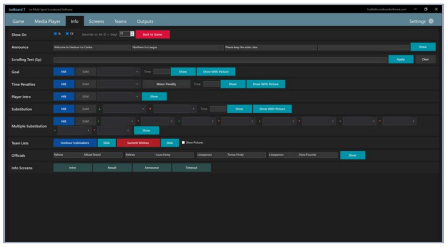


Figure 23. Hockey: Goal row, penalty / card row (Minor Penalty ...), Timeout screen

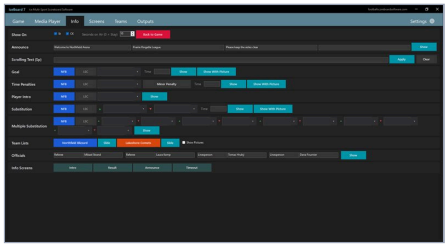


Figure 24. Ringette: Goal row, penalty / card row (Minor Penalty ...), Timeout screen

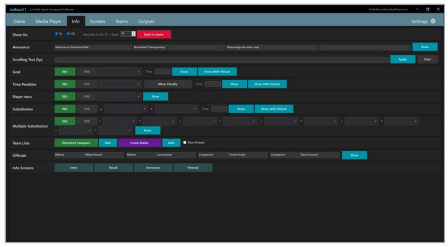


Figure 25. Broomball: Goal row, penalty / card row (Minor Penalty ...), Timeout screen

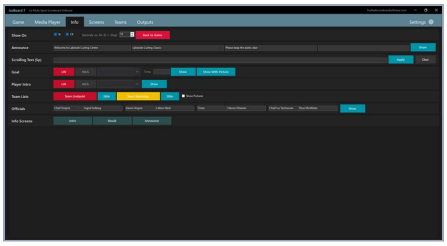


Figure 26. Curling: Goal row

Info Screens on the Standard Board

The full-screen graphics of the St output (Arena master design, with the background video). Each comes from the row of the same name or from the Info Screens row:



Figure 27. Intro – event name, both teams with logos, date and time

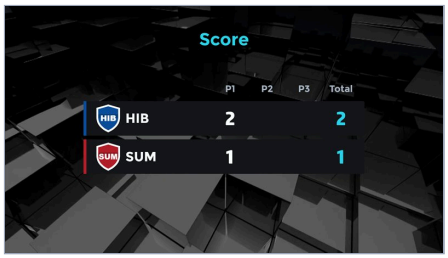


Figure 28. Result

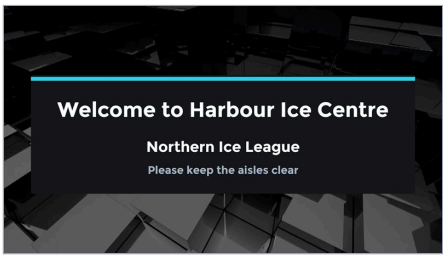


Figure 29. Announce – title and announcement lines

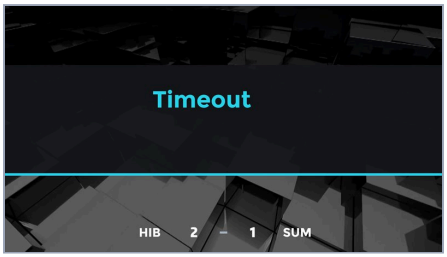


Figure 30. Timeout



Figure 31. Goal – scorer with number, name, photo, team and score



Figure 32. Card / penalty – player, team, type and game time

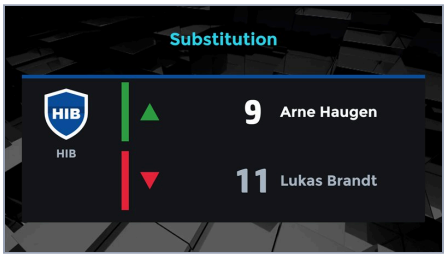


Figure 33. Substitution – player in (▲) and out (▼)

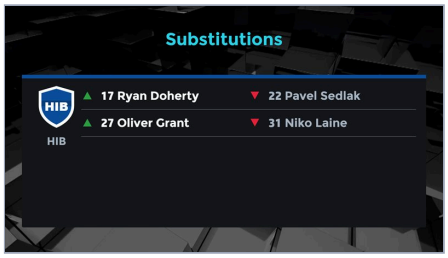


Figure 34. Multiple Substitution – several pairs of one team



Figure 35. Player Intro

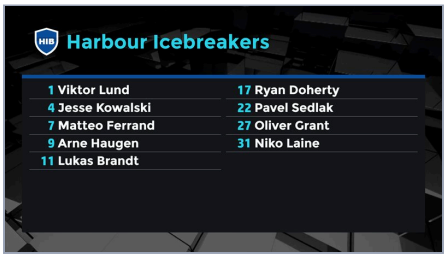


Figure 36. Team List



Figure 37. Officials

Broadcast Graphics on the CK Output

The same events on the Chroma Key output (Broadcast master design). The green is keyed out by the vision mixer, or sent as transparency over NDI:

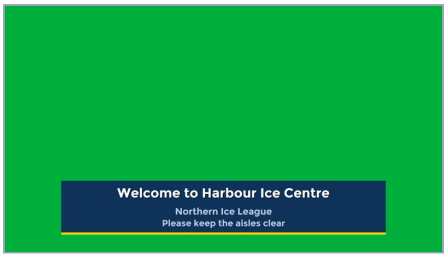


Figure 38. CK Lower Third – the announcement title and two lines

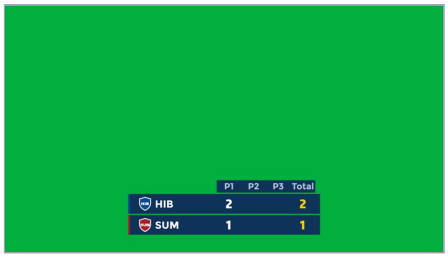


Figure 39. CK Result



Figure 40. CK Player – goal, card or player intro



Figure 41. CK Substitution



Figure 42. CK Multiple Substitution



Figure 43. CK Team List



Figure 44. CK Officials

6 The Screens Page

The Screens page has three columns: the screens of the St output, the screens of the CK output and the announcement texts. One click on a screen button puts that screen on air at once (without the Seconds on Air timer of the Info page). The screen on air is green.

Which screens appear depends on the design of the output and on the sport: the masters have the screens shown here; an own design may have more or fewer. A Goal or Card screen is never offered in a sport that has no goals or no cards / penalties, even when an older own design still contains it. The Sp and Ad outputs always show their game screen.

> **Tip** The on-air row of the Game page has the same St and CK screens except the event screens, so you rarely need to leave the Game page during play.

Screen Buttons

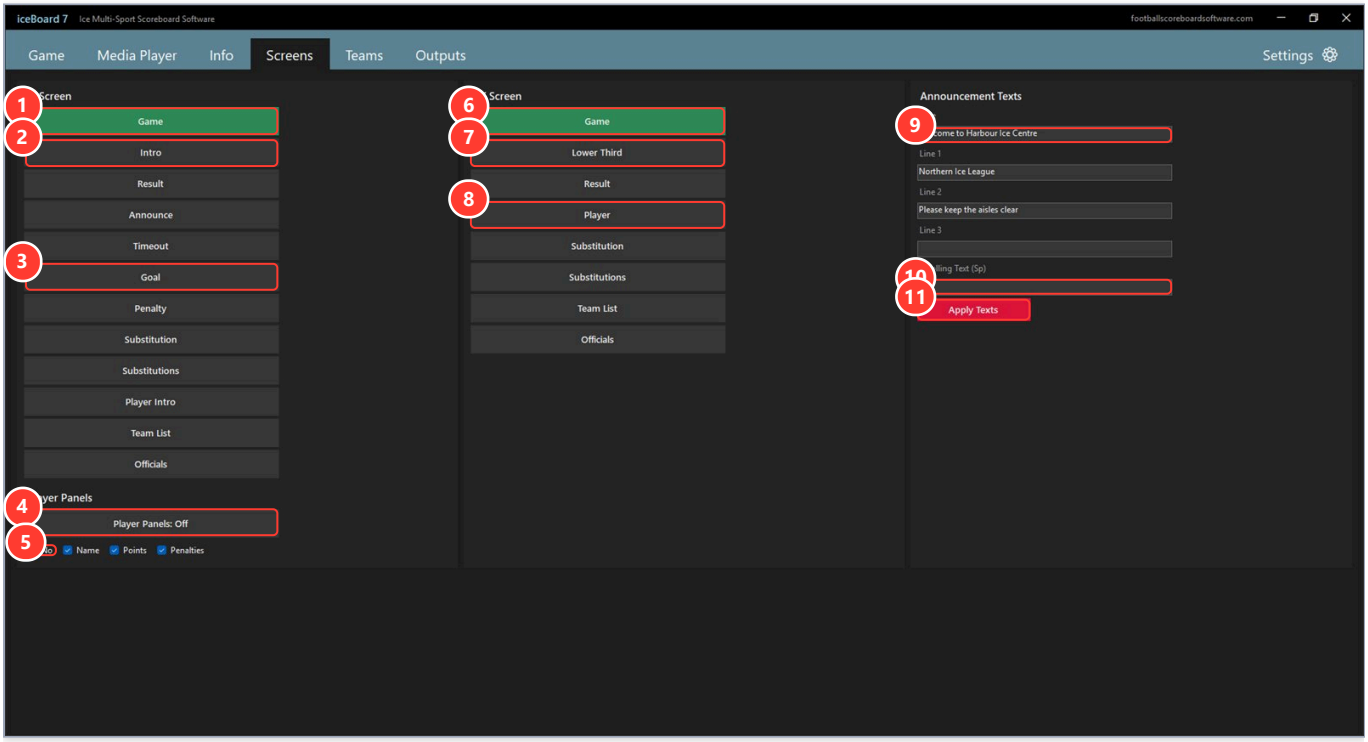


Figure 45. The Screens page

#	Control	What it does
1	St Screen: Game	The scoreboard of the Standard output. Click to return from any info screen.
2	St info screens	**Intro**, **Result**, **Announce** and, where the sport has one, **Timeout** (cricket: **Batting**, **Bowling**): shown with the data of the running match.
3	St event screens	**Goal**, **Card**, **Substitution**, **Substitutions**, **Player Intro**, **Team List**, **Officials**: they show the player or team last chosen on the Info page. Use the Info page to fill them. **Goal** is offered only in sports that score goals (for example not in basketball) and **Card** only in sports with cards, time penalties or sanctions (for example not in basketball, Aussie Rules or American football).
4	Player Panels: On / Off	Switches the St game screen between the plain scoreboard and the scoreboard with player panels (the same as the Player Panels button on the Game page). Green while On.

#	Control	What it does
5	**Player panel columns**	Which columns the player panels show: **No**, **Name** and the statistics of the sport (**Fouls**, **Points**, **Penalties**, **Cards**). Saved per sport.
6	**CK Screen: Game**	The score bug of the Chroma Key output.
7	**CK Lower Third / Result**	The announcement as a lower third, and the result graphic.
8	**CK event graphics**	**Player**, **Substitution**, **Substitutions**, **Team List**, **Officials**: the last content sent from the Info page.
9	**Announcement Texts**	**Title** and **Line 1** – **Line 3** of the announcement screens: St Announce shows the title and all three lines, the CK Lower Third the title and the first two lines. The same texts as in the Announce row of the Info page.
10	**Scrolling Text (Sp)**	The text that scrolls on the Sponsored board (the same as on the Info page). Empty = no scrolling text.
11	**Apply Texts**	Puts the title, the three lines and the scrolling text on the boards.

The Screens Page of Each Sport

The screen lists of the master designs of every sport (player panel options only where the sport keeps player statistics):

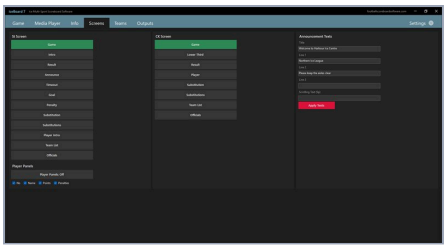


Figure 46. Hockey

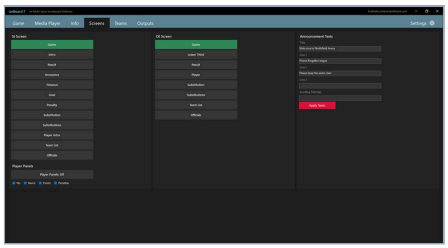


Figure 47. Ringette

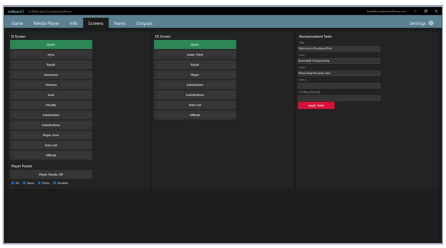


Figure 48. Broomball

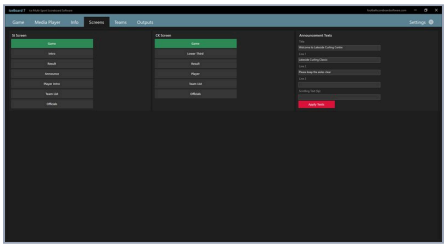


Figure 49. Curling

7 Teams and Players

The Teams page holds the event, the two teams and their team lists. The setup is saved per sport (*data\config\<sport>\setup.json*) and stays when you start a new match; switching to another sport loads that sport's own setup.

Event and Teams

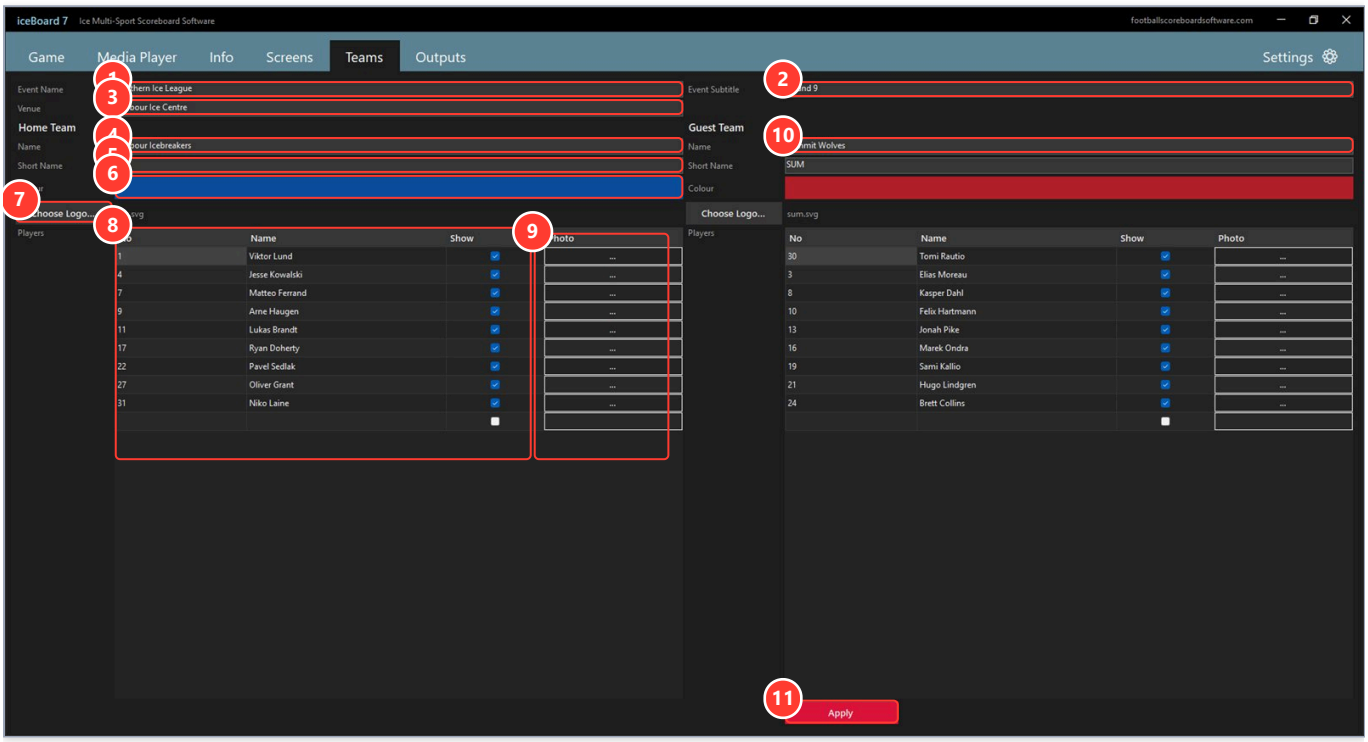


Figure 50. The Teams page

#	Control	What it does
1	**Event Name**	The competition or event (league, cup, tournament). Shown on the Intro screen and the CK graphics.
2	**Event Subtitle**	A second line for the event (round, group, final …).
3	**Venue**	The hall, ground or pool.
4	**Name (Home Team)**	The full team name for the boards.
5	**Short Name**	Short name or abbreviation (3–4 letters) for compact boards, the Ad board, the CK score bug and the team buttons of the Info page.
6	**Colour**	Click to choose the team colour. It is used for the team stripes, the team buttons and the graphics.
7	**Choose Logo…**	Choose a logo file (PNG, JPG, WEBP or SVG). The file is copied into *data\logos*; the file name is shown next to the button.
8	**Players**	The team list: **No** (up to 4 characters, e.g. 7, 07, 23A), **Name**, **Show** and **Photo** (next callout). Type into the empty last row to add a player. To remove a player, empty both the number and the name of the row (empty rows are dropped when you click Apply). Players with Show ticked appear as number buttons on the Game page, in the player panels, the player lists of the Info page, the team list graphics and the team slide.

#	Control	What it does
9	**Photo**	The player photo. A row without a photo shows **…**; **click** the cell to choose a picture (PNG, JPG, JPEG or WEBP). The file is copied into *data\media\players* and its name appears in the cell. **Right-click** the cell to remove the photo from the player (the copied file stays in the folder). Type the number and name of a new player first: the empty last row takes no photo. Like every change on this page, the photo is saved with **Apply**.
10	**Guest Team**	Name, Short Name, Colour, logo and Players of the guest team – the same fields as for the home team.
11	**Apply**	Saves everything on this page and updates the boards. **Changes are not saved until you click Apply.**

1. Type the event, venue and both teams.
2. Choose colours and logos.
3. Fill the team lists (or paste them row by row) and tick **Show** for the players of today.
4. Optionally click the **Photo** cell of a player to give the player a picture.
5. Click **Apply**.

Teams in the Different Kinds of Sport

Kind of sport	What “team” means on this page
Team sports with a clock (basketball, handball, football, hockey, water polo, beach soccer, Australian rules …)	Two teams with full team lists; numbers are used for fouls, penalties, cards and player panels on the Game page.
Set sports (volleyball, beach volleyball, footvolley, snow volleyball) and beach tennis	Two teams or pairs. For beach sports the name is usually the pair (e.g. *Surname / Surname*) and the team list holds the two or three players; sanctions on the Info page pick from it.
Cricket	Two teams with their players; the team list is used for the batter and bowler choices of the cricket panel and the batting and bowling cards.
Swimming and diving	No teams: the page holds the meet / event name, subtitle and venue and saves the competition (below). Swimmers, divers, heats and dive lists belong to the competition of the desk.

The Teams Page of Each Sport

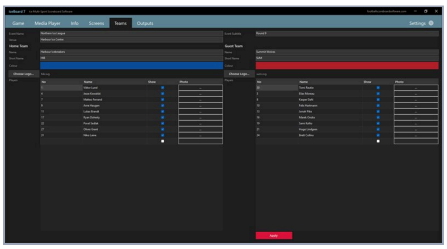


Figure 51. Hockey

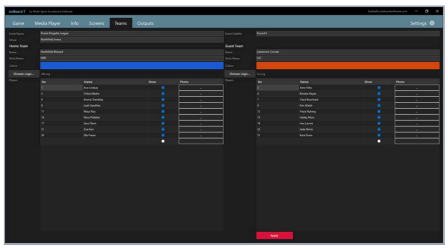


Figure 52. Ringette

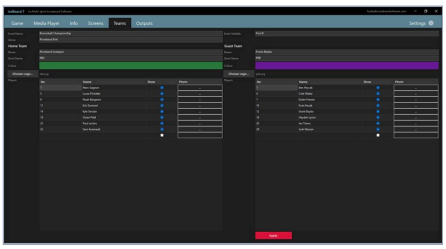


Figure 53. Broomball

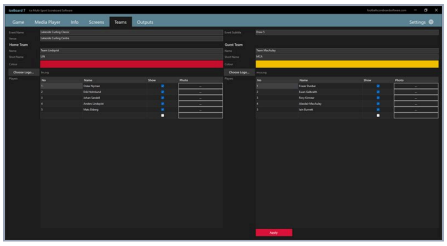


Figure 54. Curling

Player Photos and Numbers

Numbers may contain up to four characters (e.g. 7, 07, 23A). A player typed on the Info page that is not in the list is added to it automatically.

Player photos are set in the **Photo** column of the team list:

1. Make sure the player has a number and a name in the list.
2. Click the player's **Photo** cell (it shows **...** while there is no photo).
3. Choose a picture file (PNG, JPG, JPEG or WEBP) in the file dialog. iceBoard 7 copies it into *data\media\players* under a new name made of the sport, the team, the number and a time stamp, so the original file can be moved or deleted afterwards. The cell shows the file name.
4. Click **Apply** to save the team list with the photo.

To take a photo away, **right-click** the Photo cell: it shows **...** again (click Apply to save).

The photos are used by **Show With Picture** in the Goal, Card and Substitution rows of the Info page, by the team lists when **Show Pictures** is ticked, and by the player intro. A player without a photo is shown with number and name only.

> **Tip** Untick **Show** for players who are not playing today instead of deleting them: they disappear from the number buttons, panels, player lists and team lists but stay in the list for the next match.

8 Outputs

The Outputs page sets up the four board windows. Each output has one row with its settings and a second row with the window position. Every change is saved at once and applied to the open window; at the next start the program opens the board windows again exactly as they were. How to bring the board onto an LED screen, a video processor or a sender card is explained step by step in the next chapter, *Sending the Board to the LED Screen*.

The Output Rows

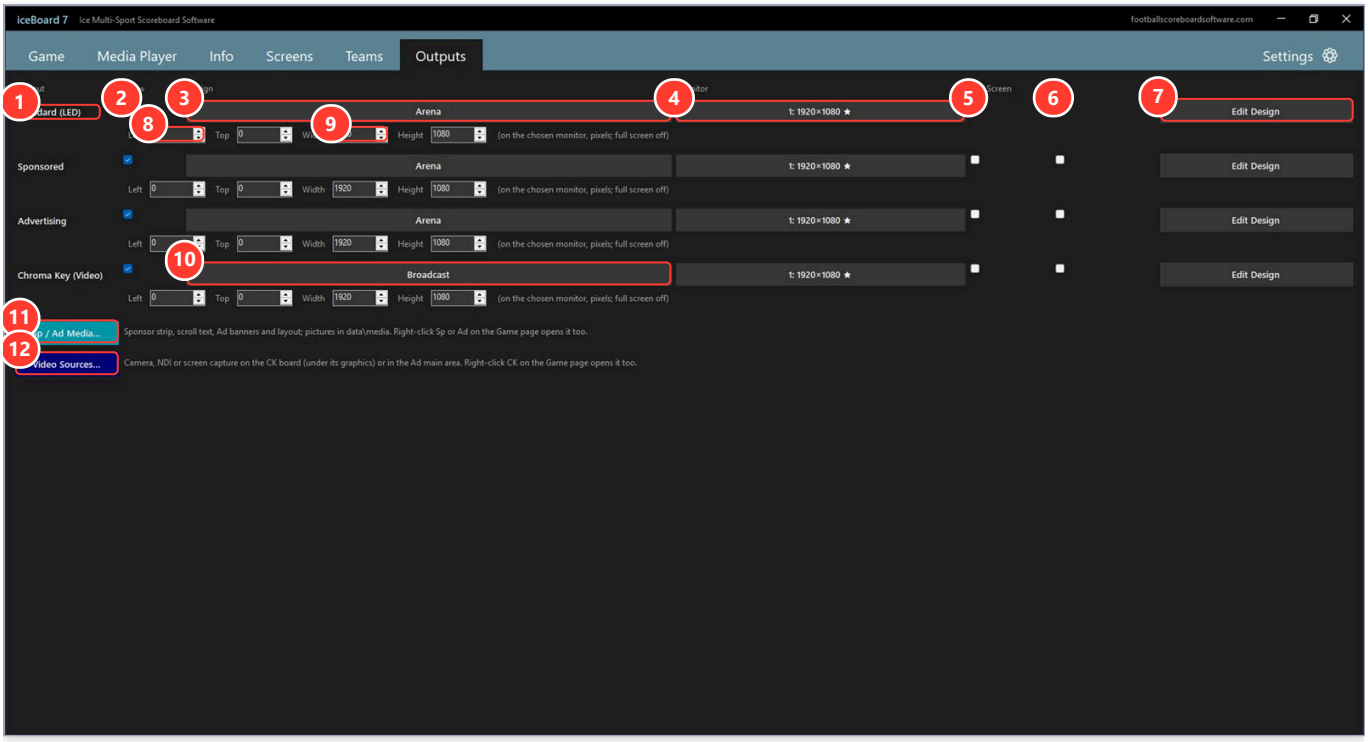


Figure 55. The Outputs page

#	Control	What it does
1	Output	**Standard (LED)** = St, **Sponsored** = Sp, **Advertising** = Ad, **Chroma Key (Video)** = CK.
2	Show	Opens or closes the output window – the same as the St / Sp / Ad / CK buttons on the Game page. An output that is on opens again by itself at the next start of the program.
3	Design	The design of this output for the running sport (menu below). Own designs are marked with ★. Each sport remembers its own choice.
4	Monitor	The monitor of the window: number, resolution, ★ = the main monitor (menu in the next chapter). With two or more monitors a new output opens on monitor 2.
5	Full Screen	Ticked: the board fills the chosen monitor. Not ticked: the window uses Left / Top / Width / Height.
6	NDI	Sends this output as an NDI source (30 frames per second). The status (fps or an error) appears next to the box. The output window must be open (Show).
7	Edit Design	Opens the design editor with the design and the current screen of this output.
8	Left / Top	Position of the window on the chosen monitor in pixels (0 / 0 = top left corner of that monitor). Only when Full Screen is off. See *Sending the Board to the LED Screen*.

#	Control	What it does
9	**Width / Height**	Window size in pixels (at least 160 × 90), for LED walls and strips with an unusual resolution (e.g. 1920 × 480 or 1280 × 1024). The board scales to the window.
10	**CK design**	The CK output uses the Broadcast master by default, the other outputs the Arena master.
11	**Sp / Ad Media...**	Opens the Sp / Ad Media dialog: sponsor strip, scroll text, Ad layout, banners and the advertising area (see the chapter *Sp / Ad Media*).
12	**Video Sources...**	Opens the Video Sources window: a camera, an NDI source or a screen capture on the CK board or in the Ad main area (see the chapter *Video Sources*).

Choosing a Design

Click the design field of a row to open the list of designs of the running sport:

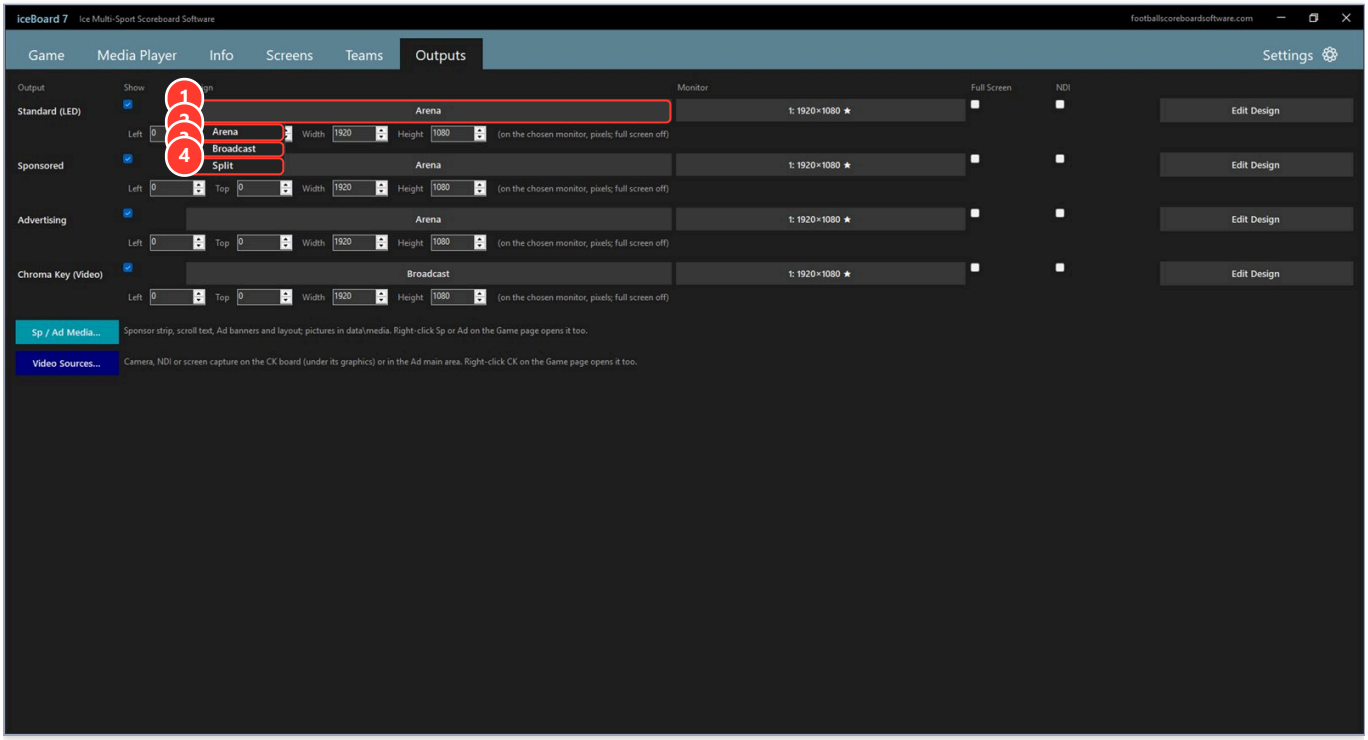


Figure 56. The design list of the Standard (LED) output

#	Control	What it does
1	**Design field**	Shows the design in use; click to open the list.
2	**Arena**	Master design: black LED look with big digits and corner logos. The default of St, Sp and Ad.
3	**Broadcast**	Master design: header strip and team rows. The default of CK (score bug and broadcast graphics).
4	**Split**	Master design: team panels in the team colours left and right of a centre column.

Own designs (saved copies, see *Board Designs*) follow the masters in the list, marked with ★. The board changes at once; the choice is kept per sport and output.

Background Video and Picture

The two icons at the bottom right of the Game page put a video or a picture behind the St, Sp and Ad boards. The first video (MP4, WEBM, MOV) and the first picture (PNG, JPG, WEBP) in *data\media\background*, in alphabetical order, are used. When the folder is empty, clicking the icon asks for a file and copies it there. The CK output never gets a background, so it can always be keyed.

Use a dark, calm video so the digits stay readable. Most pictures in this guide were taken with a dark animated background video; the board on the right shows the same design without it:

With and Without Background

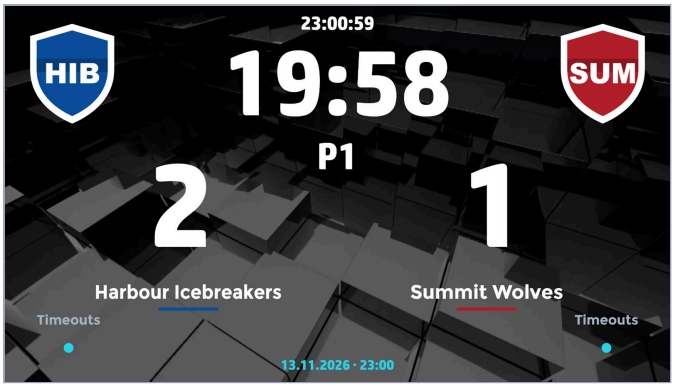


Figure 57. St board with the background video

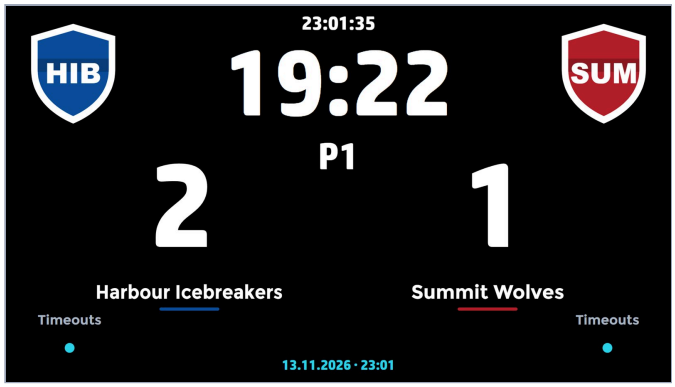


Figure 58. The same board without background (the design's own black)

NDI

NDI sends a board over the network to vMix, OBS, CasparCG, TriCaster or any other NDI receiver without a capture card. The NDI library is shipped with the program; nothing else has to be installed.

- Tick **NDI** for an output on this page, or click **NDI** on the right strip of the Game page to switch NDI on or off for every open output.
- NDI captures the output window, so the output must be open. It may sit on a second monitor; if you only need NDI, use a small window position (Full Screen off).
- The CK output is sent with transparency (alpha) instead of the green background: put it as an overlay on top of the camera in the receiver, no keyer needed.
- The source names are <*product*> *St*, … *Sp*, … *Ad* and … *CK* on the PC name.

NDI Status

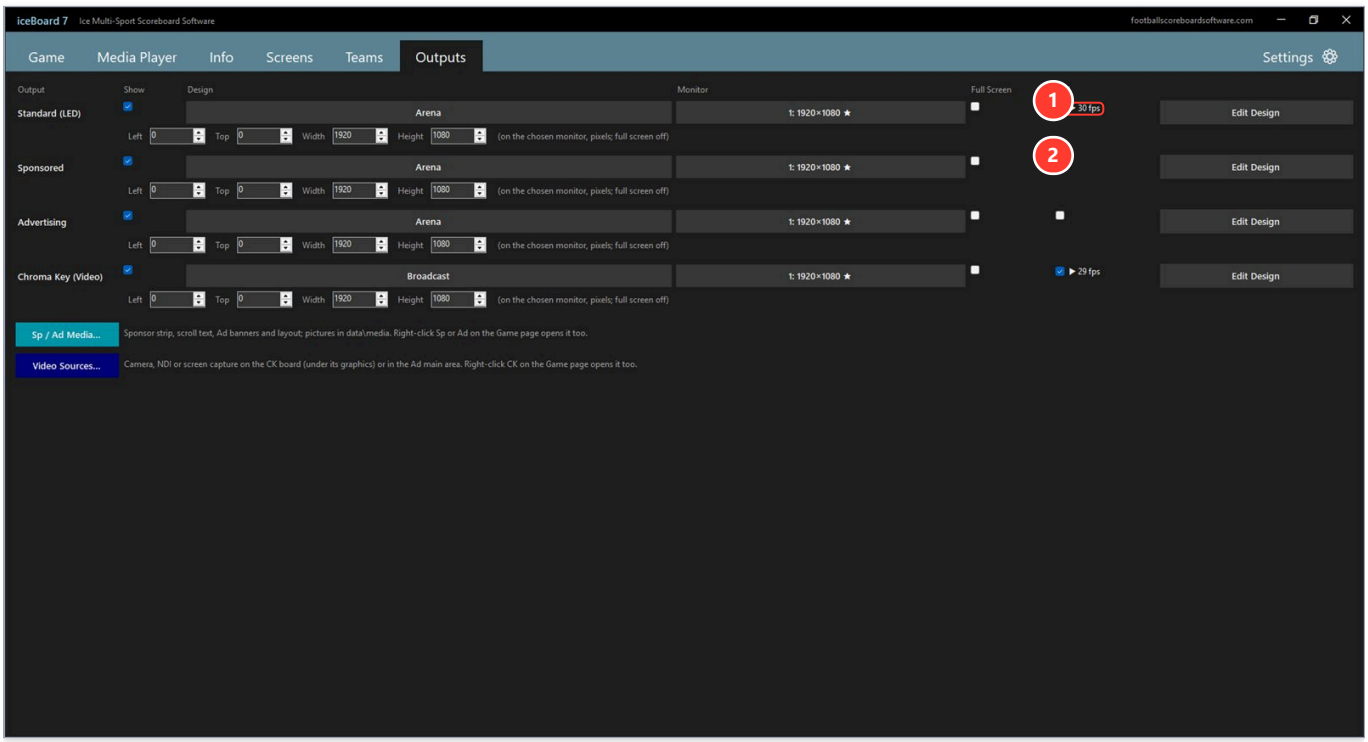


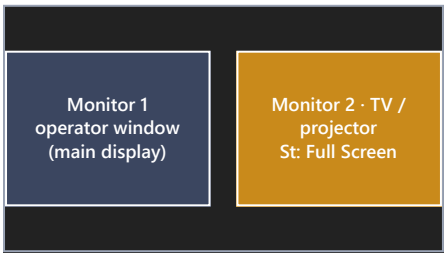
Figure 59. NDI switched on for the Standard (LED) output

#	Control	What it does
1	**NDI with status**	▶ **30 fps**: the output is sent and the frame rate reached. An error text instead (for example when the window is closed) tells you why nothing is sent.
2	**NDI off**	An empty box: this output is not sent over NDI.

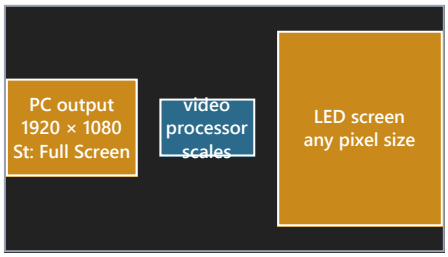
9 Sending the Board to the LED Screen

This chapter answers the question customers ask most: **how does the board get onto the LED screen?** Whether the LED is driven by a second monitor output, a video processor (scaler) or an LED sender card, the method is always the same: Windows sees the device as one more monitor, and the Outputs page of iceBoard 7 puts the board window on that monitor – either filling it (**Full Screen**) or on an exact pixel area (**Left / Top / Width / Height**).

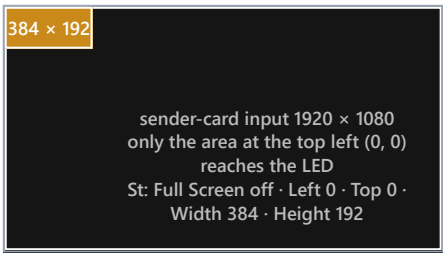
> **Note** **This is a one-time setting.** Everything on the Outputs page is saved at once. At every later start iceBoard 7 opens the board again by itself on the same monitor at the same place. You do not have to repeat it before each match – only when the LED, the processor, the sender card or the monitor arrangement changes.



Second monitor, projector or TV: the board fills monitor 2



Video processor: the full signal goes in, the processor scales it to the LED



Sender card: the board sits exactly on the pixel area the card sends to the LED

How Windows Sees the Outputs

The program never talks to the LED hardware directly. Whatever is connected to a video output of the PC – a monitor, a TV, a projector, an LED video processor or an LED sender card – appears in Windows as a monitor. The operator window stays on the main monitor; the board window goes to the LED monitor.

1. Connect the device to a free video output of the graphics card (HDMI, DVI or DisplayPort; an adapter cable is fine).
2. Press `Win` + `P` and choose **Extend**. (*Duplicate* would show the operator window on the LED; *Second screen only* would switch the operator monitor off.)
3. Open the Windows display settings (right-click the desktop → **Display settings**). The monitors are shown as numbered boxes; **Identify** shows the numbers on the screens. Drag the boxes so that their arrangement matches the desk – it only decides where the mouse crosses from one monitor to the other.
4. Click the LED monitor's box and set **Display resolution** to the resolution the processor or sender card expects (for most devices 1920 × 1080) and **Scale** to **100 %**.
5. Keep the operator monitor as the main display (*Make this my main display*), so that new windows and the taskbar stay on the desk.

> **Note** Scale 100 % on the LED monitor matters: iceBoard 7 places the board in the pixels Windows reports for that monitor. At 100 % these are the real pixels of the signal. At 125 % or 150 % Windows reports a smaller monitor (for example 1536 × 864 instead of 1920 × 1080) and enlarges the picture, so the board becomes soft and the Left / Top / Width / Height values no longer match the LED's pixel map.

On the Outputs page the **Monitor** list shows every monitor with its number and resolution; ★ marks the main display. The numbers follow the order in which Windows lists the monitors, which is not always the number shown by *Identify* – pick the LED monitor by its resolution when in doubt.

The Monitor List

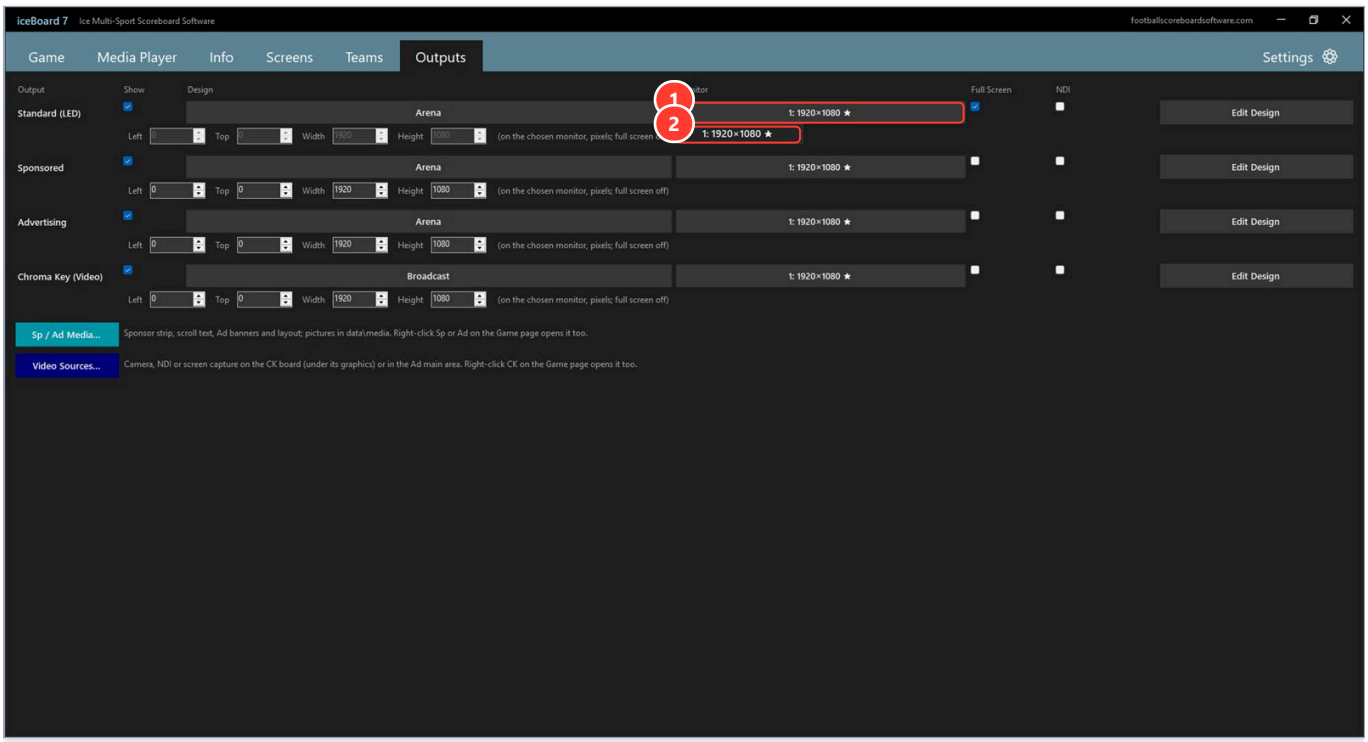


Figure 60. The Monitor list of the Standard (LED) row (this PC has one monitor; with more monitors each one is listed)

#	Control	What it does
1	**Monitor field**	Shows the chosen monitor; click to open the list.
2	**Monitor entries**	*number: width* × *height*, ★ = the main display. Click an entry: the board moves there at once and the choice is saved.

Second Monitor, Projector or TV

A monitor, TV or projector shows the whole picture of its input, so the board simply fills it:

1. Open the **Outputs** page.
2. In the **Standard (LED)** row choose the second monitor in **Monitor** (for example *2: 1920×1080*).
3. Tick **Full Screen**.
4. Tick **Show** (or click **St** on the Game page). The board fills the second monitor at once.

Full Screen on the Second Monitor

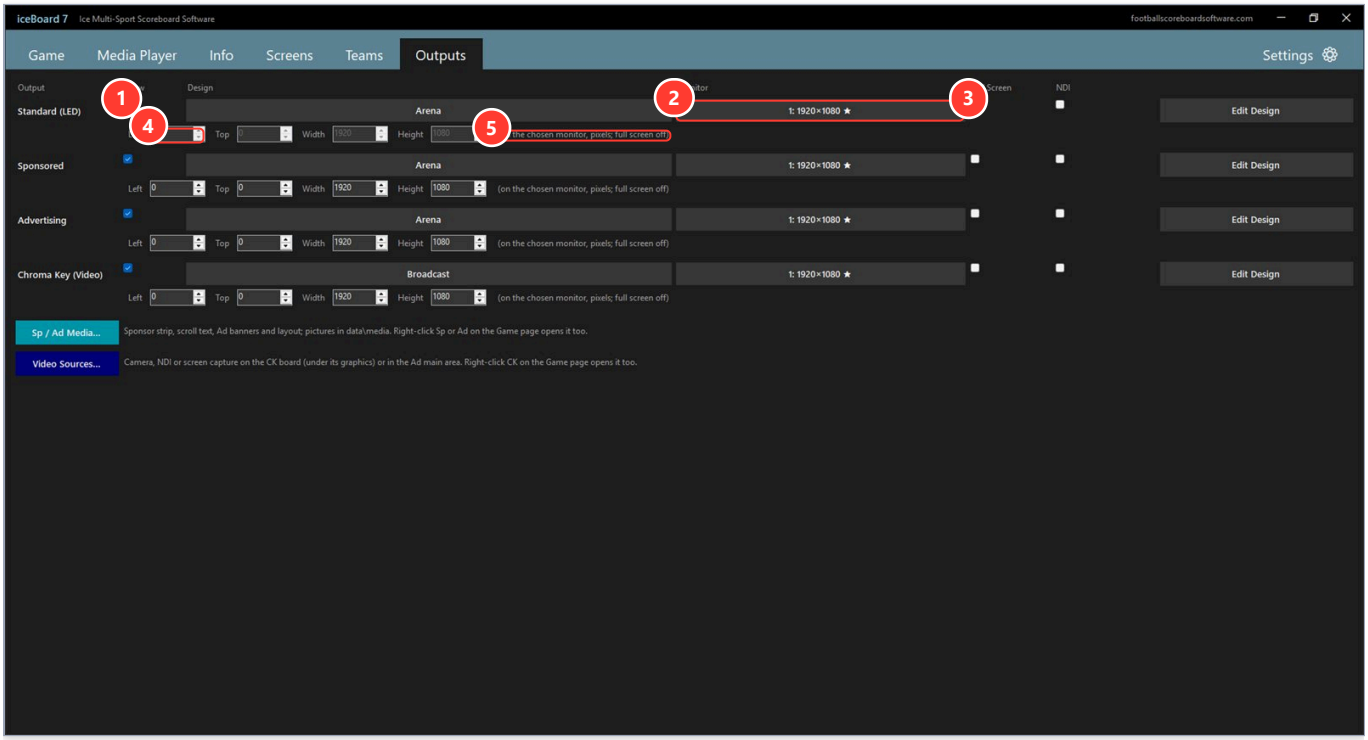


Figure 61. Standard (LED) on the whole monitor (Full Screen ticked)

#	Control	What it does
1	**Show**	Opens the St board window at once. It stays on, and the program opens it again by itself at every start.
2	**Monitor**	The display the board goes to: number, resolution, ★ = the main display of Windows. Choose the display that is the TV, the video processor or the sender card.
3	**Full Screen**	**Ticked**: the board fills the whole chosen monitor, whatever its resolution. The four position fields below are greyed out.
4	**Left**	Left, Top, Width, Height: used only when Full Screen is off.
5	**Hint**	Reminder: the values are pixels on the chosen monitor and apply when Full Screen is off. A value is applied when you press `Enter`, leave the field or click its arrows.

> **Tip** To try the settings on a PC with only one monitor, untick Full Screen and give the board a small area (for example Left 1000, Top 100, Width 800, Height 450): the board then sits next to the operator window instead of covering it.

LED Video Processor (Scaler)

An LED video processor (also called scaler or video controller) takes a normal video signal – usually 1920 × 1080 – and scales it to the pixel size of the LED screen, whatever that is (for example 768 × 384 or 2560 × 640). The scaling or cropping is set in the processor's own menu or software.

1. Set the Windows resolution of the processor's output to the processor's input resolution (often 1920 × 1080, 60 Hz), Scale 100 %.
2. On the Outputs page choose that monitor for **Standard (LED)** and tick **Full Screen** and **Show**.
3. In the processor, scale the whole input to the LED (or choose the part of the input it should show).

When the processor takes only a fixed part of its input (for example the top 1920 × 480 of a 1920 × 1080 signal for an LED strip), untick Full Screen and type that part: Left **0**, Top **0**, Width **1920**, Height **480**. The design adapts its layout to the shape of the window:

A 1920 × 480 Strip

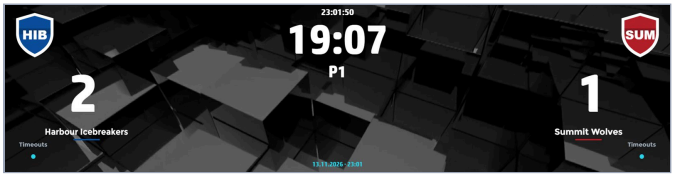


Figure 62. The St board in a 1920 × 480 area (Full Screen off, Left 0, Top 0, Width 1920, Height 480)

LED Sender Card (Direct Connection)

An LED sender card (sending card or LED controller box) is connected straight to the PC and does **not** scale. It takes a pixel area of its HDMI / DVI input – usually starting at the top left corner – and sends exactly those pixels to the LED cabinets; the rest of the picture is ignored. Which area it takes and how the cabinets are arranged (the "LED mapping") is set in the LED vendor's software; that part belongs to the LED supplier.

So the board must sit exactly on that area, pixel for pixel:

1. Set the Windows resolution of the sender card's output to what the card expects (often 1920 × 1080), Scale 100 %.
2. On the Outputs page choose the sender card's monitor for **Standard (LED)**.
3. Untick **Full Screen**.
4. Type **Left 0** and **Top 0** (the corner where the card's mapping starts – if the vendor software starts the LED elsewhere, type that position).
5. Type the LED size in pixels as **Width** and **Height**, for example 384 × 192.
6. Tick **Show**. The board appears on the LED at once.

LED screen	Full Screen	Left	Top	Width	Height
3 × 2 cabinets of 128 × 96 pixels	off	0	0	384	192
Wall of 768 × 384 pixels	off	0	0	768	384
Long strip of 1920 × 480 pixels	off	0	0	1920	480
Mapping starts at x 0, y 200 in the vendor software	off	0	200	LED width	LED height
LED of exactly 1920 × 1080	on	–	–	–	–

The Sender-Card Area on the Outputs Page

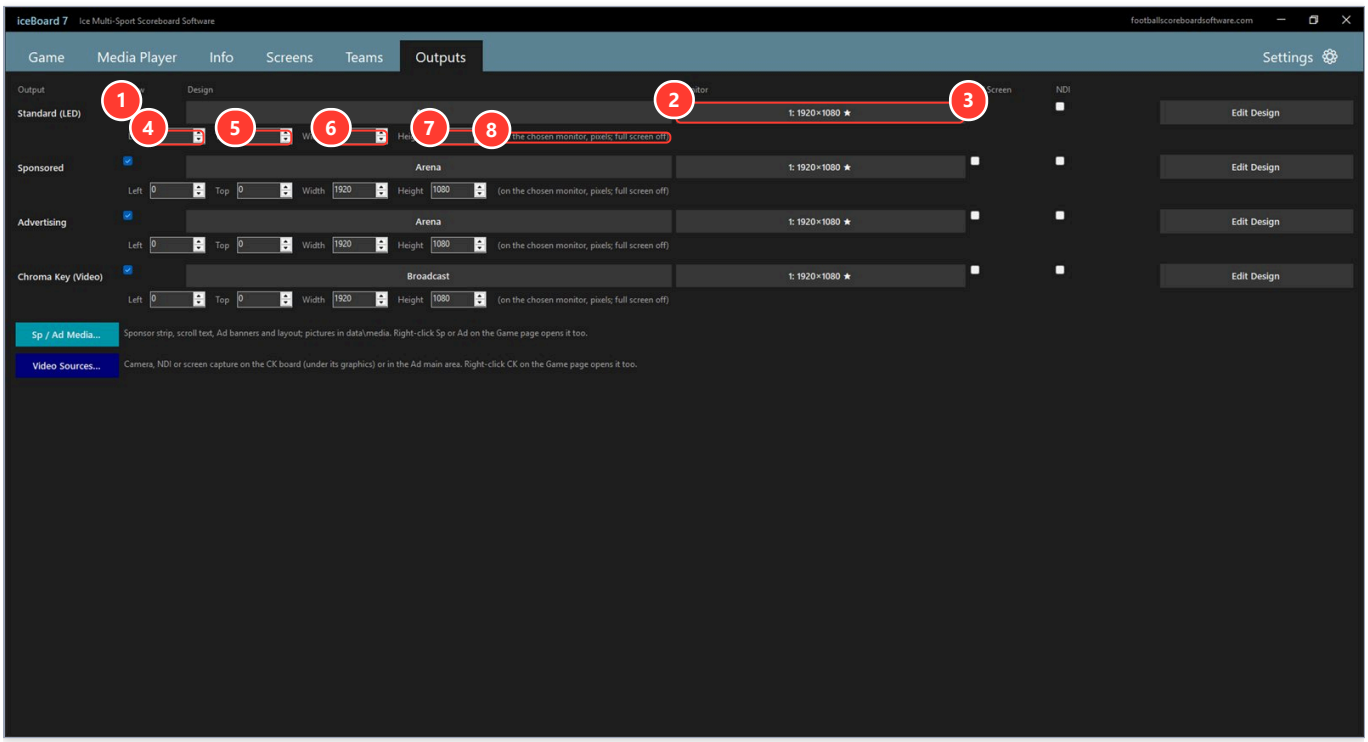


Figure 63. Standard (LED) on a 384 × 192 area at the top left of the sender card's monitor

#	Control	What it does
1	**Show**	Opens the St board window at once. It stays on, and the program opens it again by itself at every start.
2	**Monitor**	The display the board goes to: number, resolution, ★ = the main display of Windows. Choose the display that is the TV, the video processor or the sender card.
3	**Full Screen**	**Not ticked**: the board uses the rectangle of the four fields below instead of the whole monitor.
4	**Left**	Distance from the left edge of the chosen monitor in pixels. **0** = the left edge (sender cards map the LED from there).
5	**Top**	Distance from the top edge of the chosen monitor in pixels. **0** = the top edge.
6	**Width**	The width of the LED screen in pixels (here 384). At least 160.
7	**Height**	The height of the LED screen in pixels (here 192). At least 90.
8	**Hint**	Reminder: the values are pixels on the chosen monitor and apply when Full Screen is off. A value is applied when you press `Enter`, leave the field or click its arrows.



Figure 64. The board in the 384 × 192 window: the design arranges itself for the small screen

Several Outputs

Each of the four outputs (St, Sp, Ad, CK) has its own row with its own monitor and area, so one PC can drive several screens at the same time, for example:

- St with Full Screen on the LED processor (monitor 2), Sp with Full Screen on a TV in the hall (monitor 3).
- Two LED screens on one sender card: St at Left 0, Top 0, Width 384, Height 192 and Ad at Left 384, Top 0 with the size of the second LED – the vendor software maps both areas.
- CK as a small window on the operator monitor (Full Screen off) when it is only needed as an NDI source for a vision mixer.

Several outputs may share a monitor; their areas should not overlap.

Pixels, Monitors and Window Scaling

- Left, Top, Width and Height are pixels **on the chosen monitor**: 0 / 0 is the top left corner of that monitor, wherever it stands in the Windows arrangement (also left of or above the main display). Width and Height are at least 160 × 90.
- A value is applied when you press `Enter`, leave the field or click its arrows; the board moves at once.
- The program remembers the monitor by its Windows name as well as by its number. If Windows changes the order of the monitors (after a driver update or when a monitor is added), the board still finds its monitor.
- If the chosen monitor is not connected at the start, the board opens on the last monitor of the list (on a PC with one monitor: on the operator screen). Connect the device or switch it on: when Windows reports the change, the board moves back to its place by itself – also when you change a resolution while the program runs.
- A board on another monitor than the operator window stays on top of other windows and of the taskbar, and the mouse pointer is hidden over it. A board on the operator's own monitor is a normal window (the operator window can come in front of it).
- Set Scale to 100 % for the LED monitor in the Windows display settings (see above); the operator monitor may use any scale.

A One-Time Setting

- **Saved automatically.** There is no Save button: every change on the Outputs page (Show, Monitor, Full Screen, Left / Top / Width / Height, design) is saved at once in *data\config\outputs.json*.
- **Restored at every start.** When iceBoard 7 starts, every output that was on opens again by itself on the same monitor, at the same place, with the same design. Start the program and the board is on the LED.
- **Not before every match.** Repeat the setting only when the hardware changes: another LED size or mapping, another processor or sender card, another Windows resolution, another cable / graphics output, or a new PC.

- **New PC or reinstallation.** Copy the *data* folder (see *Files and Folders*); the outputs open at the same place on a PC with the same monitor arrangement.

Troubleshooting the LED Output

Problem	What to do
The board is on the wrong screen.	Choose the other entry in **Monitor** (pick it by its resolution). Check that Windows uses **Extend** (`Win`+`P`).
The operator window appears on the LED.	Windows is in *Duplicate* mode or the LED is the main display: choose **Extend** and make the operator monitor the main display in the Windows display settings.
Black borders around the board on the LED.	Sender card: Width and Height must be exactly the LED size in pixels, Left / Top the start of the mapping. Video processor: use Full Screen and let the processor scale the whole input.
Part of the board is cut off.	The area is larger than the LED mapping, or Left / Top are wrong, or the Windows resolution differs from the one the device expects. Check the values against the LED vendor software.
The board looks soft or blurry.	Set Scale to 100 % and the device's own resolution for the LED monitor in the Windows display settings. A processor that scales a small signal up also softens it.
The taskbar or another window covers the board.	Put the board on its own monitor (not the operator's): there it stays on top. On the operator's monitor it is a normal window.
The mouse pointer shows on the LED.	The pointer is hidden over a board on its own monitor; move the mouse back to the operator monitor. Arrange the monitors in the Windows display settings so that the LED monitor is not in the way of the mouse (for example diagonally below).
The board did not open at the start.	Is **Show** ticked for the output? Is the device switched on and connected? Without its monitor the board opens on the last monitor of the list and moves back as soon as Windows reports the monitor again.
The board is on the monitor but the LED stays dark.	Check the input selection of the processor, and the sender card, its mapping and brightness in the LED vendor's software – these are outside iceBoard 7.

10 Media Player

The **Media Player** page puts videos, pictures, sound files and web pages on the board instead of the scoreboard: a walk-on video, sponsor clips, a half-time slide show, a stream or a YouTube link. It has 20 playlists. A clip plays on the St board and, when they are open, also on the Sp and Ad boards (without sound there); the CK output always keeps its graphics.

- The St output must be open (Outputs page or the St button); otherwise the page asks you to switch it on first.
- Playback goes on while you work on other pages. While a clip plays, the **Settings** tab shows the time left (▶ m:ss) and the taskbar button shows a progress bar.
- The scoreboard comes back with the **Game** tab, with Stop / Finish, at the end of a single clip, and – with *Return to the Scoreboard* on – at the end of the playlist.
- A picture stays on the board for the **Image Play Duration** of the Settings page (default 5 seconds), then the playlist goes on.
- While something plays, the playlist cannot be changed (Add Clip, Delete Clip, the playlist buttons and Delete Playlist are hidden or blocked).

The Media Player Page

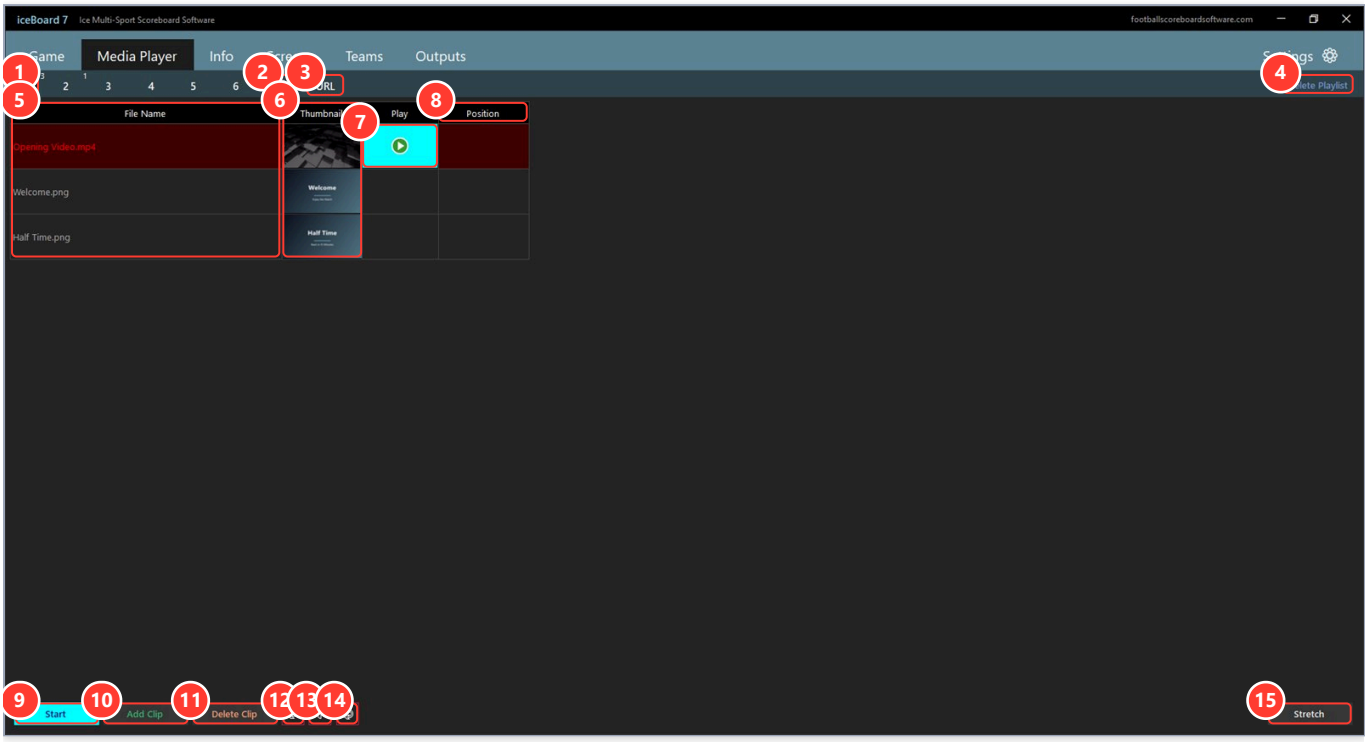


Figure 65. The Media Player page with three clips in playlist 1 (playlist 2 holds one clip)

#	Control	What it does
1	**Playlists 1 – 6**	Six playlist buttons; the small number above a button is the number of clips in that playlist. The open playlist has the dark colour. Not while something plays.
2	**Playlists 7 – 20**	Opens the list of playlists 7 to 20 (with their clip counts); the button then shows the chosen number.
3	**URL**	Opens the list of web addresses (web pages, streams, YouTube links) to show on the board (below).

#	Control	What it does
4	**Delete Playlist**	Removes every clip from the open playlist after a confirmation. The files themselves stay where they are.
5	**File Name**	The clips of the playlist. Videos in white, pictures in grey, a file that no longer exists in red (it is skipped). The tooltip shows the full path. Drag a row up or down to change the order.
6	**Thumbnail**	A small picture of the clip (videos: the Windows thumbnail).
7	**Play**	The selected row has a turquoise ▶ button: it plays this one clip on the board (with Repeat on: again and again).
8	**Position**	While a clip plays: the time left (m:ss).
9	**Start**	Plays the playlist from the selected row to the end. Start switches Repeat off. While the playlist runs the button says **Finish** and stops it.
10	**Add Clip**	Adds videos (MP4, M4V, WEBM, MOV, MKV, OGV), sound files (MP3, M4A, AAC, WAV, OGG) and pictures (BMP, GIF, JPG, PNG, WEBP). The files are used where they are – keep them in a folder that stays.
11	**Delete Clip**	Removes the selected row from the playlist (the file stays).
12	**Return to the Scoreboard**	Green frame = on: when the playlist reaches its end the board shows the scoreboard again. Red frame = off: the playlist starts again from the top.
13	**Sound On / Off**	Green frame = the sound of the clips plays. Off by default.
14	**Auto Repeat**	Green frame = the playing clip starts again when it ends (Play of one clip).
15	**Display Mode**	How a clip fills the board (list below).

While a Clip Plays

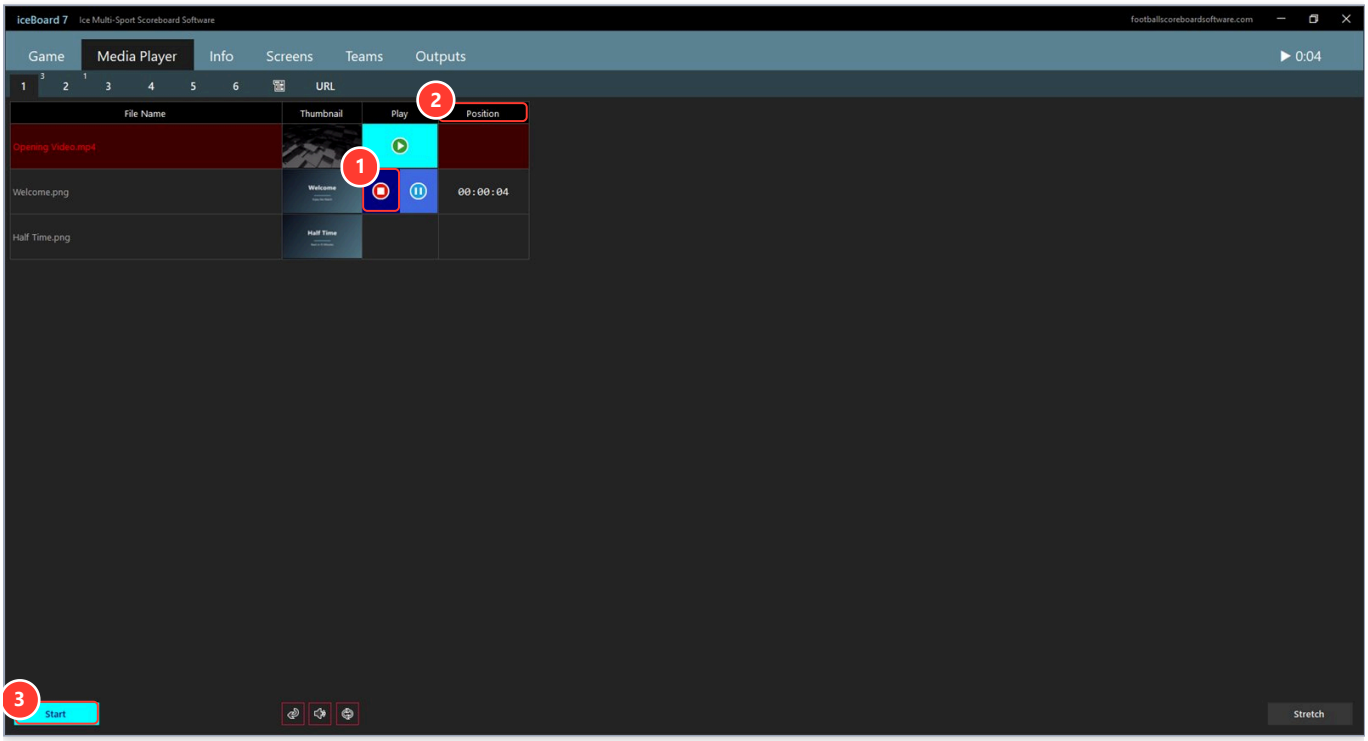


Figure 66. A slide of the playlist on the board

#	Control	What it does
1	**Stop ■ / Pause ▮▮**	On the playing row the Play cell turns into **Stop** (back to the scoreboard) and **Pause** (pause / continue).
2	**Position**	The time left of the playing clip.
3	**Start**	Starts the playlist (Finish while the playlist runs).

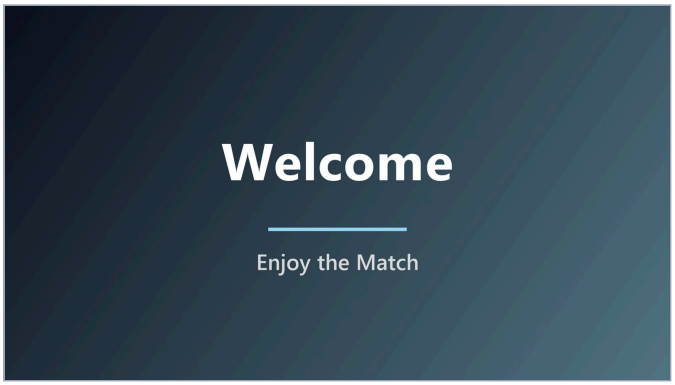


Figure 67. The St board showing the slide “Welcome” of the Media Player

Select another row while a clip plays: its Play cell offers ▶ to switch straight to that clip.

Display Modes

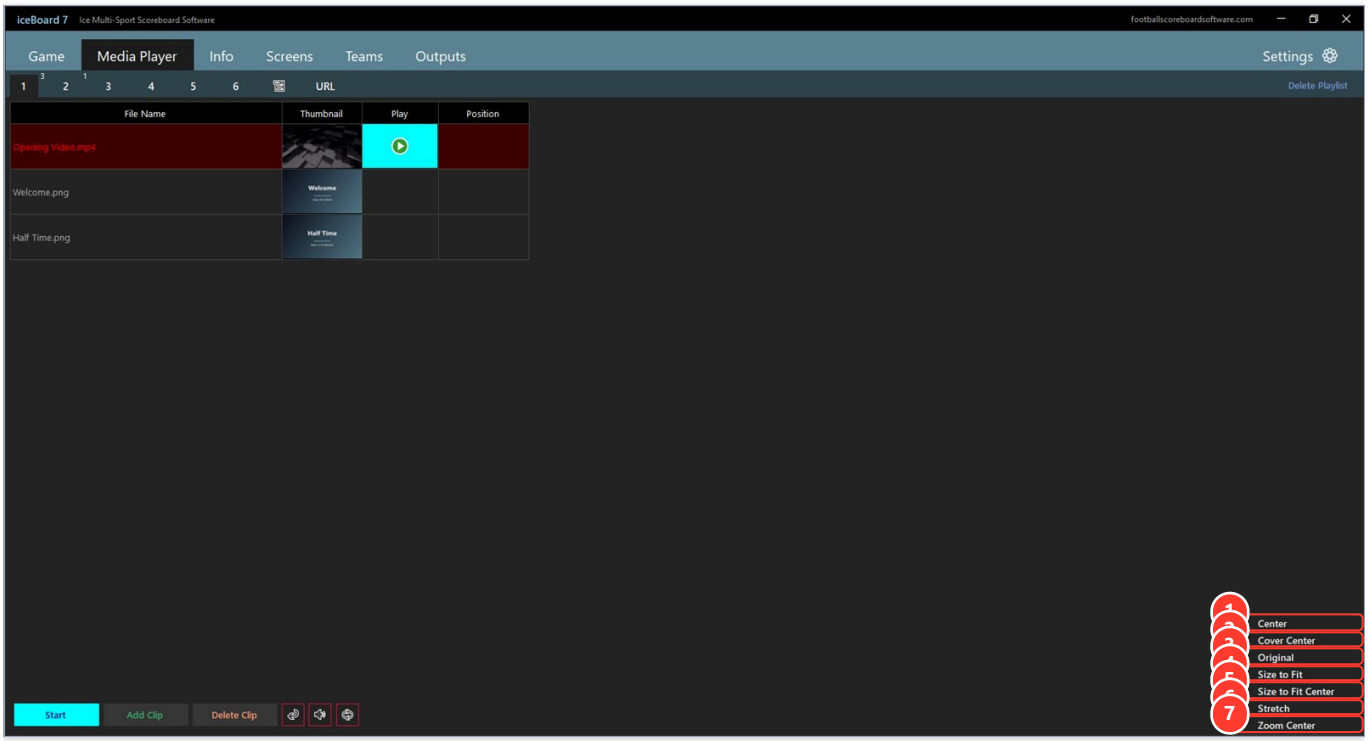


Figure 68. The display modes of the Media Player

#	Control	What it does
1	**Center**	Original size in the middle of the board (a large clip is cut at the edges).
2	**Cover Center**	Fills the board, keeps the shape, cuts the edges that do not fit.
3	**Original**	Original size from the top left corner.

#	Control	What it does
4	Size to Fit	The whole clip as large as possible, from the top left corner (bars where the shape differs).
5	Size to Fit Center	The whole clip as large as possible, in the middle.
6	Stretch	Fills the board exactly; a clip of another shape is distorted. The default.
7	Zoom Center	Fills the board, keeps the shape, cuts the edges (like Cover Center).

Playlists 7 to 20

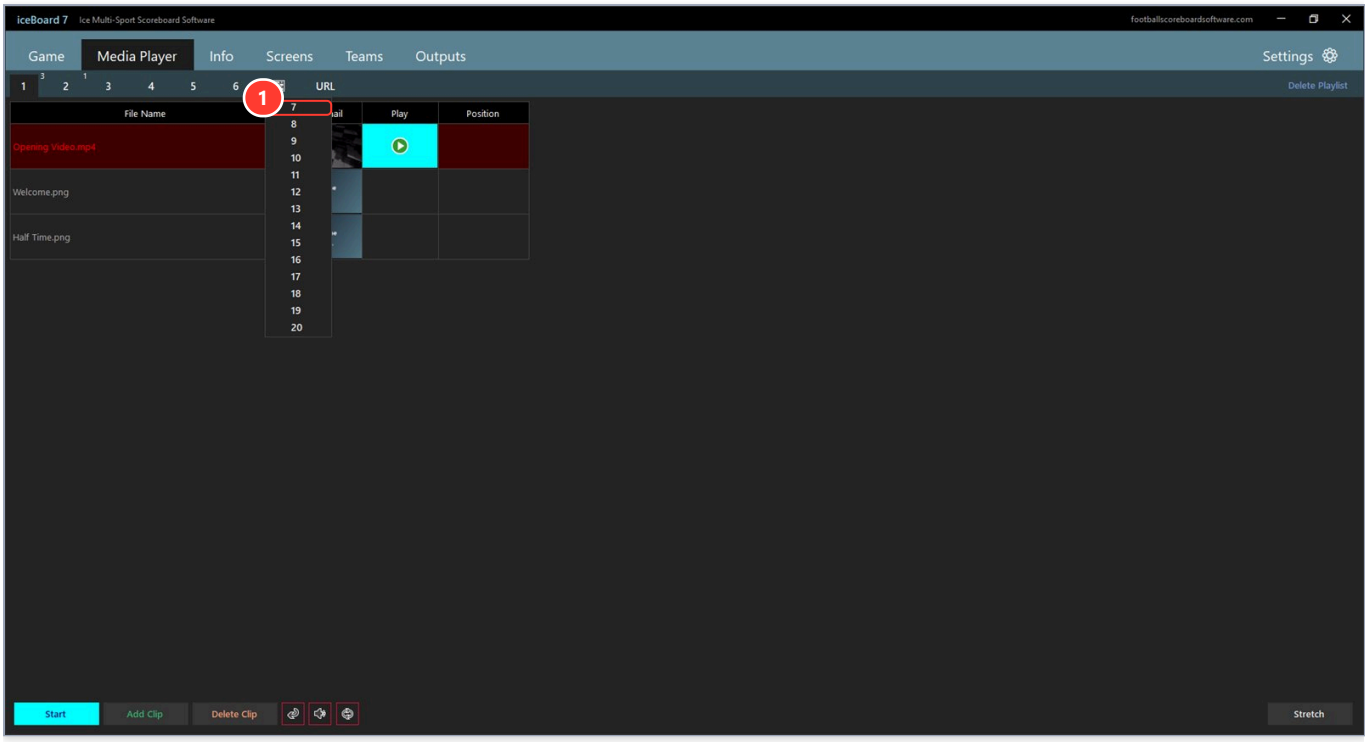


Figure 69. The list of playlists 7 to 20

#	Control	What it does
1	Playlist entries	Click a number to open that playlist; a number in brackets is its clip count.

Web Pages and Streams (URL)

The URL list holds web addresses that the board can show full screen: a web page, a live stream page or a YouTube link (it plays the video). The list is saved by itself.

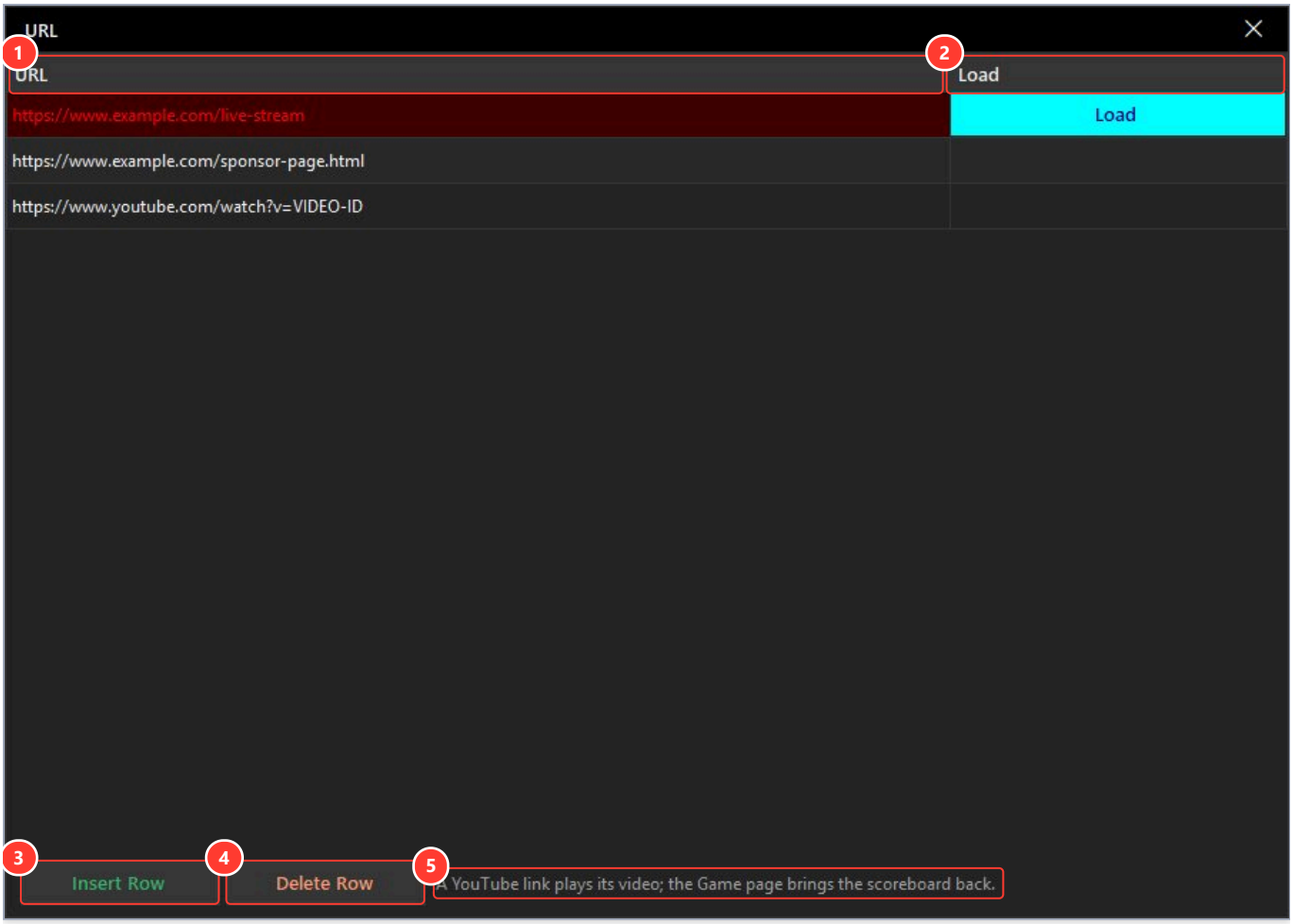


Figure 70. The URL list

#	Control	What it does
1	URL	One address per row. Click a cell and type (or press `F2`).
2	Load	The **Load** button of the selected row shows that address on the board.
3	Insert Row	Inserts an empty row above the selected one (or at the end) and starts editing it.
4	Delete Row	Removes the selected row.
5	Hint	A YouTube link plays its video; the **Game** tab brings the scoreboard back.

Media Player from the Remote Control and the Keyboard

The remote control has a **Media Player** block at the end of its panel: the playlist numbers, **Start / Finish**, **Pause**, **Next Clip** and **Back to the Scoreboard**, with a line that shows what plays and the time left. Starting a playlist from the phone opens the Media Player page on the PC.

Command (POST /api/command)	What it does
media.start [1–20]	Opens the playlist (the given number, or the open one) and plays it from the first clip.
media.stop	Back to the scoreboard.
media.pause	Pause / continue.
media.next	The next clip of the running playlist.

Command (POST /api/command)	What it does
media.repeat, *media.volume*, *media.return* [on|off]	Auto Repeat, Sound, Return to the Scoreboard (without a value: switch over).

GET /api/media returns the state (playlist, what plays, time left, the switches). In the keyboard shortcut editor two Media Player actions can get a key (no key by default): **Start / Finish** of the playlist and **Back to the Scoreboard**.

The Media Player Block of the Remote

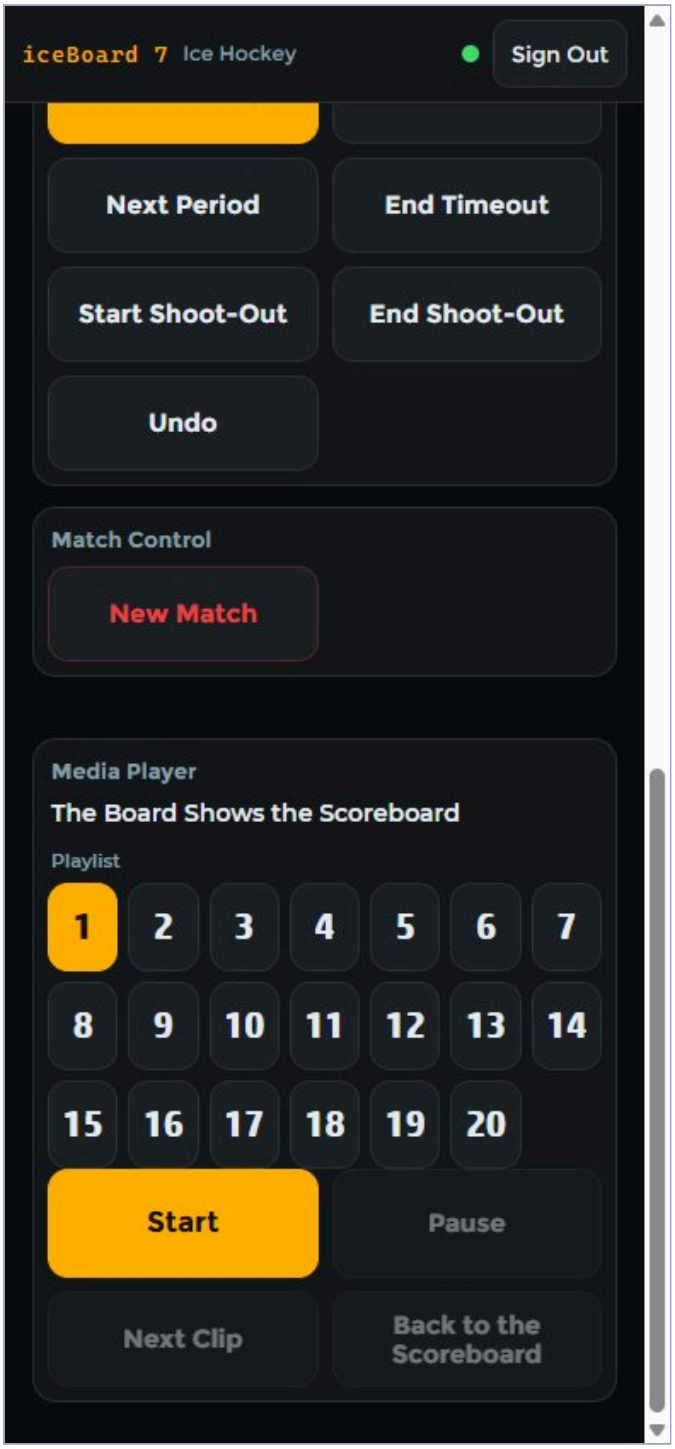


Figure 71. The Media Player block at the end of the remote panel (phone)

11 Video Sources

The **Video Sources** window puts a live picture on the CK board (under the CK graphics) or into the main area of the Ad board: a **camera** (USB webcam, HDMI capture device), an **NDI source** from the network (a camera, a vision mixer, another PC) or a **screen capture** of a part of the desktop. Open it with **Video Sources…** on the Outputs page or with a right-click on **CK** on the Game page.

- One source per board. Closing the board window stops its source.
- The window remembers camera, format, NDI source, capture area and display mode per board and shows them again the next time; a source never starts by itself after a restart – click Start (and Show) again.
- The board window must be open (CK or Ad) for Show.

Camera

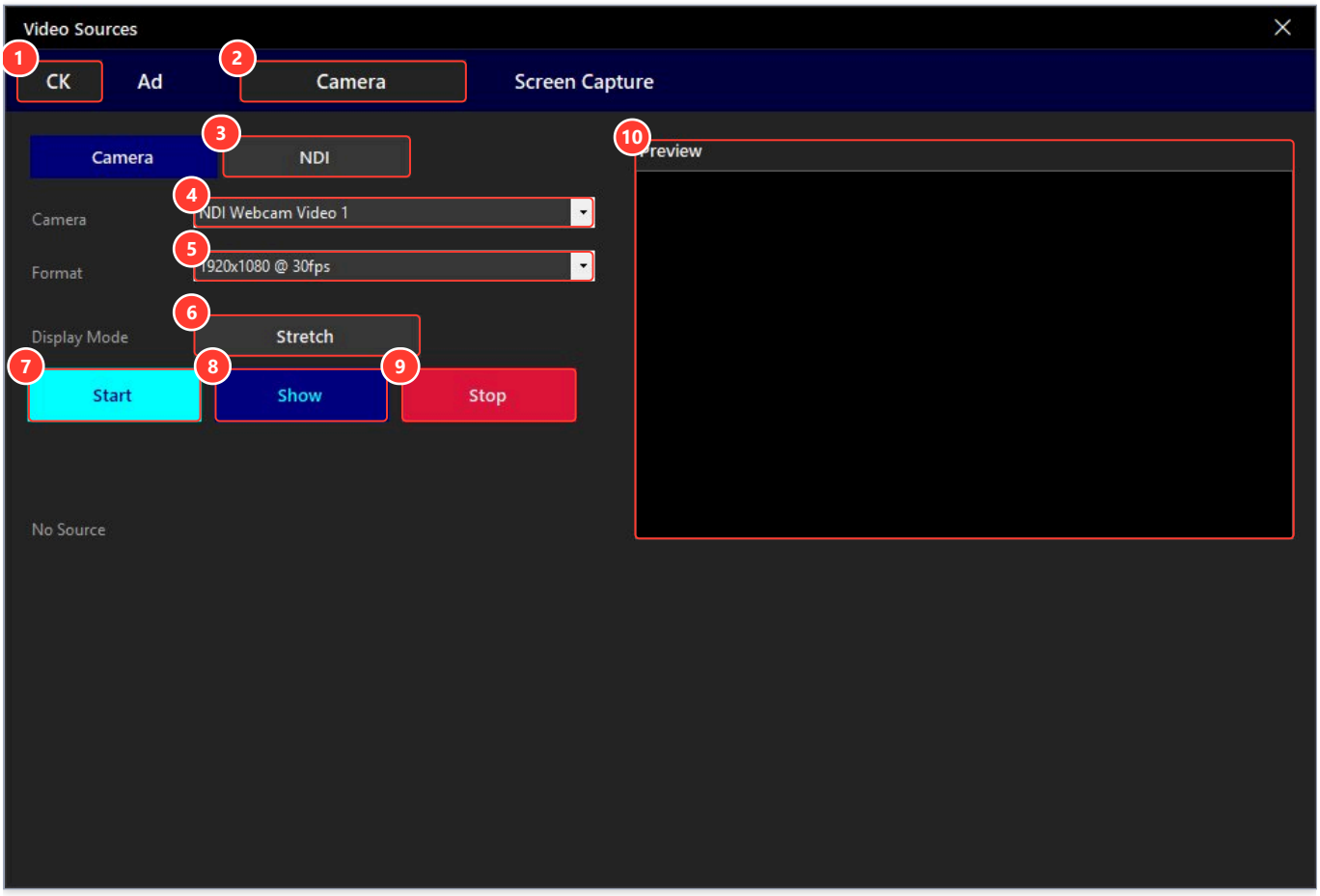


Figure 72. Video Sources – Camera

#	Control	What it does
1	CK / Ad	The board the source goes to: **CK** (the whole window, under the CK graphics) or **Ad** (the main area of the Ad board). Each board has its own source and settings.
2	Camera / Screen Capture	The two pages: **Camera** (a camera or an NDI source) and **Screen Capture** (a part of the desktop).
3	Camera / NDI	The kind of live source on this page: a camera of the PC or an NDI source.
4	Camera	The cameras and capture devices Windows sees (“Searching…” while the list is built).

#	Control	What it does
5	**Format**	Size and frame rate the camera offers (for example *1920x1080 @ 30fps*).
6	**Display Mode**	How the picture fills the board area: the seven modes of the Media Player (Stretch, Cover Center, Size to Fit …).
7	**Start**	Starts the source and shows it in the **Preview** on the right (for a screen capture it goes straight to the board).
8	**Show**	Puts the started source on the board.
9	**Stop**	Stops the source; the board shows its own content again.
10	**Preview**	The picture of the source before (and while) it is on the board.

NDI Source

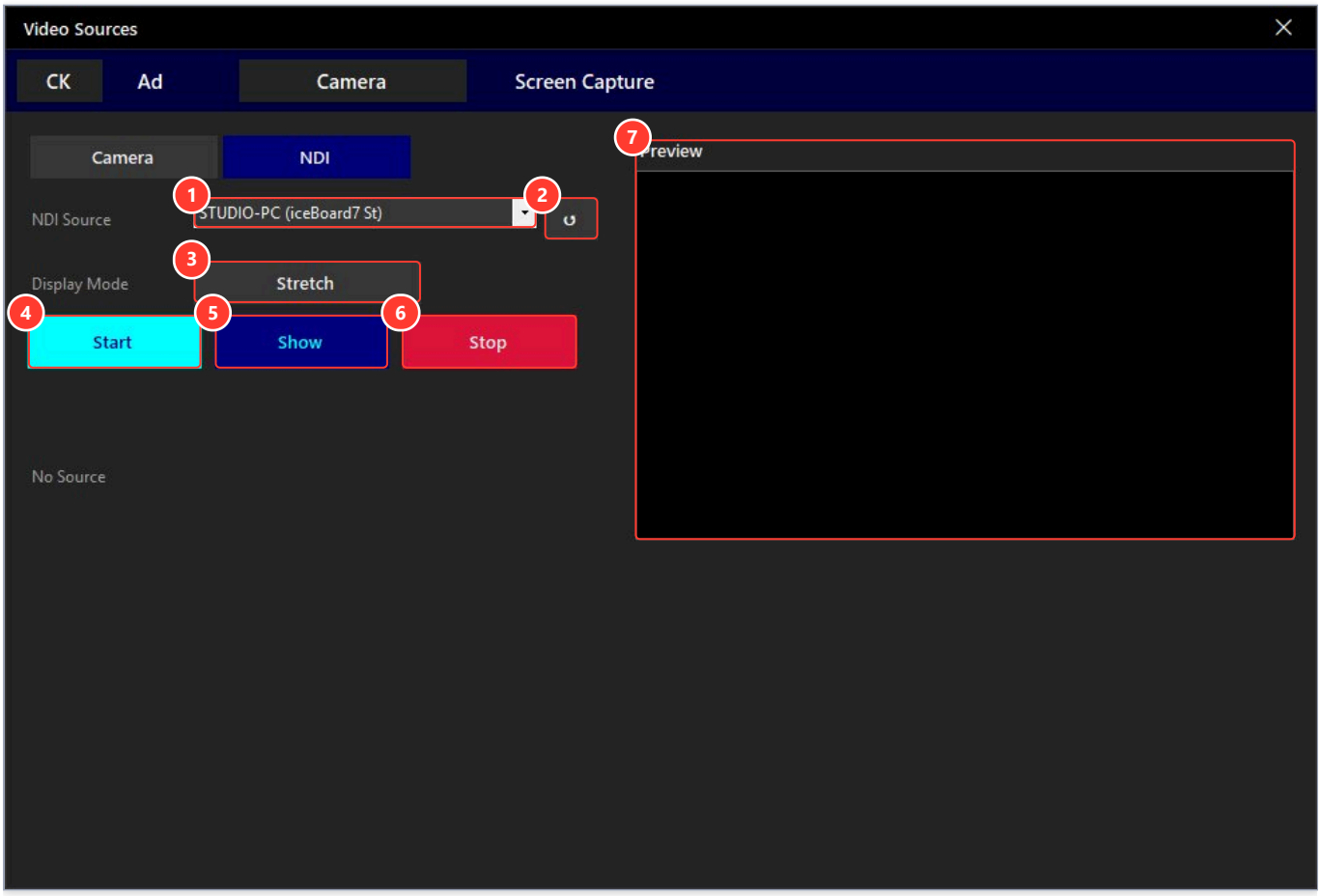


Figure 73. Video Sources – NDI (here the program's own St output as the source)

#	Control	What it does
1	**NDI Source**	The NDI sources found in the local network, named *COMPUTER (source)*. The video is received in the highest quality, without sound.
2	**Refresh** ↺	Searches the network again (for a source that was started later).
3	**Display Mode**	How the picture fills the board area: the seven modes of the Media Player (Stretch, Cover Center, Size to Fit …).
4	**Start**	Starts the source and shows it in the **Preview** on the right (for a screen capture it goes straight to the board).

#	Control	What it does
5	**Show**	Puts the started source on the board.
6	**Stop**	Stops the source; the board shows its own content again.
7	**Preview**	The picture of the source before (and while) it is on the board.

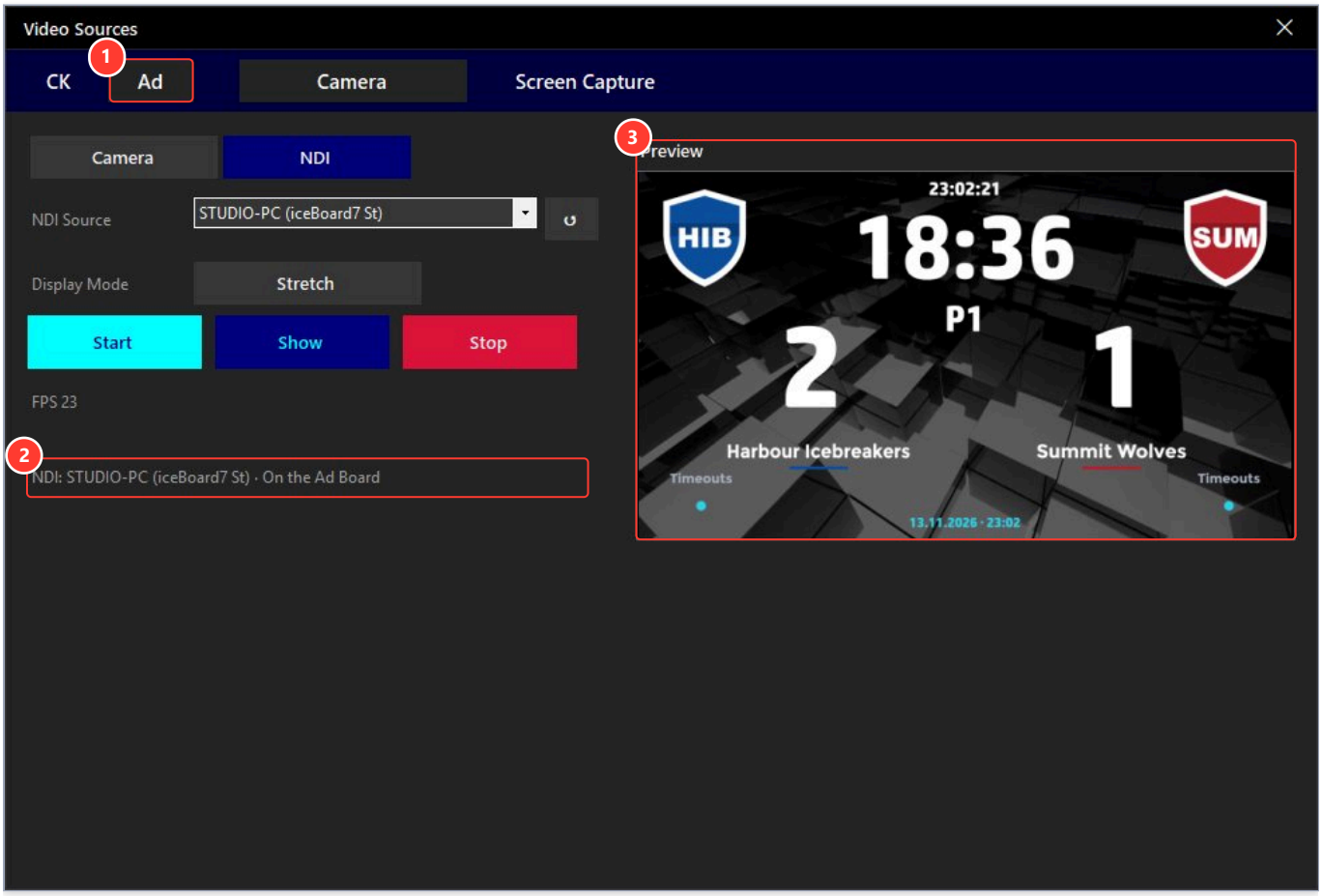


Figure 74. The NDI source started and shown in the Ad main area

#	Control	What it does
1	**Board: Ad**	Ad is chosen: the source goes into the main area of the Ad board.
2	**Status**	What runs and where: the source and “On the Ad Board” or “Preview Only”, or an error text. Above it the frame rate (FPS) of the source.
3	**Preview**	The received picture.

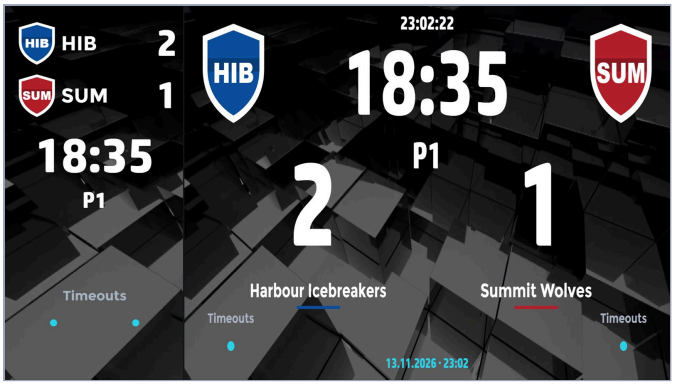


Figure 75. The Ad board with the NDI source in its main area, next to the scoreboard

Screen Capture

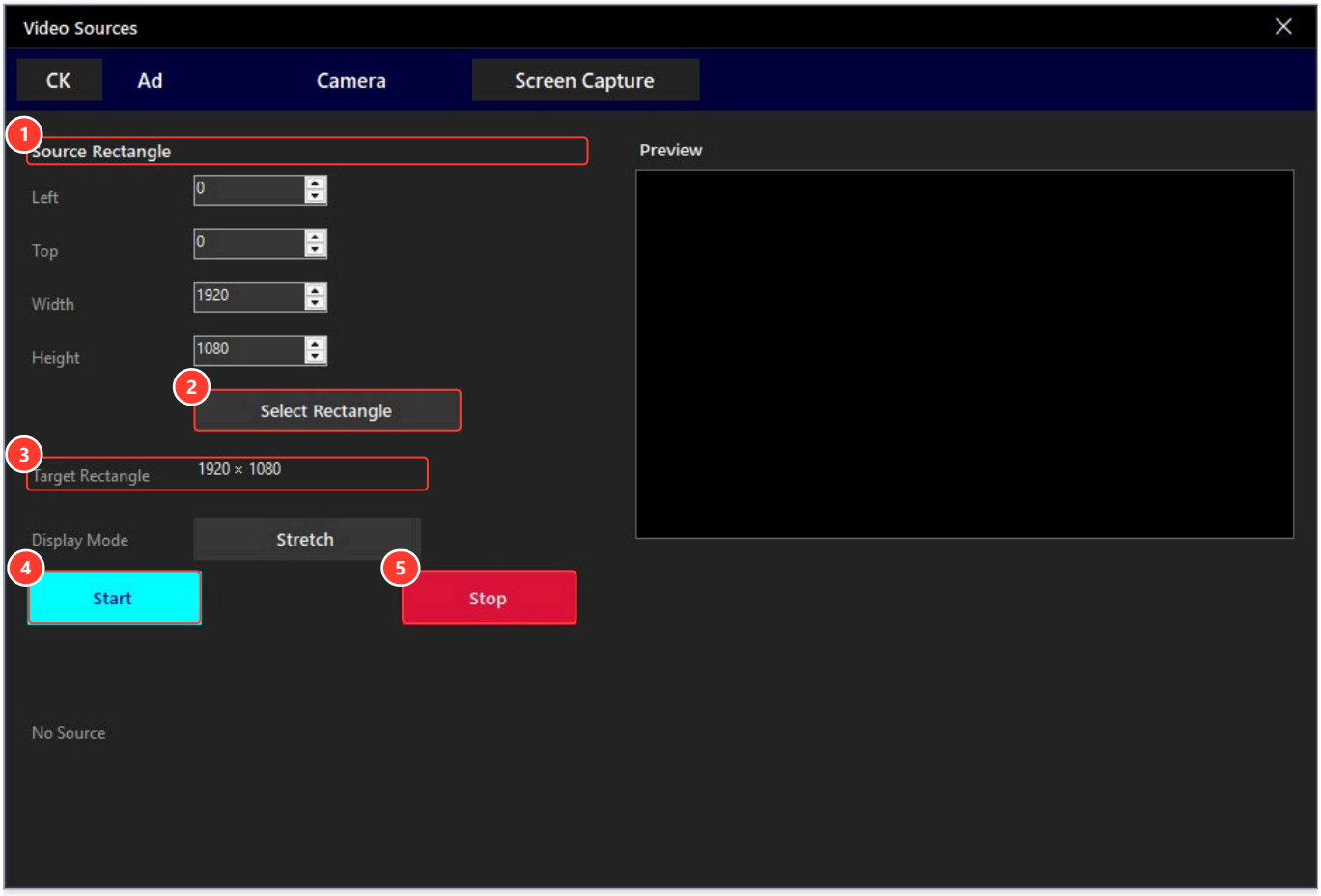


Figure 76. Video Sources – Screen Capture

#	Control	What it does
1	Source Rectangle	The part of the desktop to capture, in pixels of the whole desktop: **Left**, **Top**, **Width**, **Height**.
2	Select Rectangle	Darkens the screens: drag a rectangle with the mouse to fill in the four values.
3	Target Rectangle	The size of the board window the capture goes to.
4	Start	Starts the capture and puts it on the board at once (about 30 frames per second).
5	Stop	Stops the capture.

12 Sp / Ad Media

The **Sp / Ad Media** dialog sets up what the Sponsored and Advertising boards show besides the score: the sponsor strip of the Sp board, where the scrolling text of the Info page runs, how the Ad board is sliced into scoreboard, banners and advertising area, and the pictures, videos and texts of every strip. The dialog stays open next to the main window (you can keep scoring), and every change is saved and shown on the board windows at once.

Open it with	Opens at
Sp / Ad Media... at the bottom of the Outputs page	Sponsor Strip (Sp)
Right-click **Sp** on the output strip of the Game page	Sponsor Strip (Sp)
Right-click **Ad** on the output strip of the Game page	Ad Layout

Each strip has its own folder under *data\media*: *sponsor* (Sp strip), *ad* (main area of the Ad board), *banner1* and *banner2*. An empty banner folder shows the sponsor pictures; empty sponsor and ad folders show the sample media of the sport.

Strip Modes and Fields

Every strip (the Sp strip, both banners and the Ad main area) has a **Mode**. The dialog shows only the fields the chosen mode uses:

Mode	Where	What the strip does	Fields shown
Slide	Sp strip, banners	One picture or video after the other. Pictures stay *Seconds per Picture*; videos play to their end; a single video loops.	Seconds per Picture, Display Mode, Pictures
Playlist	Main Area (Ad)	The same as Slide, for the large advertising area.	Seconds per Picture, Display Mode, Pictures
Scroll Images	all	All pictures side by side in an endless loop (videos are left out).	Direction, Speed, Picture Height, Gap, Background colour, Pictures
Scroll Text	all	Your lines as segments in an endless loop, colours 1–3 cycling per line, a dot or a gap between them.	Direction, Speed, Gap, Font Size, Separator, Colours, Scroll Text
Images + Text	Sp strip, banners	Pictures and lines alternating in one loop (picture 1, line 1, picture 2, line 2 ...).	all scroll fields, Colours, Scroll Text, Pictures
Camera	Main Area (Ad)	The live picture of the PC's camera or capture device.	Display Mode

Field	Range (default)	What it does
Direction	Left, Right, Up, Down (Left)	Where the loop runs. Up / Down suit tall strips such as a side banner.
Speed (1–20)	1–20 (5)	In tenths of the strip's thickness per second: 5 moves half the strip height per second, so the same value looks alike on every board size.
Seconds per Picture	2–120 (8)	How long a picture stays in Slide / Playlist. Videos always play to their end.

Field	Range (default)	What it does
Display Mode	Fit, Fill, Stretch (Fit)	**Fit** shows the whole picture (bars where the shape differs), **Fill** fills the area and crops the edges, **Stretch** fills the area and distorts.
Picture Height (%)	20–100 (80)	Height of the scrolling pictures in % of the strip's thickness.
Gap (%)	0–100 (12)	Space between two pictures or segments, in % of the strip's thickness.
Font Size (%)	20–90 (50)	Text height in % of the strip's thickness. The font is the text font of the design.
Separator	Dot •, Gap Only (Dot)	What stands between two text segments.
Colours	Background, Colour 1–3	Left-click a colour button to choose a colour; **right-click** it to go back to the design's theme colour (the button then says · *Theme*). Lines take Colour 1, 2, 3, 1 … in turn. Theme defaults: background = the design's panel colour for text (transparent for pictures), Colour 1 and 3 = text colour, Colour 2 = accent colour.
Scroll Text (One Segment per Line)	free text	Each non-empty line is one segment of the loop. The board updates half a second after you stop typing.

Sponsor Strip (Sp)

The strip along the bottom of the Sp board. The picture shows the factory settings (Slide):

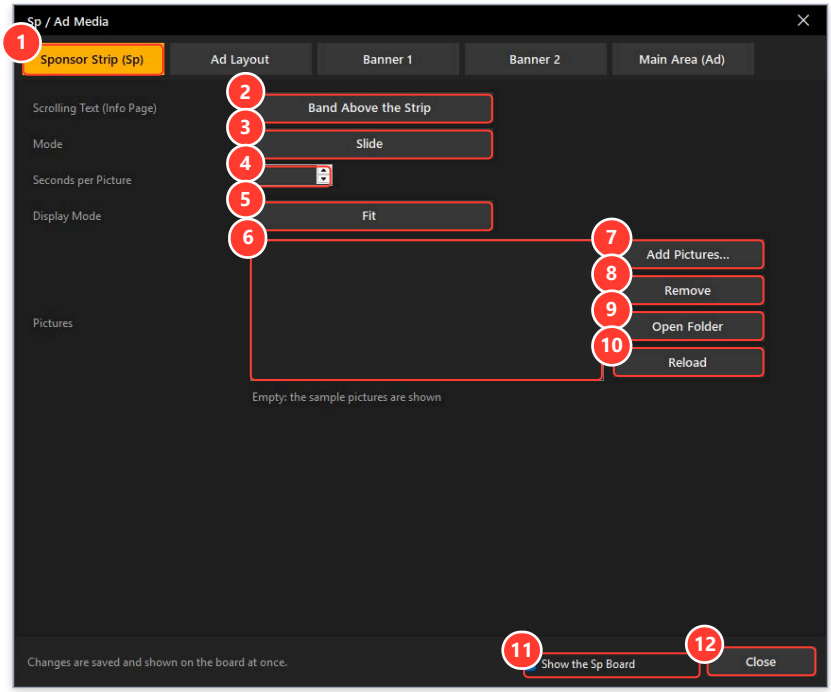


Figure 77. Sp / Ad Media – Sponsor Strip (Sp)

#	Control	What it does
1	Tabs	**Sponsor Strip (Sp)** – the strip of the Sp board; **Ad Layout** – how the Ad board is sliced; **Banner 1** / **Banner 2** – the content of the two Ad banners; **Main Area (Ad)** – the large advertising area. The open tab is amber.

#	Control	What it does
2	Scrolling Text (Info Page)	Where the scrolling text of the Info page runs: **Band Above the Strip** – in its own band of the design above the sponsor strip; **Inside the Strip** – it replaces the strip content while there is a text (with the strip's direction, speed, font size and colours) and the strip returns to its pictures when you click Clear on the Info page.
3	Mode	**Slide**, **Scroll Images**, **Scroll Text** or **Images + Text** (see the table above).
4	Seconds per Picture	Slide only: 2–120 seconds per picture (default 8).
5	Display Mode	Slide only: **Fit**, **Fill** or **Stretch**.
6	Pictures	The files of the strip's folder in file name order (pictures PNG, JPG, WEBP, SVG and videos MP4, WEBM). Select one or more (`Ctrl` / `Shift`+click) for Remove. The line below the list shows the folder, or – when it is empty – "Empty: the sample pictures are shown" (the sample sponsor pictures of the sport play).
7	Add Pictures...	Choose pictures and videos; they are copied into the folder (a file of the same name is replaced) and the board reloads.
8	Remove	Deletes the selected files from the folder after a confirmation.
9	Open Folder	Opens the folder in Windows Explorer – handy for renaming files to change their order.
10	Reload	Reads the folder again after you changed files in Explorer and sends the new playlist to the board.
11	Show the Sp / Ad Board	Opens or closes the board this tab belongs to (Sp for the Sponsor Strip tab, Ad for the other tabs), so you can watch every change live.
12	Close	Closes the dialog (also `Esc` or ×). There is no Save button: every change is saved and shown on the board at once.

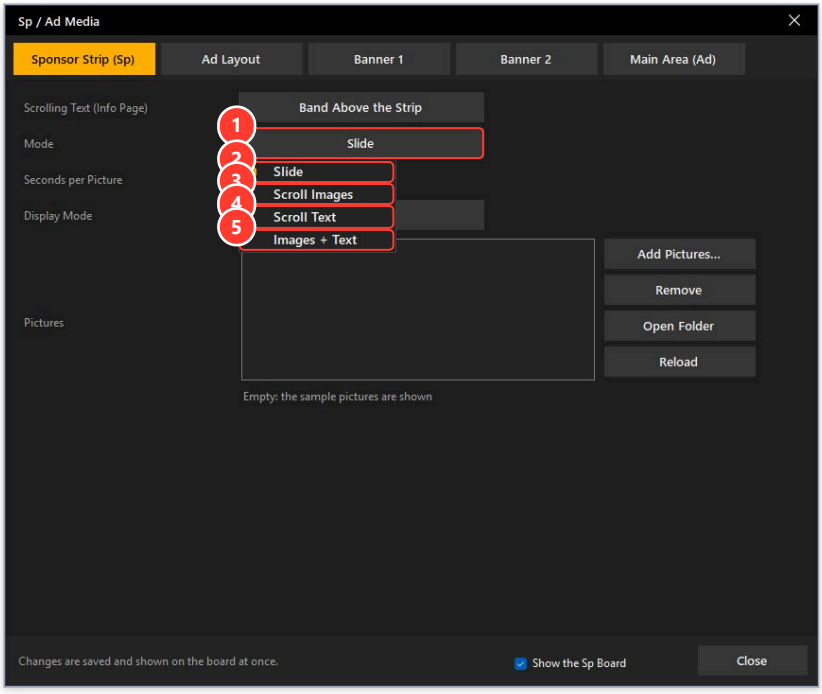


Figure 78. The Mode list of the Sponsor Strip (Sp)

#	Control	What it does
1	Mode field	Shows the mode of the strip; click to open the list.

#	Control	What it does
2	Slide	One picture or video after the other.
3	Scroll Images	All pictures side by side in an endless loop.
4	Scroll Text	The lines of the scroll text in an endless loop.
5	Images + Text	Pictures and lines alternating in one loop.

The Sp Strip on the Board

The same Sp board with four different strip settings:



Figure 79. Scroll Images – the sponsor pictures in an endless loop to the left

#	Control	What it does
1	Sponsor strip	Mode **Scroll Images**, Direction Left, Speed 5, Picture Height 80 %, Gap 14 %. Without a background colour the board shows through between the pictures.

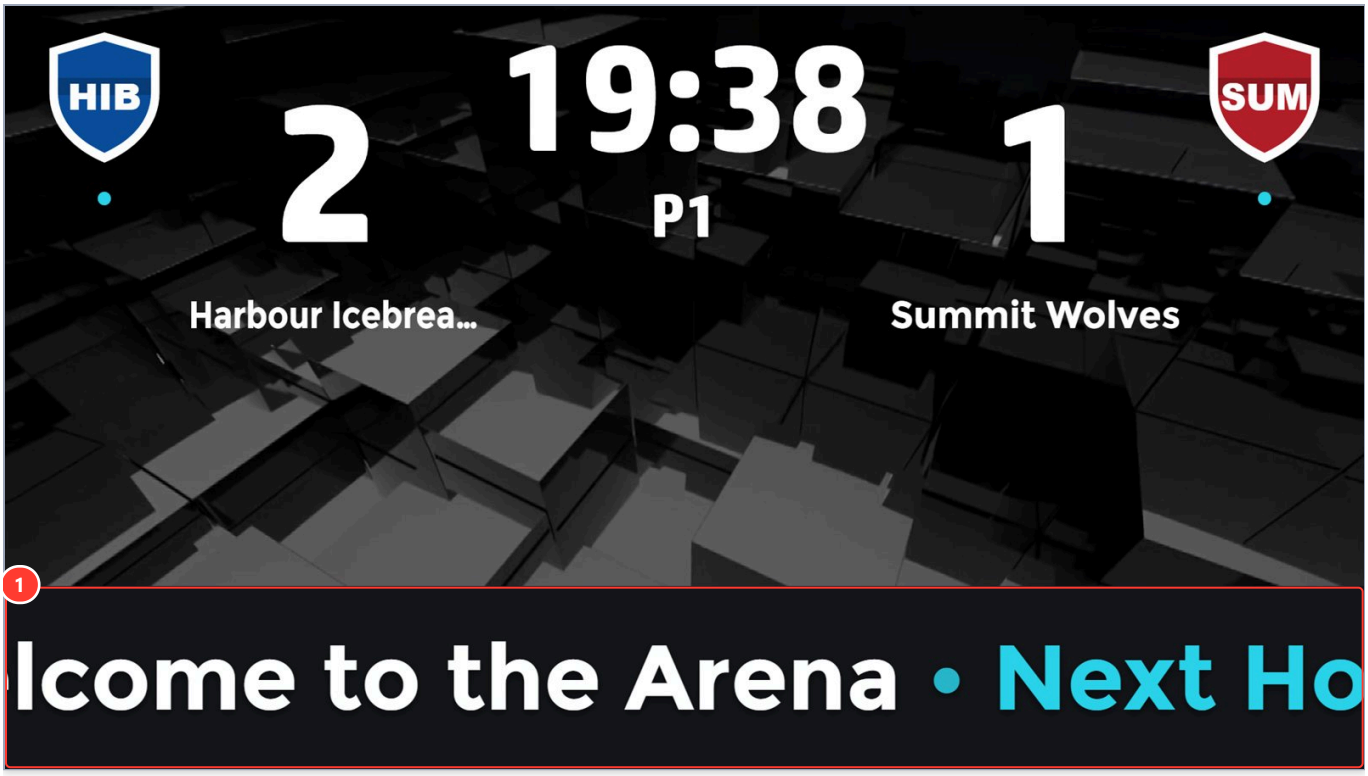


Figure 80. Scroll Text – three lines as segments, Colour 1 / 2 / 3 cycling, dot separator

#	Control	What it does
1	Text strip	Mode **Scroll Text**, Font Size 50 %, Separator Dot. The background is the design's panel colour (theme).

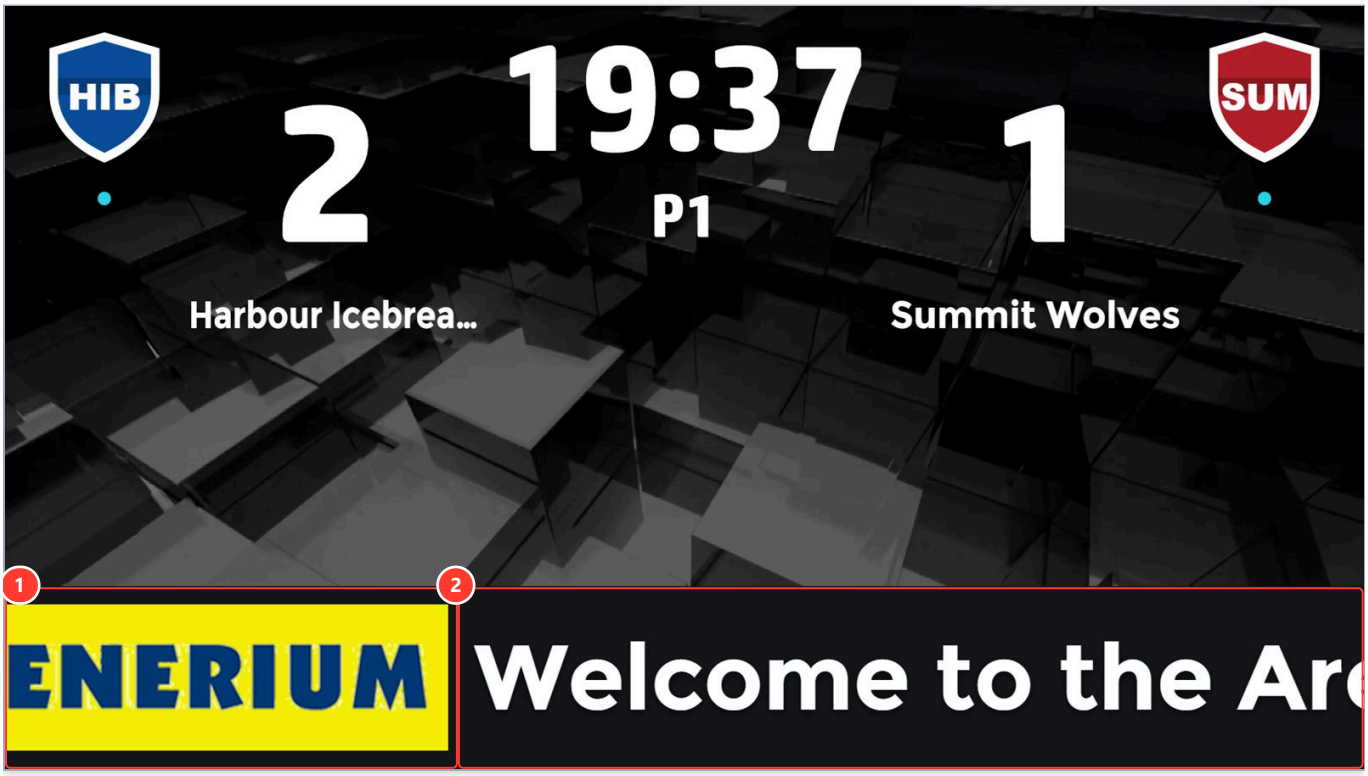


Figure 81. Images + Text – pictures and lines alternating

#	Control	What it does
1	Picture	A sponsor picture …

#	Control	What it does
2	Line	… followed by a line of the scroll text, then the next picture.

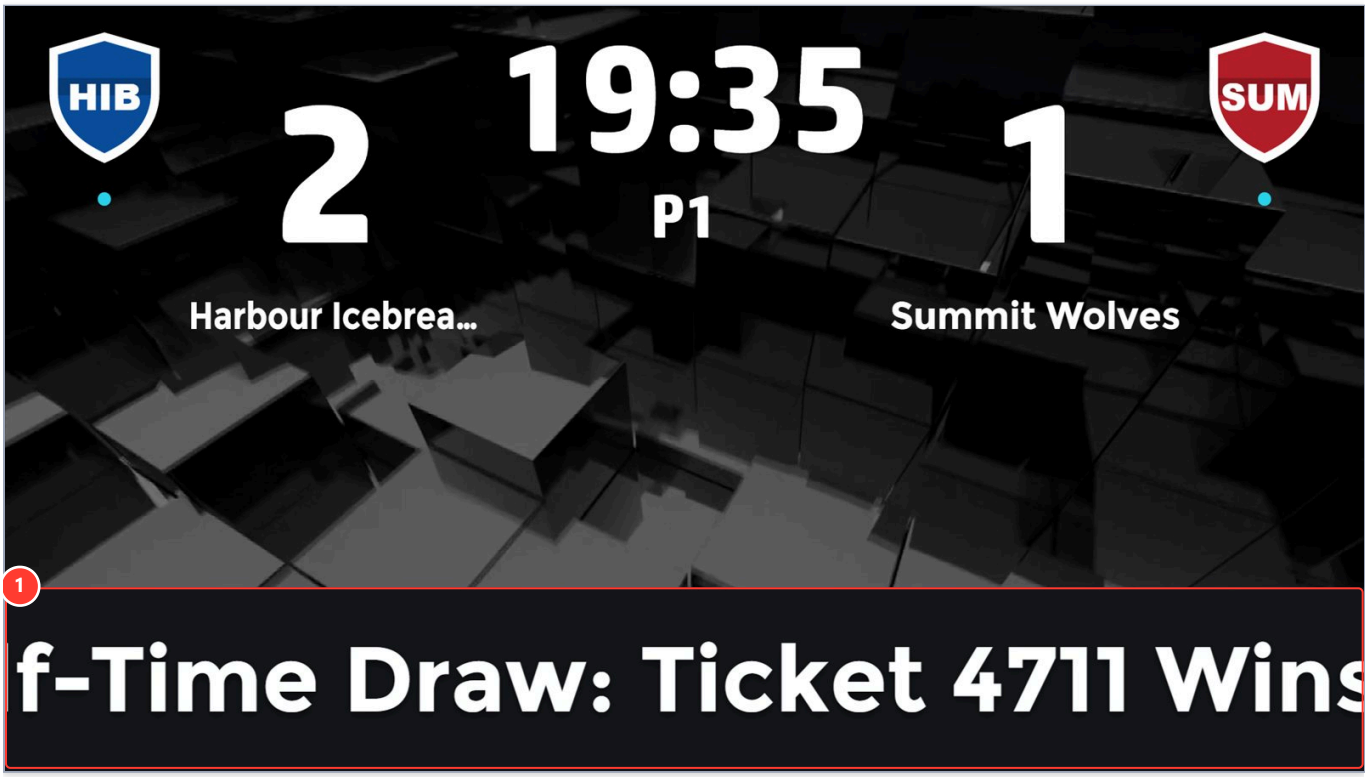


Figure 82. Scrolling Text (Info Page) set to Inside the Strip

#	Control	What it does
1	**Info page text in the strip**	While the Info page has a scrolling text, it runs inside the strip instead of the pictures. **Clear** on the Info page gives the strip back to its pictures.

Ad Layout

The Ad board is cut into slices: the **scoreboard**, up to two **banners** and the **main area** that takes what is left. This tab decides the sides and sizes:

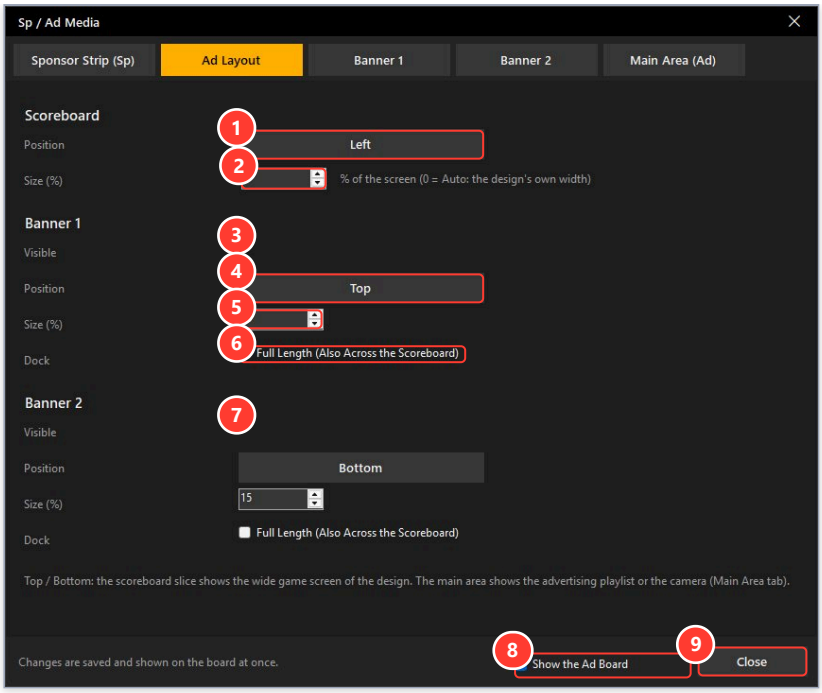


Figure 83. Sp / Ad Media – Ad Layout

#	Control	What it does
1	Scoreboard: Position	**Left** (default), **Right**, **Top** or **Bottom**. Top / Bottom show the wide game screen of the design (*Ad Game Wide*) across the screen.
2	Scoreboard: Size (%)	% of the screen width (left / right) or height (top / bottom), 10–70. **0** = Auto: the design's own column width (top / bottom: 30 %).
3	Banner 1: Visible	Shows banner 1. A hidden banner takes no room. Both banners are off by default.
4	Banner 1: Position	The side of the banner: Top (default for banner 1), Bottom (default for banner 2), Left or Right.
5	Banner 1: Size (%)	Thickness of the banner: 5–50 % of the screen height (top / bottom) or width (left / right). Default 15.
6	Banner 1: Dock	**Full Length**: the banner runs along the whole screen edge, across the scoreboard too. Off: it only covers the advertising side next to the scoreboard.
7	Banner 2	The same four settings for banner 2.
8	Show the Sp / Ad Board	Opens or closes the board this tab belongs to (Sp for the Sponsor Strip tab, Ad for the other tabs), so you can watch every change live.
9	Close	Closes the dialog (also `Esc` or ×). There is no Save button: every change is saved and shown on the board at once.

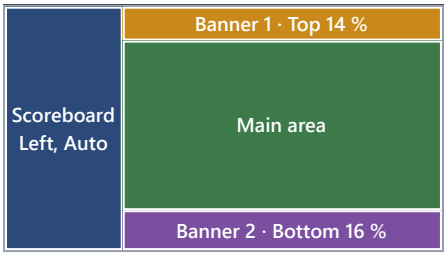
Tip: the content of each banner is set on its own tab (Banner 1, Banner 2), the main area on **Main Area (Ad)**.

How the Ad Board Is Sliced

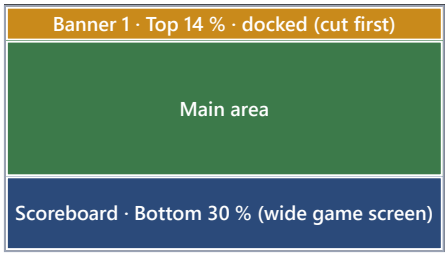
The board cuts the screen in a fixed order. Hidden banners take no room:

1. **Docked banners** (Full Length ticked) first: each takes its size along its whole screen edge.
2. Then the **scoreboard** slice on its side, with its size (or the design's own width).

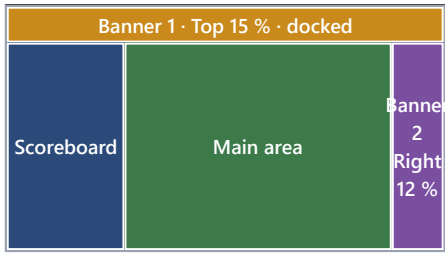
3. Then the **banners that are not docked**: they are cut only from what is left, so they run next to the scoreboard, not across it.
4. What remains is the **main area** (advertising playlist, camera or scroll).



A: banners not docked – they stop at the scoreboard



B: scoreboard across the bottom, docked banner over the full width



C: docked top banner, scoreboard left, side banner right

Ad Layout	Scoreboard	Banner 1	Banner 2	Main area
Factory settings	Left, Auto width	hidden	hidden	the rest (right part)
Example A (below)	Left, Auto (≈ 27 %)	Top 14 %, not docked: right of the scoreboard	Bottom 16 %, not docked: right of the scoreboard	between the banners
Example B (below)	Bottom 30 %, wide game screen	Top 14 %, docked: full width	hidden	the middle band
Side banner	Left, Auto	Right 12 %, not docked	hidden	between scoreboard and banner
LED strip 1920 × 480	Left 25 %	hidden	hidden	the rest of the strip

Two Examples



Figure 84. Example A – scoreboard left, banner 1 (Scroll Text) at the top, banner 2 (Scroll Images) at the bottom

#	Control	What it does
1	**Scoreboard**	Position Left, Size 0 (Auto): the design's own column width.
2	**Banner 1**	Top, 14 %, not docked: it starts right of the scoreboard. Mode Scroll Text.
3	**Main area**	Main Area (Ad) in Playlist mode: the advertising pictures and videos.
4	**Banner 2**	Bottom, 16 %, not docked. Mode Scroll Images (the sponsor pictures, because the banner2 folder is empty).

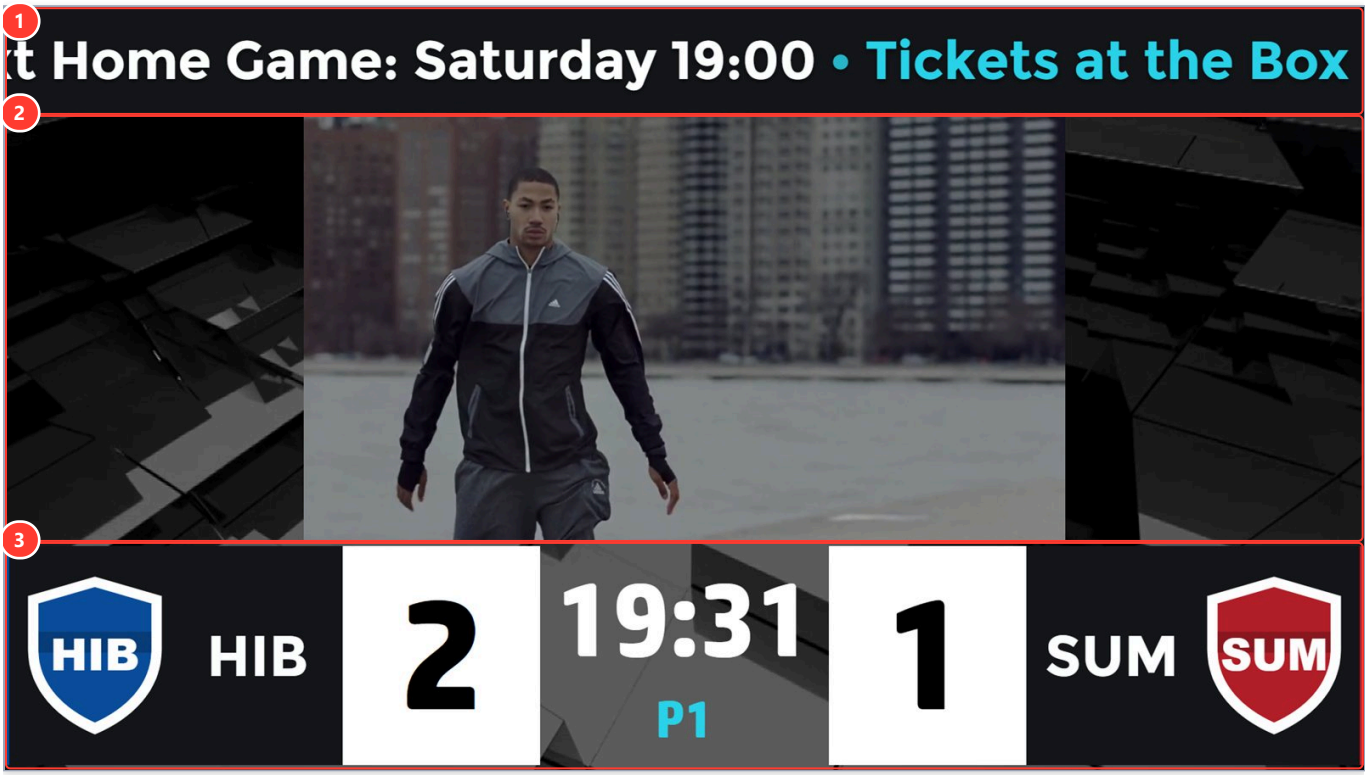


Figure 85. Example B – scoreboard across the bottom, banner 1 docked at the top

#	Control	What it does
1	**Banner 1 (docked)**	Top, 14 %, Full Length: it is cut first and runs across the whole width.
2	**Main area**	What is left between the banner and the scoreboard. The video keeps its shape (Display Mode Fit).
3	**Scoreboard (wide)**	Position Bottom, Size 30 %: the board shows the wide game screen of the design.

Banner 1 and Banner 2

The content of the two banners. Their place and size are on the Ad Layout tab. New banners start as **Scroll Images**:

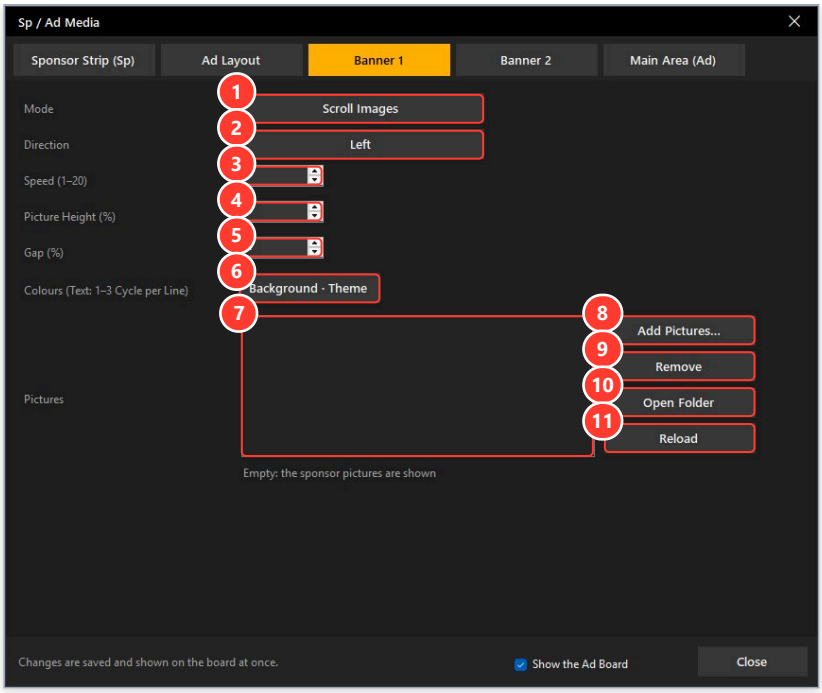


Figure 86. Sp / Ad Media – Banner 1 (Scroll Images)

#	Control	What it does
1	Mode	**Slide**, **Scroll Images**, **Scroll Text** or **Images + Text**.
2	Direction	Left, Right, Up or Down.
3	Speed (1–20)	Scroll speed (default 5).
4	Picture Height (%)	Height of the pictures in % of the banner's thickness (default 80).
5	Gap (%)	Space between the pictures (default 12).
6	Colours: Background	Background of the banner. Left-click chooses a colour, right-click returns to the theme. In the text modes the buttons Colour 1, Colour 2 and Colour 3 appear next to it.
7	Pictures	The files of the strip's folder in file name order (pictures PNG, JPG, WEBP, SVG and videos MP4, WEBM). Select one or more (`Ctrl` / `Shift`+click) for Remove. The line below the list shows the folder, or – when it is empty – that the sponsor pictures are shown.
8	Add Pictures...	Choose pictures and videos; they are copied into the folder (a file of the same name is replaced) and the board reloads.
9	Remove	Deletes the selected files from the folder after a confirmation.
10	Open Folder	Opens the folder in Windows Explorer – handy for renaming files to change their order.
11	Reload	Reads the folder again after you changed files in Explorer and sends the new playlist to the board.

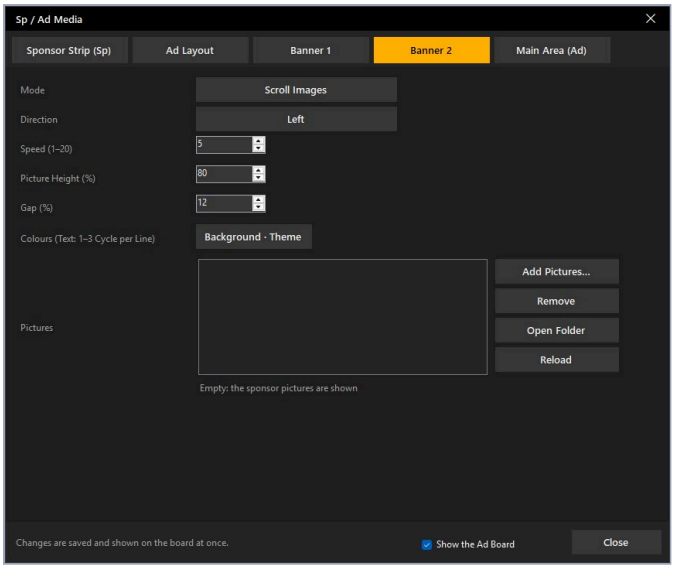


Figure 87. Banner 2 – the same fields for the second banner (folder data\media\banner2)

Main Area (Ad)

The large advertising area of the Ad board:

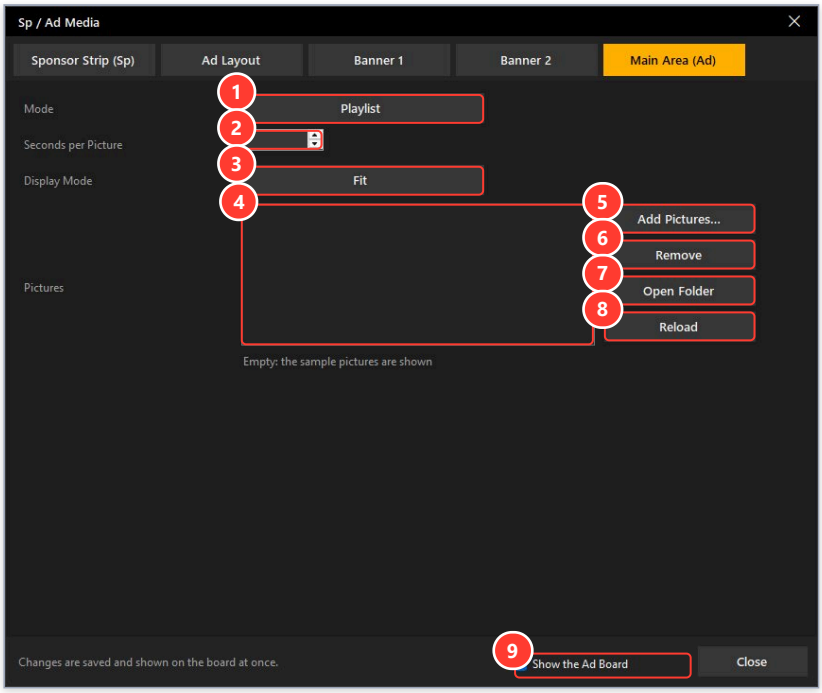


Figure 88. Sp / Ad Media – Main Area (Ad), Playlist

#	Control	What it does
1	Mode	**Playlist** (one picture or video after the other), **Camera** (the live picture of the PC's default camera or capture device), **Scroll Images** or **Scroll Text**.
2	Seconds per Picture	Playlist: how long each picture stays (default 8); videos play to their end.
3	Display Mode	Playlist and Camera: Fit, Fill or Stretch.

#	Control	What it does
4	**Pictures**	The files of the strip's folder in file name order (pictures PNG, JPG, WEBP, SVG and videos MP4, WEBM). Select one or more (`Ctrl` / `Shift`+click) for Remove. The line below the list shows the folder, or – when it is empty – "Empty: the sample pictures are shown" (the sample advertising media of the sport play).
5	**Add Pictures…**	Choose pictures and videos; they are copied into the folder (a file of the same name is replaced) and the board reloads.
6	**Remove**	Deletes the selected files from the folder after a confirmation.
7	**Open Folder**	Opens the folder in Windows Explorer – handy for renaming files to change their order.
8	**Reload**	Reads the folder again after you changed files in Explorer and sends the new playlist to the board.
9	**Show the Sp / Ad Board**	Opens or closes the board this tab belongs to (Sp for the Sponsor Strip tab, Ad for the other tabs), so you can watch every change live.

> **Tip** Camera needs a camera or a capture device that Windows sees (USB webcam, HDMI capture stick). It shows the default device; the camera picture is part of the board, so it also goes out over NDI.

Removing Pictures

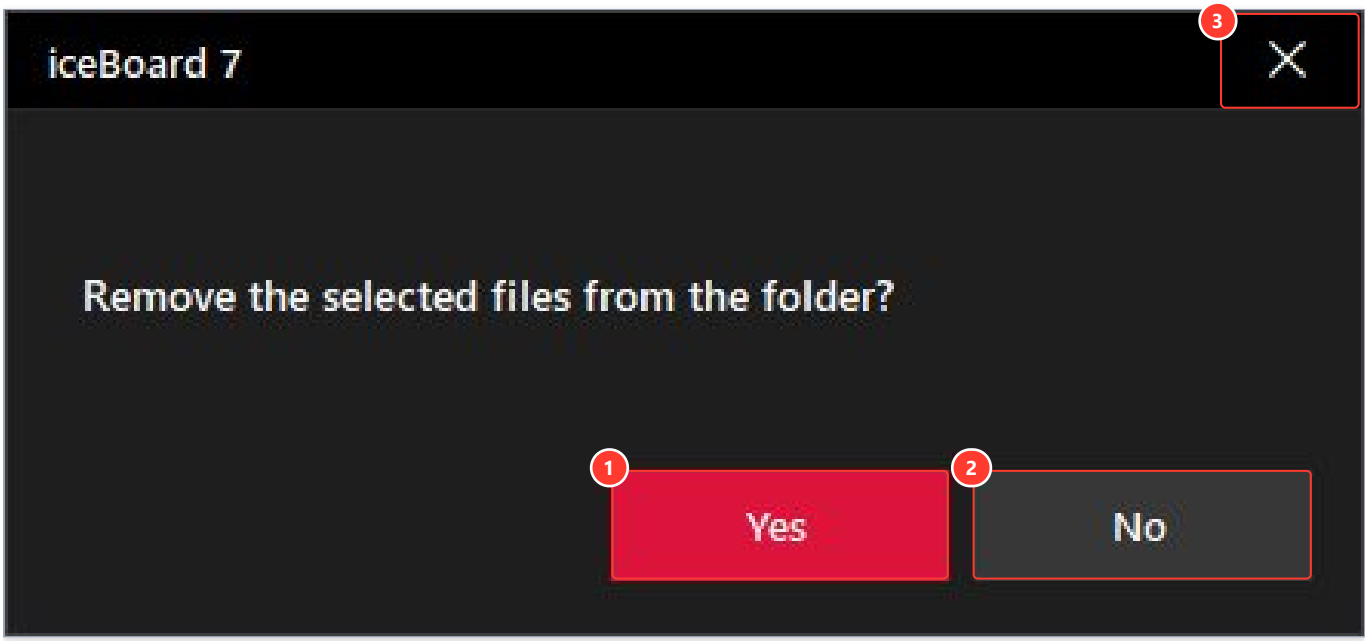


Figure 89. "Remove the selected files from the folder?"

#	Control	What it does
1	**Yes**	Deletes the selected files from the strip's folder (they are not moved to the recycle bin) and reloads the board.
2	**No**	Keeps the files.
3	**Close** (×)	The same as **No**. `Esc` also answers No.

13 Board Designs

Every sport comes with three master designs: **Arena** (black LED look with big digits and corner logos), **Broadcast** (header strip and team rows, the default of the CK output) and **Split** (team panels left and right of a centre column). A design contains all screens of all four outputs: St game and info screens, Sp, Ad (normal and wide) and the CK graphics.

Master designs are read-only. To change one, open it in the editor and save a copy: the copy is an **own design** that you can change, rename and delete. Program updates never change your own designs.

Preview Design (Design Gallery)

Click the design icon under CK on the output strip of the Game page. The gallery shows every design of the running sport, rendered live with the current match.

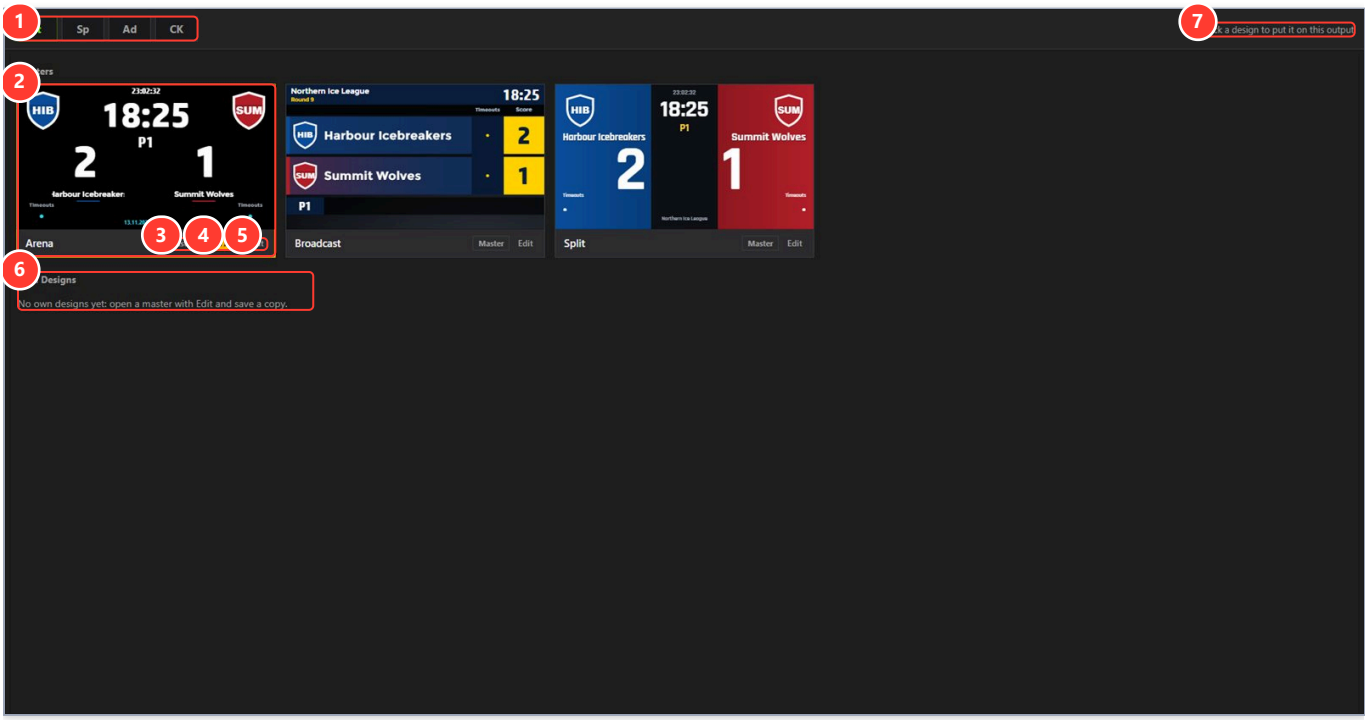


Figure 90. The design gallery

#	Control	What it does
1	St / Sp / Ad / CK	Choose the output whose designs you want to see. The output shown is green; the tooltip shows the full output name.
2	Design card	A live preview of the design's game screen for that output. **Click the card** (or press `Enter`) to put this design on the chosen output at once.
3	Master / Own	Whether the design is a factory master or one of your own designs.
4	On Air	Marks the design the output uses now (the card also has an amber frame).
5	Edit	Opens this design in the design editor.
6	Own Designs	Your own copies. Until you save a copy of a master, this part says that there are no own designs yet.
7	Hint	Reminder: a click on a design puts it on this output.

The gallery follows the match live. Close it with `Esc` or the window button. The design choice is saved per sport and output; it is the same choice as the Design list on the Outputs page.

The Design Editor

Open the editor with **Edit** in the gallery or **Edit Design** on the Outputs page. What you see on the canvas is exactly what goes on air.

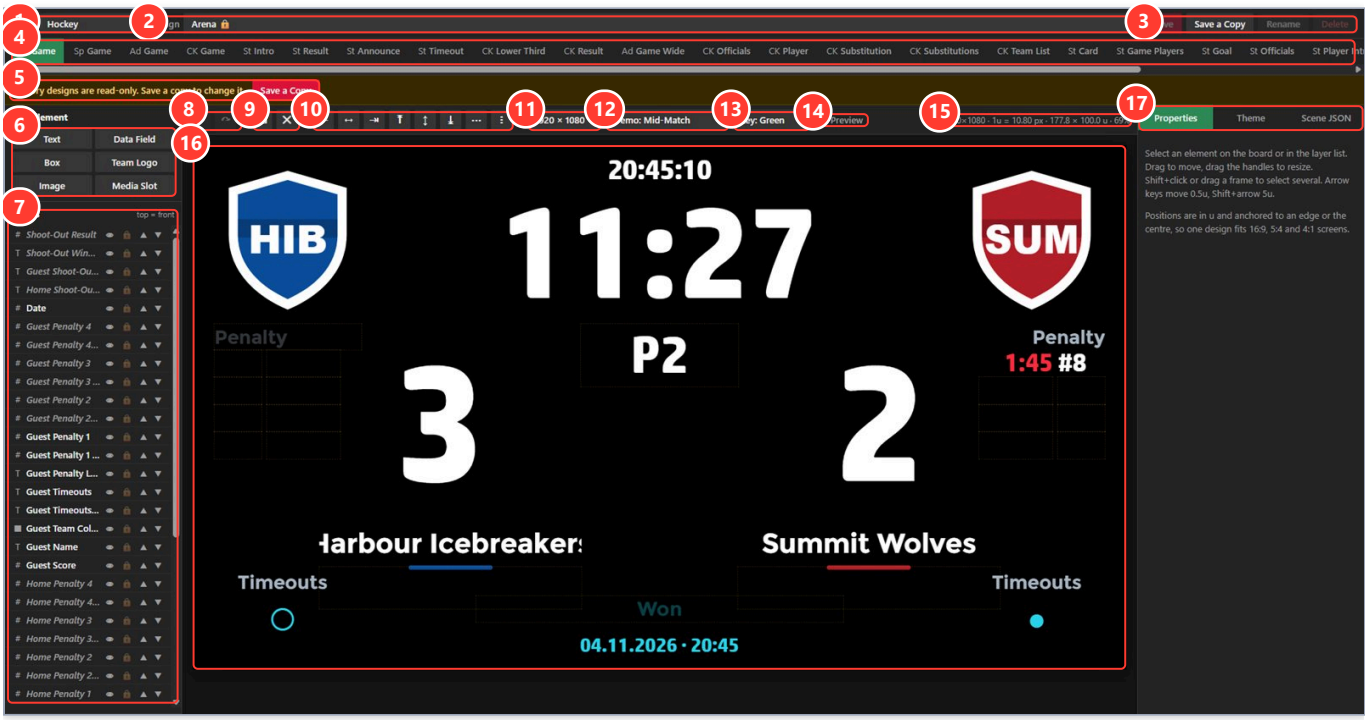


Figure 91. The design editor

#	Control	What it does
1	Sport	The sport whose designs are edited.
2	Design	The design to edit (masters and own designs). A lock marks a read-only master.
3	Save / Save a Copy / Rename / Delete	**Save** (`Ctrl` + `S`) stores the changes of an own design; outputs that use it update at once. **Save a Copy** asks for a name and creates a new own design. **Rename** and **Delete** work on own designs only (Delete asks first and cannot be undone).
4	Screens	All screens of the design: St Game, Sp Game, Ad Game, Ad Game Wide, CK Game, the info screens, St Game Players and the event graphics. Click a tab to edit that screen; the arrows scroll the row.
5	Read-only notice	Shown for factory masters: **Save a Copy** creates your own editable copy.
6	Add Element	Adds a **Text**, a **Data Field** (any value of the match: score, clock, names, fouls …), a **Box**, a **Team Logo**, an **Image** (up to 8 MB) or a **Media Slot** (the sponsor / ad playlist or a camera).
7	Layers	All elements of the screen, the top one in front. Per element: show / hide (eye), lock, bring forward ▲, send backward ▼. Click a name to select it; names in italics are hidden by a rule at the moment (e.g. penalty elements while no penalty runs).
8	Undo / Redo	`Ctrl` + `Z` / `Ctrl` + `Y`.
9	Duplicate / Delete	Duplicates the selected elements (`Ctrl` + `D`) or deletes them (`Del`).

#	Control	What it does
10	**Align and distribute**	Aligns several selected elements left, centre, right, top, middle or bottom, or spaces them evenly.
11	**Preview Size**	Checks the design at 1920 × 1080, 1280 × 1024, 1920 × 480 or 1080 × 1920. Positions are relative to the edges, so one design fits several screen shapes.
12	**Preview Data**	Sample match data on the canvas: a mid-match situation, or a special moment (penalties, timeouts, possession …) to check elements that only appear then.
13	**Key colour**	Background of CK screens in the editor: green, checker or grey.
14	**Preview**	Hides the selection frames and handles to see the screen as on air.
15	**Scale**	The preview size, the editor unit (1 u = 1 % of the smaller side), the screen in units and the zoom of the canvas.
16	**Canvas**	Click to select, drag to move, drag the handles to resize. `Shift`+click or drag a frame to select several. Arrow keys move by 0.5 units, `Shift`+arrow by 5.
17	**Properties / Theme / Scene JSON**	**Properties**: position, size, text, data field, font, colours and rules (e.g. turn red when the shot clock runs out) of the selected element. **Theme**: theme presets, digit and text font and the colour tokens – a colour change applies to every element and screen that uses it (also the theme colours of the Sp / Ad strips). **Scene JSON**: the screen as text, for advanced users (**Apply** checks and loads it).

> **Tip** Change colours in the **Theme** tab first: one change recolours the whole design on every screen. Use element properties only for single exceptions.

14 Settings

Open **Settings** ⚙ at the right end of the tab strip. All settings are stored in *data\config\settings.json*.

The Settings Page

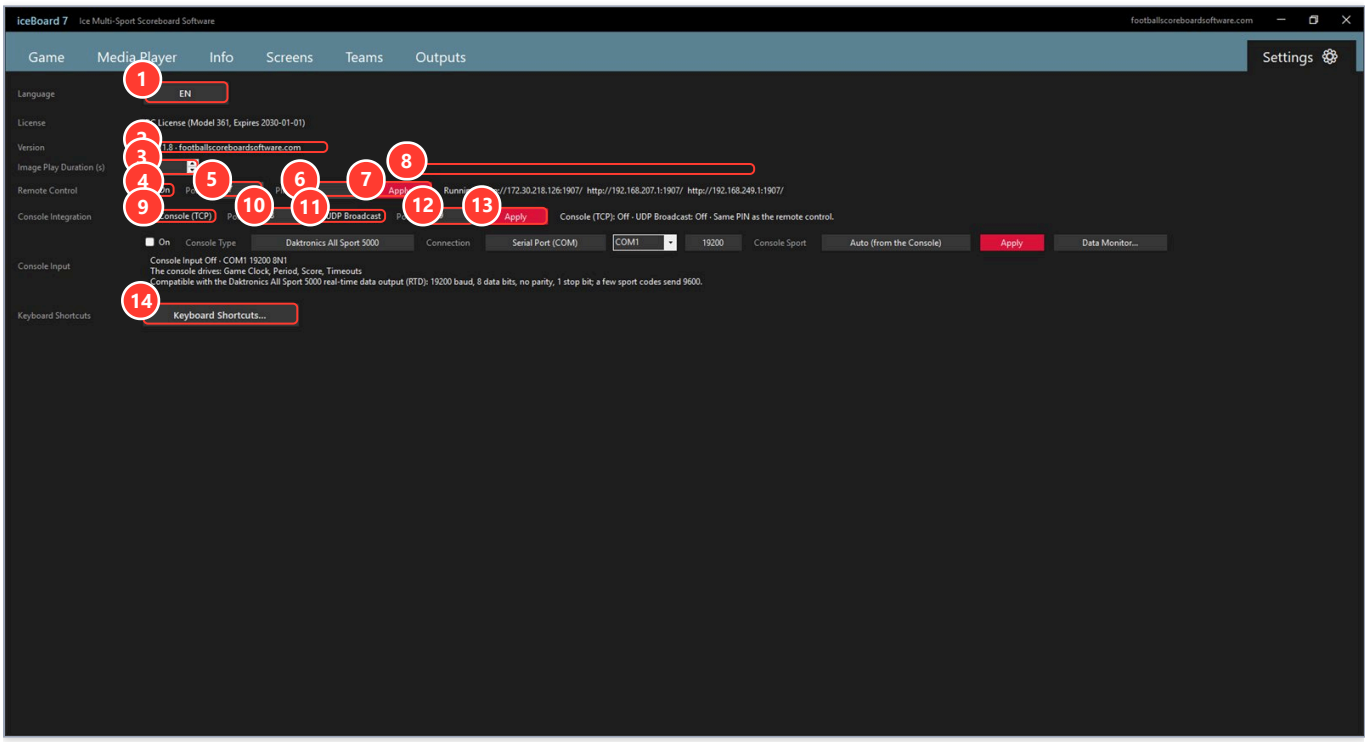


Figure 92. The Settings page

#	Control	What it does
1	**Language**	The language of the program, the board texts and the remote control pages (sign-in page, headings, buttons and questions on the phone follow it). Click to open the list of languages (the same list as on the right strip of the Game page). The new language is used after a restart.
2	**Version**	Program version and web site.
3	**Image Play Duration (s)**	How long a picture of a Media Player playlist stays on the board before the next clip (1–3600 seconds, default 5). Videos always play to their end.
4	**Remote Control: On**	The built-in web server for phones and tablets (and the HTTP API). On by default.
5	**Port**	The TCP port of the web server (default 1907).
6	**PIN**	The PIN a phone needs to sign in (four random digits are set on the first start). Empty = nobody can sign in. A new PIN applies to new sign-ins.
7	**Apply (remote)**	Saves the three values (On, Port, PIN) and restarts the server. The button sits on the same line as the text boxes.
8	**Status and addresses**	**Running** and the addresses to open on the phone (one per network adapter), or **Off** / **Not running** with the reason (e.g. the port is in use).
9	**Console (TCP)**	The console link for table consoles, statistics and automation software (default port 1908, off by default). Uses the same PIN.

#	Control	What it does
10	**Console port**	TCP port of the console link.
11	**UDP Broadcast**	Sends every change of the board as UDP datagrams to the local network (off by default). No PIN; listeners only receive.
12	**UDP port**	The UDP port of the broadcast (default 1909).
13	**Apply (console)**	Saves the console and UDP settings and restarts the services. The status line shows Off / Running (with the number of connected consoles).
14	**Keyboard Shortcuts…**	Opens the keyboard shortcut editor.

Choosing the Language

Click the language button at the top of the right strip on the Game page (or the Language field of the Settings page). The list shows every language by its code; the current one is ticked.

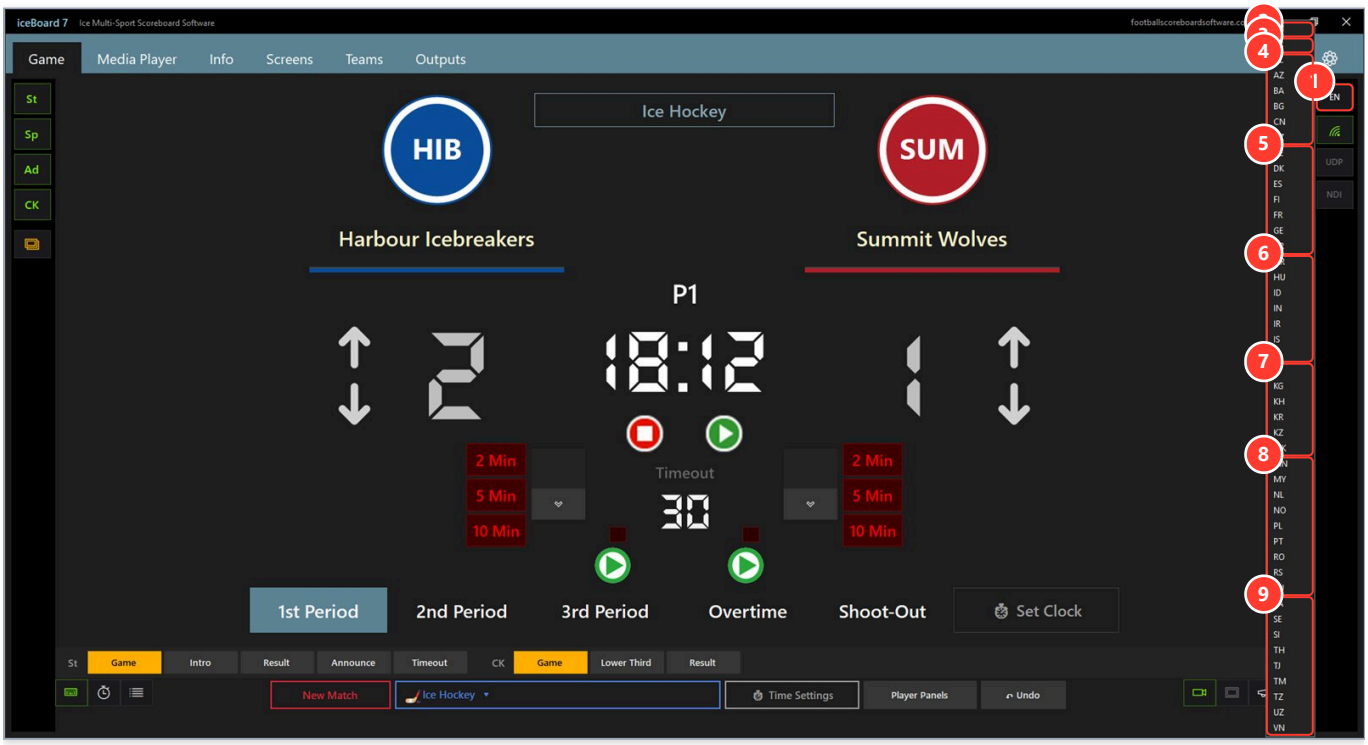


Figure 93. The language menu on the right strip

#	Control	What it does
1	**Language button**	Shows the current language code and opens the menu.
2	**EN**	English – the language of this guide and the fall-back for every text that a language file does not have.
3	**TR**	Turkish.
4	**AL · AZ · BA · BG · CN · CZ**	Albanian, Azerbaijani, Bosnian, Bulgarian, Chinese, Czech.
5	**DE · DK · ES · FI · FR · GE · GR**	German, Danish, Spanish, Finnish, French, Georgian, Greek.
6	**HR · HU · ID · IN · IR · IS · IT**	Croatian, Hungarian, Indonesian, Hindi, Persian (written right to left), Icelandic, Italian.

#	Control	What it does
7	JP · KG · KH · KR · KZ · MK	Japanese, Kyrgyz, Khmer, Korean, Kazakh, Macedonian.
8	MN · MY · NL · NO · PL · PT · RO · RS · RU	Mongolian, Malay, Dutch, Norwegian, Polish, Portuguese, Romanian, Serbian, Russian.
9	SA · SE · SI · TH · TJ · TM · TZ · UZ · VN	Arabic (written right to left), Swedish, Slovenian, Thai, Tajik, Turkmen, Swahili, Uzbek, Vietnamese.

Restart for the New Language

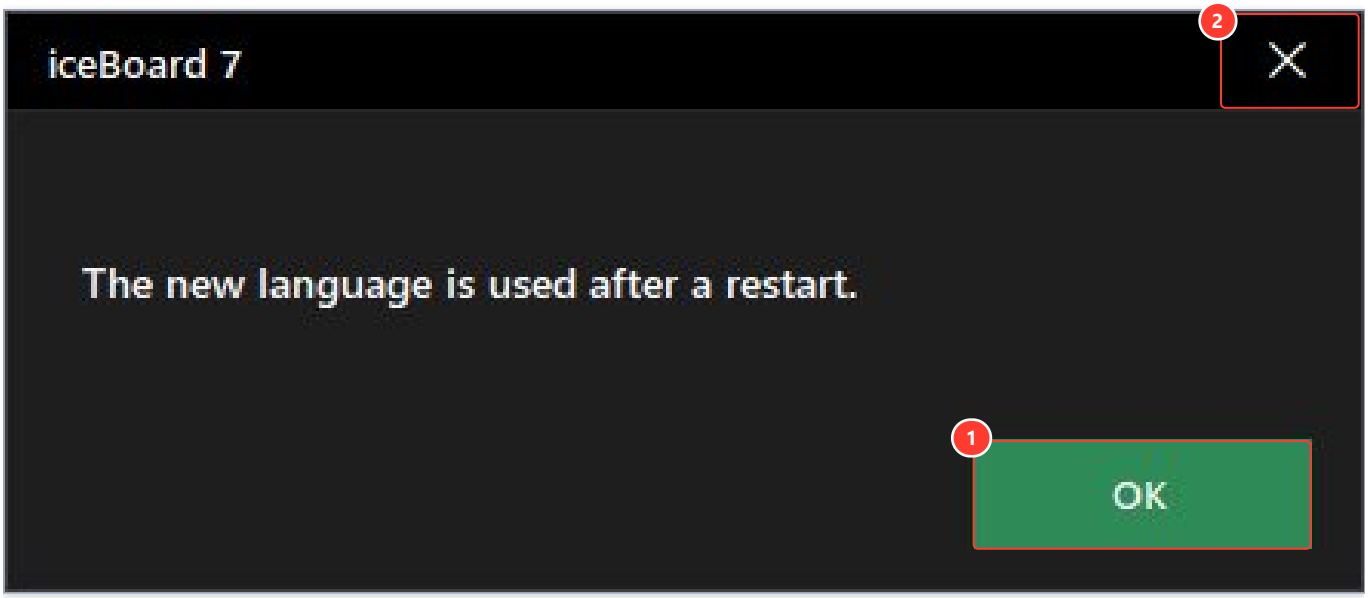


Figure 94. “The new language is used after a restart.”

#	Control	What it does
1	OK	Closes the message. The choice is already saved; close iceBoard 7 and start it again to switch the program, the boards and the remote to the new language.
2	Close (×)	The same as OK.

15 Keyboard Shortcuts

iceBoard 7 has global keyboard shortcuts: they work even while vMix, CasparCG, a browser or any other program has the focus, so you can score from a second keyboard or a numeric keypad while you work in another window. Only the F-keys `F1`–`F12` and the numeric keypad (`NumLock` on: `0`–`9`, `/`, `*`, `-`, `+`, `,`) can be used – never letters or the normal digits. The key still reaches the other program too.

Open the editor with the keyboard icon at the bottom left of the Game page or **Keyboard Shortcuts…** on the Settings page.

The Shortcut Editor

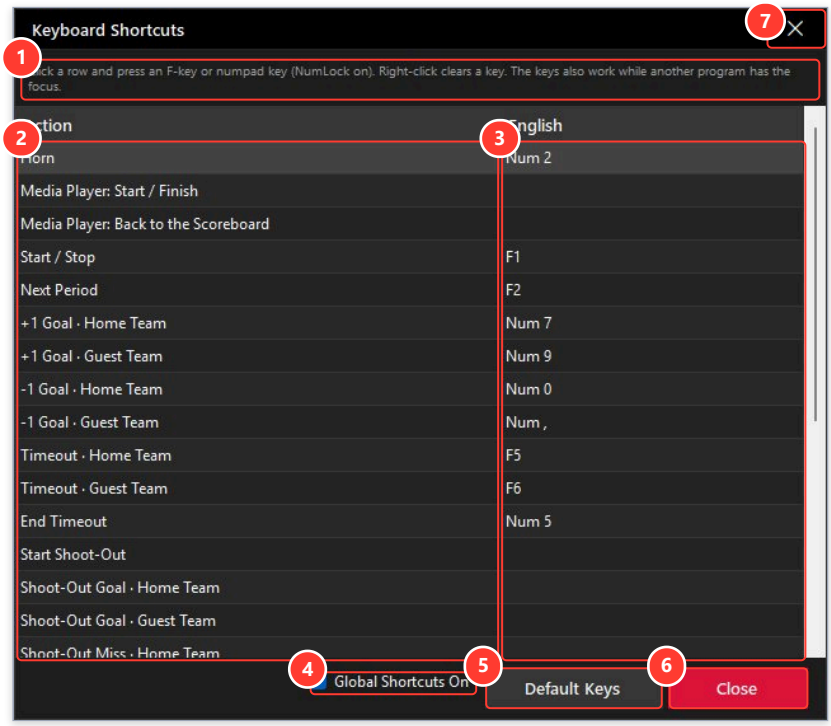


Figure 95. The keyboard shortcut editor

#	Control	What it does
1	**Help line**	How to assign and clear keys.
2	**Action**	Every action of the running sport and discipline, per team where it belongs to a team, plus the Horn. The names are the ones of the panel and the remote (*+2 Goal*, *Play Clock 40*, *Centre Pass* …). Actions that reset the match have no key, and actions that need a typed value or a choice are not listed (Set Clock, Added Time, Ball On, a cricket delivery or revised target, the lane times and lane status of swimming, the awards, dive selection and dive change of diving): use the panel or the remote for them.
3	**Key**	**Click a row**, then press an F-key or a numpad key: the key is assigned ("Press a Key…" is shown while waiting). A key belongs to one action only; it is taken away from its old action. **Right-click** a row (or press `Delete`) to clear its key. `Esc` first cancels waiting, a second `Esc` closes the window.
4	**Global Shortcuts On**	Switches all shortcuts on or off. While they are off you can still assign keys here.
5	**Default Keys**	Replaces the keys of this sport with the default keys (after a confirmation, below).

#	Control	What it does
6	**Close**	Closes the editor. Keys are saved at once.
7	**Close** (×)	The same as Close.

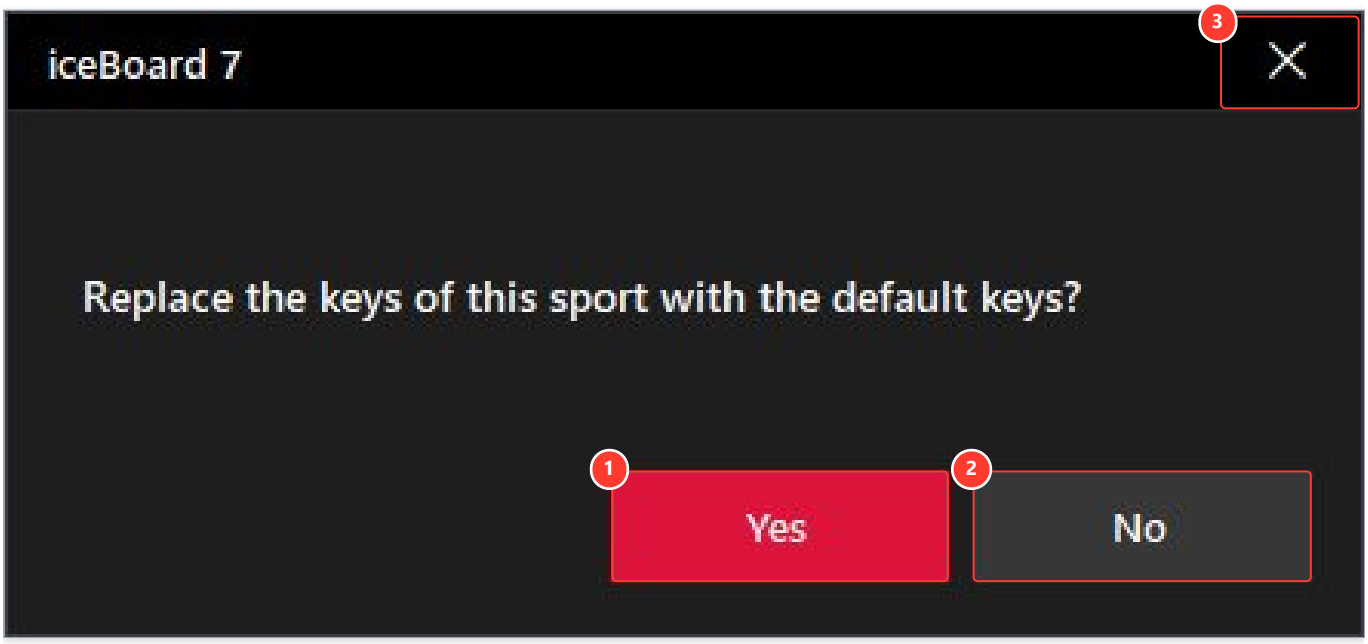


Figure 96. “Replace the keys of this sport with the default keys?”

#	Control	What it does
1	**Yes**	Every key of the running sport goes back to the default below; your own keys of this sport are lost. Other sports keep their keys.
2	**No**	Keeps your keys.
3	**Close** (×)	The same as **No**. `Esc` also answers No.

Default Keys

The keys are saved per sport in *data\config\hotkeys.json*. The default keys (when the sport has the action):

Key	Default action
`F1`	Start / stop the game clock
`F2`	Next period
`F3` / `F4`	Shot clock (American football: play clock) full reset / short reset. Where the short reset equals the full time (for example 30 / 30) there is only one reset action and `F4` stays free.
`F5` / `F6`	Timeout home / guest
`F7` / `F8`	Foul +1 / −1 home
`F9` / `F10`	Foul +1 / −1 guest
`F11`	Change possession (netball: Centre Pass)
`F12`	Undo

Key	Default action
`Num 7` / `Num 4` / `Num 1`	Home: first / second / third score type (e.g. +1 / +2 / +3); set sports: `Num 7` point home, `Num 1` point home −1
`Num 9` / `Num 6` / `Num 3`	Guest: the same score types; set sports: `Num 9` point guest, `Num 3` point guest −1
`Num 0` / `Num /` / `Num −`	Home: take back the first / second / third score type
`Num ,` / `Num *` / `Num +`	Guest: take back the first / second / third score type
`Num 5`	End the timeout (set sports)
`Num 2`	Horn

> **Note** While you type in a text box of iceBoard 7 (team names, Info page, time settings), the numpad types digits and does not score. The shortcuts are switched off when you untick Global Shortcuts On.

The Actions of Each Sport

The editor lists the actions of the running sport, so it looks different for every sport:

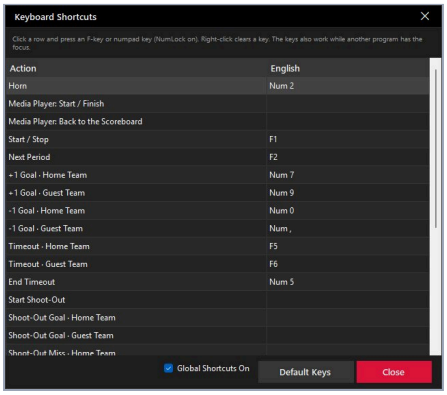


Figure 97. Hockey

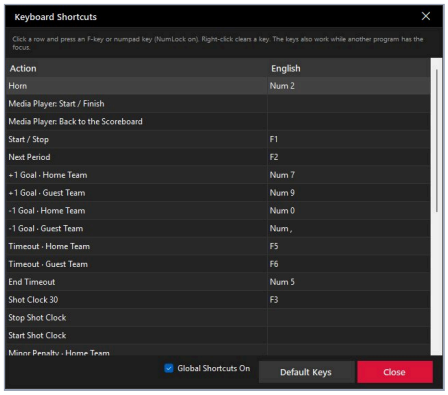


Figure 98. Ringette

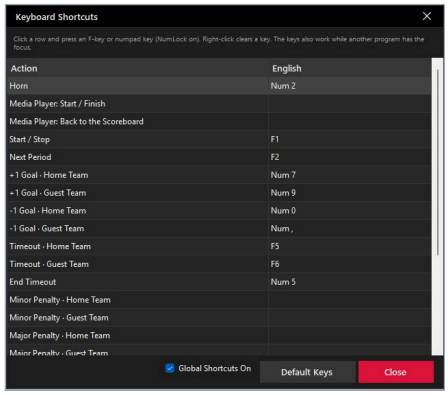


Figure 99. Broomball

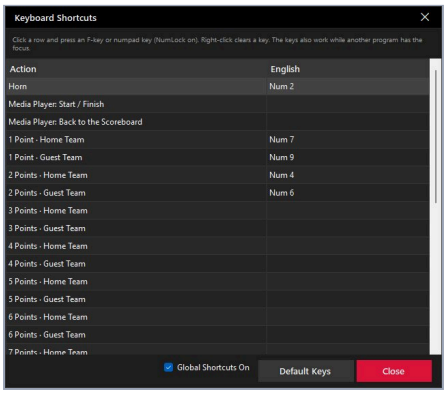


Figure 100. Curling

16 Remote Control

Any phone, tablet or second PC on the same network can control the scoreboard in its web browser – no app to install. The built-in web server is on by default. The remote builds its buttons from the running sport and discipline, so one page serves every sport; the buttons of each sport are shown in the chapter of that sport.

Connecting a Phone or Tablet

1. Connect the phone to the same network (Wi-Fi) as the scoreboard PC.
2. Open **Settings** on the scoreboard PC. The **Remote Control** row shows **Running** and one or more addresses such as *http://192.168.1.50:1907/*, and the **PIN**.
3. Type that address into the phone's browser (use the address of the adapter that is on the phone's network).
4. Enter the PIN on the number pad and press ✓.
5. The remote opens with the running sport. Score, clock and period follow the scoreboard live.

> **Tip** Add the page to the home screen of the phone (browser menu → *Add to Home Screen*): it then opens full screen like an app.

Signing In

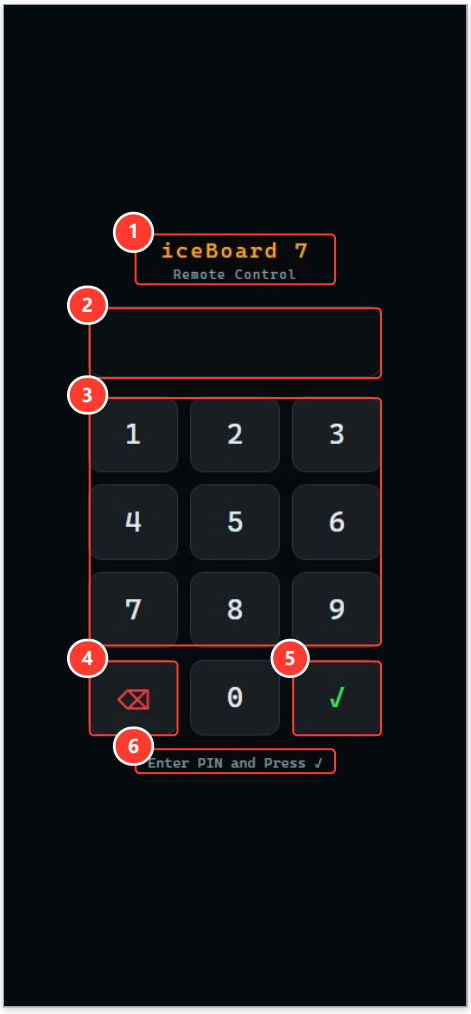


Figure 101. The sign-in page on a phone

#	Control	What it does
1	**Title**	The product name (iceBoard 7) and *Remote Control*: you know at once which scoreboard you are signing in to.
2	**PIN display**	Shows a dot for every digit you typed (up to 8). The PIN itself is never shown.
3	**Number pad**	Tap the digits of the PIN. On a PC the number keys, `Backspace` and `Enter` work too.
4	**⌫ Delete**	Deletes the last digit.
5	**✓ Sign In**	Sends the PIN. Right: the panel opens. Wrong: the line below says so.
6	**Hint line**	“Enter PIN and Press ✓”, “Signing In…”, a wrong PIN, “No Connection to the Scoreboard”, or the lockout countdown “Too Many Wrong PINs. Wait … s”. These texts, like every text of the remote pages, are in the language of the program (see *Settings*).

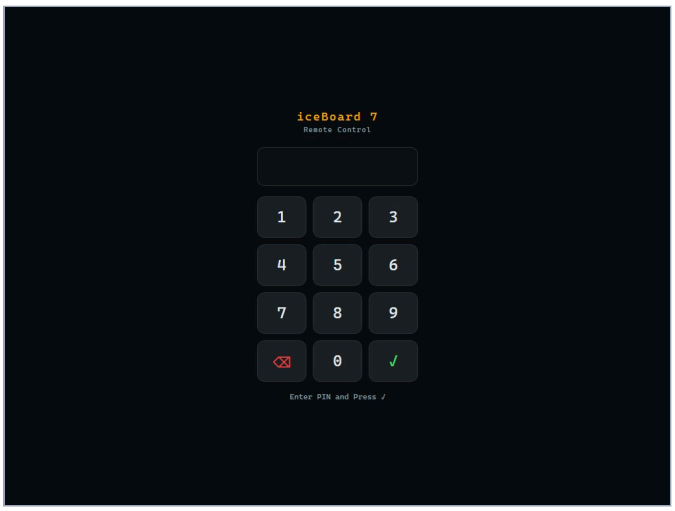


Figure 102. The same page on a tablet

- After five wrong PINs from one device it is locked for 30 seconds; every further wrong PIN doubles the wait, up to 15 minutes. The pad is disabled while the countdown runs.
- The sign-in lasts while the browser tab is open; a device that is still signed in skips the PIN page. Closing the tab ends it.
- An empty PIN in Settings switches the remote sign-in off.

The Remote Panel

On a tablet (or a phone held sideways, from 760 pixels width) the two teams stand side by side with two buttons per row, next to the Match column; on a phone held upright the two teams stay side by side and the Match and Match Control sections follow below, so you scroll down to them. The layout is the same in every sport:

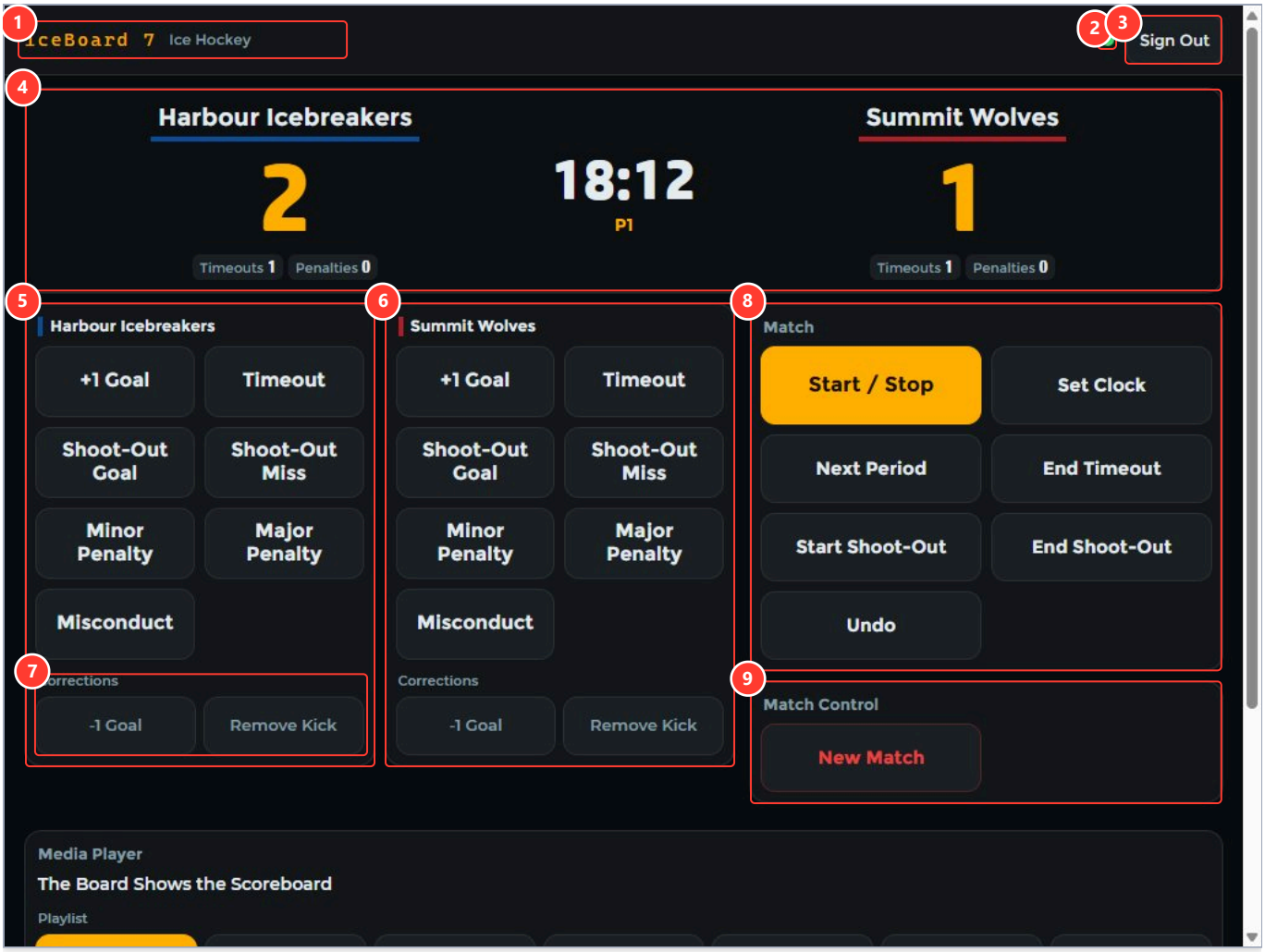


Figure 103. The remote panel on a tablet (Hockey)

#	Control	What it does
1	**Title and sport**	The product name (iceBoard 7), then the running sport and discipline (shown once when the discipline name already contains the sport, e.g. just *Football*; a long text takes two lines). The page rebuilds itself after a new match or a change of sport.
2	**Connection dot**	Green while the remote receives the scoreboard; red when the connection is lost (it reconnects by itself).
3	**Sign Out**	Asks “Sign Out?” and returns to the PIN page.
4	**Score**	Team names in their colours (a long name takes two lines instead of being cut), scores, clock, period, shot clock and chips such as fouls, timeouts or possession – live from the scoreboard. A **Penalties** chip (the number of running penalties) appears only in sports with timed penalties; netball shows **Centre Pass** instead of Possession.
5	**Home team**	The actions of the home team (goals or points, fouls, timeouts, cards …), headed by the team name (two buttons per row on a tablet, one on an upright phone). A score button shows its value once: *+2 Goal*, *+6 Goal*, *+1 Free Throw*. A long label wraps between words onto a second line.
6	**Guest team**	The same actions for the guest team.
7	**Corrections**	The −1 actions of the team (take back a goal, a foul, a card …), small so they are not hit by mistake.

#	Control	What it does
8	**Match**	Actions that belong to the match: **Start / Stop** (amber), Set Clock, Next Period, shot clock, timeouts, Undo … Actions that need a value (Set Clock) open an input sheet.
9	**Match Control**	Actions that reset or end something (**New Match** …). They always ask for a confirmation and cannot be undone from the remote.

- Every button does exactly what the same control on the panel does, including Undo. Several devices can be connected at the same time, also together with the operator at the PC.
- A refused action (for example a timeout when none is left) shows its reason in a red message at the bottom.
- The remote pages use the language of the program: headings (Match, Corrections, Match Control), the action labels, the chips, the sheets (OK / Cancel, Yes / No) and the messages are shown in the language chosen in Settings; the browser tab shows the product name and the sport.
- Swimming and diving have their own remote view (heat and lanes, or diver, judges and standings).
- At the end of the panel the **Media Player** block starts and stops the clips of the Media Player (see *Media Player*).

Running Penalties on the Remote

In sports with time penalties the phone lists the running penalties of a team under its buttons: number, time left and a red ✕ that takes exactly that penalty off early (the same as the ✕ on the Game page). The list appears only while a penalty runs.

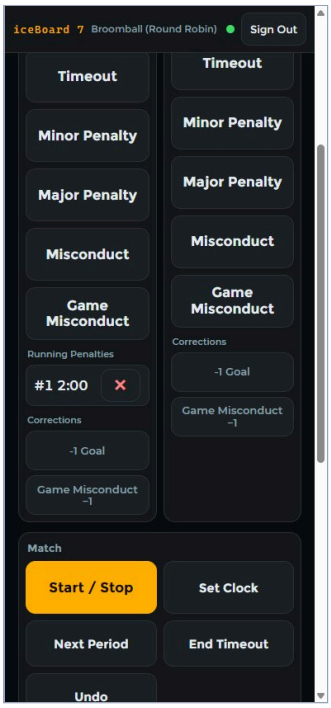


Figure 104. Broomball: a running penalty on the phone

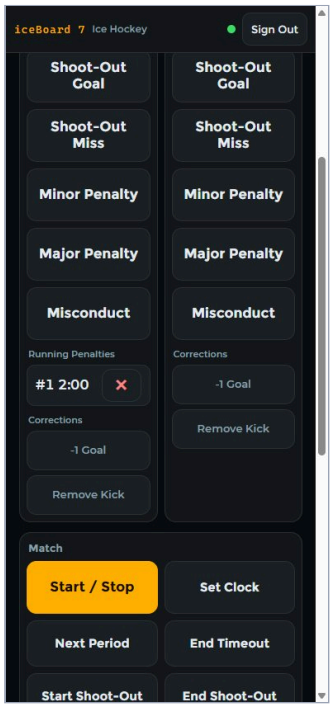


Figure 105. Hockey: a running penalty on the phone

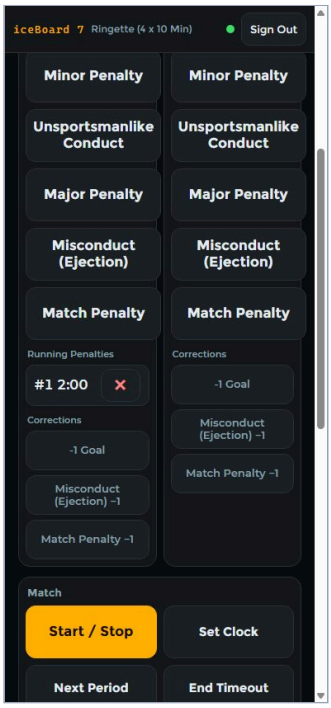


Figure 106. Ringette: a running penalty on the phone

Input and Confirmation Sheets

Some buttons need more than a tap. The remote then shows a sheet at the bottom of the screen:

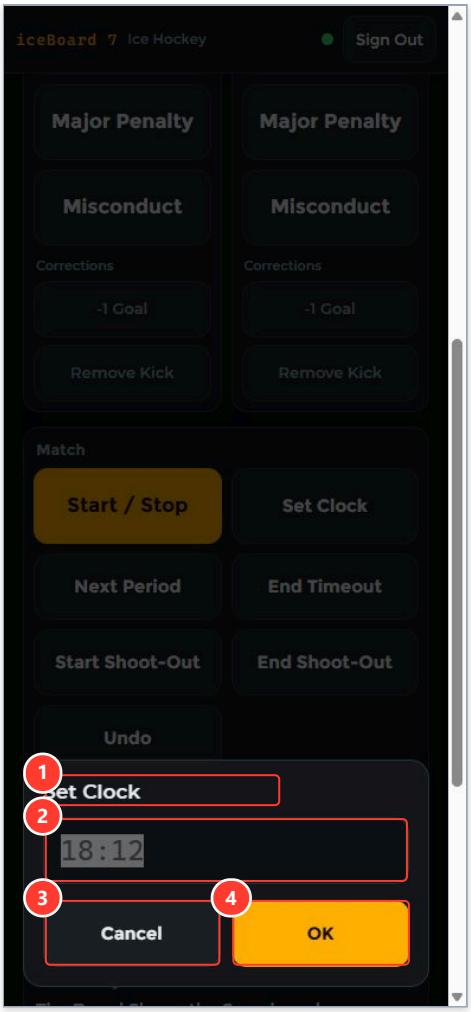


Figure 107. An input sheet (Set Clock) on a phone

#	Control	What it does
1	**Title**	The action, with the team where it belongs to one.
2	**Input**	Type the value (Set Clock: *m:ss*, the current time is filled in and selected). The phone shows its number keyboard. Where the value has a format of its own, the sheet shows an *Example:* … line above the box.
3	**Cancel**	Closes the sheet without a change (so does a tap outside the sheet).
4	**OK**	Sends the value (also `Enter`).

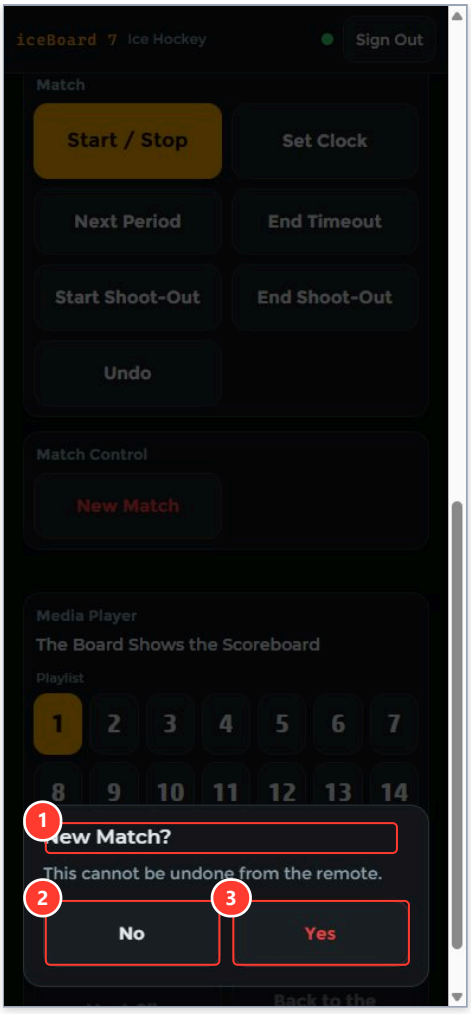


Figure 108. The confirm sheet of a Match Control action on a phone

#	Control	What it does
1	**Question**	The action with a question mark, and “This cannot be undone from the remote.”
2	**No**	Nothing happens.
3	**Yes**	Runs the action (red: it resets or ends something).

17 Data Exchange

Besides NDI (see *Outputs*), iceBoard 7 offers three data channels for other software and devices. They are the same in every scoreboard product of the family and are described for developers in the separate integration API document.

Channel	Default	Switch	Use it for
HTTP API	TCP 1907	Settings → Remote Control (on by default)	Scripts, web pages, graphics systems that poll the state (vMix data source, CasparCG templates) and send commands. Needs the PIN.
Console link	TCP 1908	Settings → Console Integration → Console (TCP)	Table consoles and statistics software: one connection for many commands and the live state. Same PIN and the same lockout as the remote.
UDP broadcast	UDP 1909	Settings → Console Integration → UDP Broadcast, or UDP on the right strip	LED controllers and displays that only listen: every change is sent as JSON to the local network, no sign-in.

All channels use the same commands as the panel (for example *score.add*, *clock.toggle*, *timeout.take*) and the same data keys as the board designs (for example *home.score*, *clock.text*, *period.name*, *home.fouls*). The list of actions and keys of the running discipline is available from the HTTP API (*/api/catalog*).

> **Note** Commands only change the score with a POST request; a plain web link can never change the board. Allow TCP 1907 / 1908 in the Windows firewall of the scoreboard PC when other devices connect. UDP broadcast does not cross routers.

18 Connecting a Scoreboard Console or Timing System

iceBoard 7 can take the clock, the scores and the results from the scoreboard console or the timing system that runs the match or the race: the console operator works as always, and iceBoard 7 shows the values on its boards with its own designs, logos, player lists, info screens, sponsors, the CK overlay and NDI. One console type at a time (Settings → Console Input → Console Type); the types offered are those of the iceBoard 7 sports.

> **Note** Every console type is **compatible with** the named product only: iceBoard 7 is not made, endorsed or supported by the console makers and shows no logos. The drivers were written from public documents and tested with simulators of the consoles. Test the Console Input with your console before the first match (each brand section ends with a short test), and record a data log for support if anything differs.

Console Types in iceBoard 7

Console type in Settings	Connection	Sports it drives
Daktronics All Sport 5000	RS-232 19200 8N1 (J5 / J6 / J-box) or a serial-to-Ethernet converter	All the team sports in the table above
Stramatel 452 (TV Interface)	RS-485 19200 8N1 (an RS-485 to USB adapter)	Basketball, Netball, Handball, Futsal, Floorball, Hockey, Ringette, Broomball, Beach Soccer, Volleyball and its beach / snow / foot variants
Bodet Scorepad	the Scorepad connects to this PC over the network (or RS-232 9600 8N1)	Basketball, Handball, Hockey (ice, para, indoor), Floorball, Ringette, Broomball
Kazo Vision Ultra Score (Data Out)	UDP broadcast, port 2800	Swimming, Diving, Water Polo, Basketball, Handball, Futsal, Ice Hockey (also Ringette, Broomball), Volleyball, Beach and Snow Volleyball

Compatible with Daktronics All Sport 5000

Many sports halls already have a Daktronics All Sport 5000 control console on the scorer's table. iceBoard 7 can read the console's **real-time data output** (RTD): the console operator runs the clock and the scores on the console as always, and iceBoard 7 shows them on its boards – with its own designs, logos, player lists, info screens, sponsors, the CK overlay and NDI.

> **Note** **Compatible with the Daktronics All Sport 5000.** iceBoard 7 is not made or supported by Daktronics. The console's data format is not published as an open standard; the Console Input was built from public documentation (the Daktronics *All Sport 5000 Series Enhanced RTD Reference Manual* ED-12483 and the All Sport 5000 operation manual ED-11976) and from open-source projects that read the same output, and it was tested with a console simulator. Please test it with your console before the first match (see *First Test with a Real Console* below).

What You Need

- An All Sport 5000 console with its sport insert, and its junction box (J-box) or the console's own I/O connector.

- A serial connection to the PC: the console's RTD is an RS-232 signal on its 9-pin **J5 Computer Port** / 25-pin **J6 I/O Port** and, through the 25-pin J-box, the "All Sport RS-232 data". Use a USB-RS-232 adapter (FTDI or Prolific chip) and a straight serial cable; the J6 port needs a 9-pin to 25-pin cable. Some installations bring the RTD as a current loop (pins 22 + and 7 – of the 25-pin connector) to a signal converter – then use that converter's RS-232 or USB output.
- Or a serial-to-Ethernet converter (serial device server) next to the console: iceBoard 7 then connects over the network (**Network (TCP)**, raw TCP mode of the converter).
- The serial settings: **19200 baud, 8 data bits, no parity, 1 stop bit** (ED-12483). A few console sport codes send at **9600** (Daktronics names code 6604); choose 9600 then.
- Do not use the console's scoreboard outputs (the signal to the scoreboards, pins 14–19): they carry another format and show only garbage in the data monitor.

> **Tip** Which pins and ports carry the RTD differs between console revisions and J-box types. If the data monitor shows no packets, ask the Daktronics dealer which port of your console and J-box carries the "RTD" or "real-time data" RS-232 output.

Switching the Console Input On

1. Connect the console (or its J-box) to the PC and check in the Windows Device Manager which COM port the adapter got.
2. On the console, choose the sport (the sport insert and its code, for example 1101 for basketball) as you always do. Make sure the console's clock direction and period length are the same as in iceBoard 7's **Time Settings** for the discipline.
3. In iceBoard 7, choose the sport and discipline (Game page → sport button).
4. Open **Settings** ⚙. In the **Console Input** row choose **Daktronics All Sport 5000**, **Serial Port (COM)**, the COM port and **19200**; leave **Console Sport** on **Auto**.
5. Tick **On** and click **Apply**. The indicator next to Settings in the tab strip turns amber (*Console: Waiting for Data*) and green (*Console Control · Receiving*) as soon as valid data arrives.
6. **At every start of iceBoard 7 the Console Input is Off** – also after the program restored an unfinished match. The connection settings are kept: open Settings, tick **On** and click **Apply** again when the console is to take over. So a program start never hands the match to a console by surprise.
7. If the board does not fill in at once, change any value on the console once (for example start and stop the clock): the console sends what changes, and from time to time a full update.

The Console Input Row

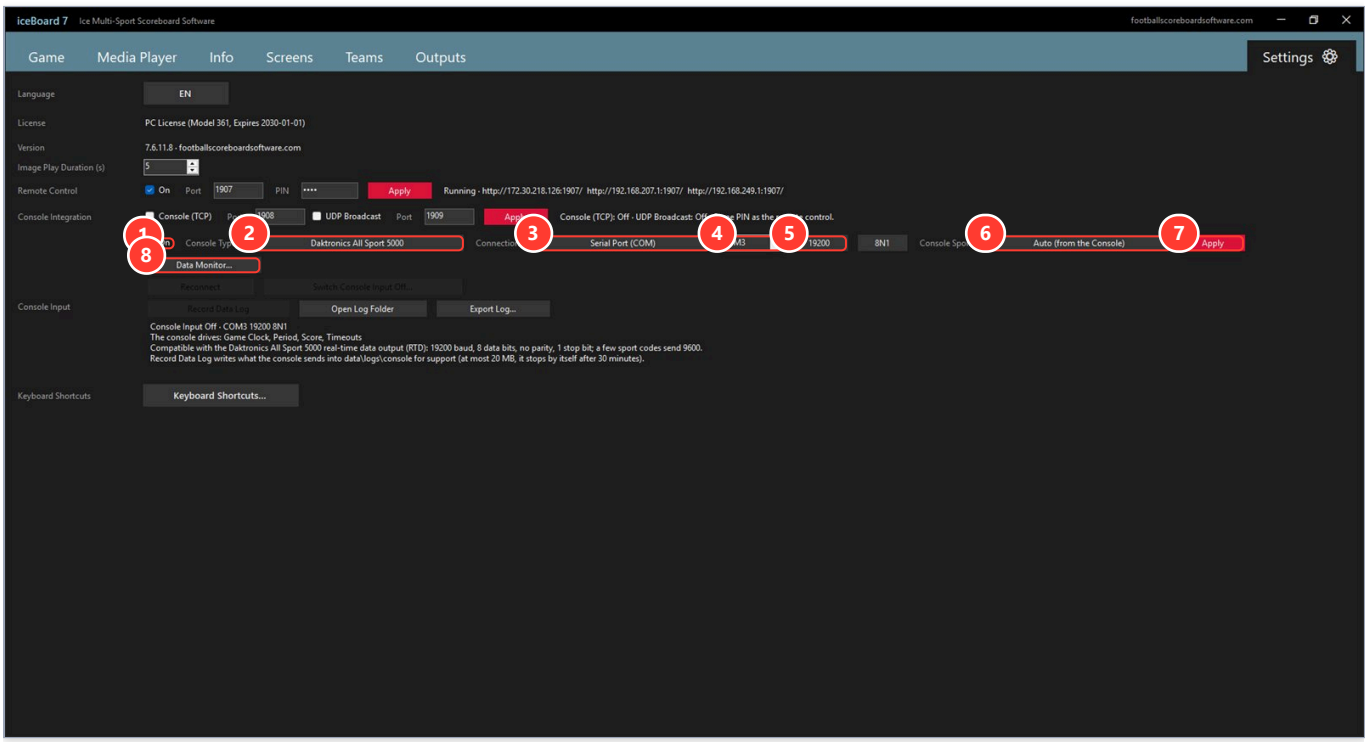


Figure 109. Settings page – Console Input set up for a USB-serial adapter on COM3 (not switched on yet)

#	Control	What it does
1	On	Switches the Console Input on. Switching it off while the console has control asks first (Yes / No).
2	Console Type	The console the program reads: **Daktronics All Sport 5000** here (compatible: the program reads the console's real-time data output). The other types of iceBoard 7 are in *Console Types in iceBoard 7*.
3	Connection	**Serial Port (COM)** for a USB-serial adapter or a built-in COM port; **Network (TCP)** for a serial-to-Ethernet converter (address:port).
4	COM port	The COM port of the adapter (the list shows the ports Windows has; a port that appears later can be typed).
5	Baud rate	**19200** for the All Sport 5000 (8 data bits, no parity, 1 stop bit). Choose **9600** only for a console sport code that sends at 9600 (for example football code 6604).
6	Console Sport	**Auto**: the program takes the sport from the code the console sends, otherwise the console sport that belongs to the sport you play (see the table). Choose a console sport only when the console runs another sport than the table says.
7	Apply	Saves the Console Input settings and (re)connects.
8	Data Monitor...	Opens the data monitor for installers (see below).

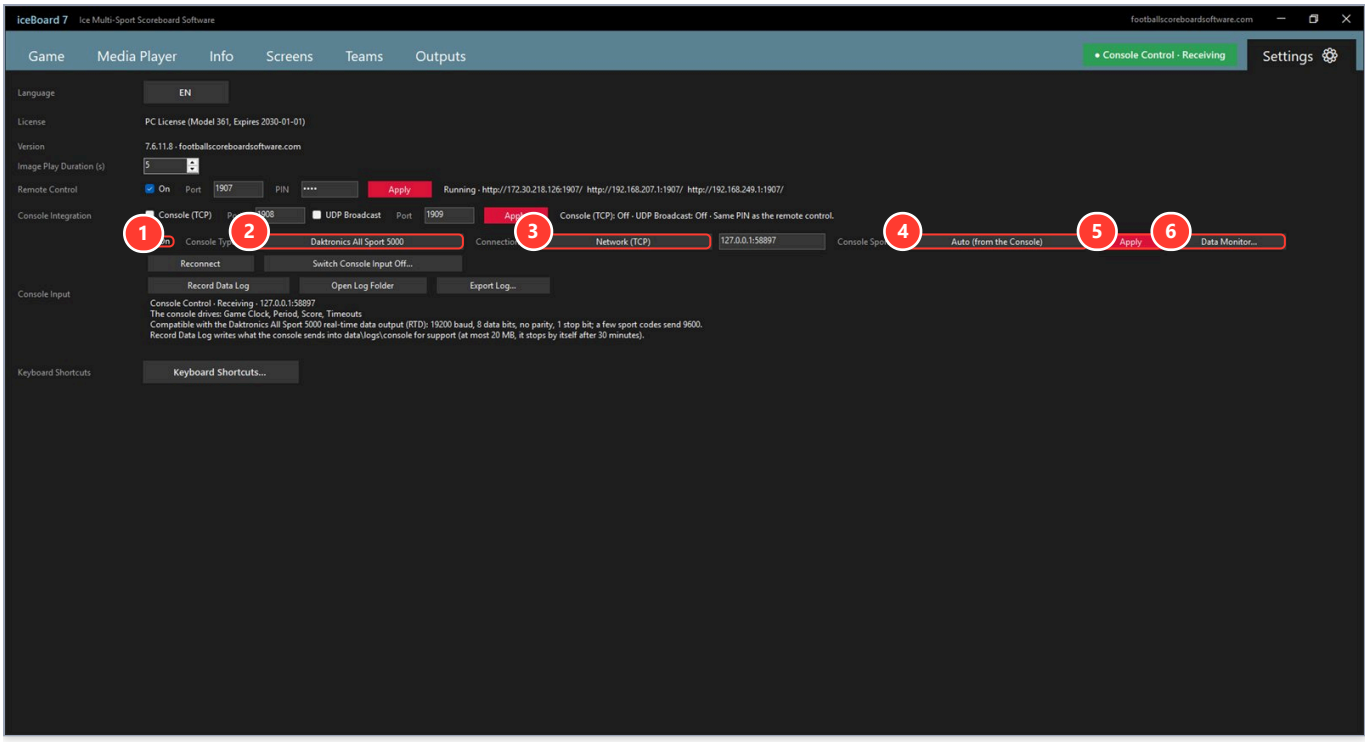


Figure 110. Settings page – Console Input on and receiving (here from the console simulator over the network)

#	Control	What it does
1	**On**	Switches the Console Input on. Switching it off while the console has control asks first (Yes / No).
2	**Console Type**	The console the program reads: **Daktronics All Sport 5000** here (compatible: the program reads the console's real-time data output). The other types of iceBoard 7 are in *Console Types in iceBoard 7*.
3	**Connection**	**Network (TCP)**: the program connects to a serial-to-Ethernet converter (or to a console simulator) at address:port.
4	**Console Sport**	**Auto**: the program takes the sport from the code the console sends, otherwise the console sport that belongs to the sport you play (see the table). Choose a console sport only when the console runs another sport than the table says.
5	**Apply**	Saves the Console Input settings and (re)connects.
6	**Data Monitor...**	Opens the data monitor for installers (see below).

Which Sport the Console Must Run

The console arranges its data by the sport selected on the console, so the console sport must fit the sport you play in iceBoard 7. Full data packets carry the console's sport code; with **Console Sport: Auto** iceBoard 7 uses it. The table shows what the console drives in each sport of iceBoard 7; everything else stays on the panel.

Sports and Console Data

Sport in iceBoard 7	Console sport (code)	What the console drives
Hockey	Hockey / Lacrosse (4xxx)	Game clock and running state, period, score, timeouts left where the discipline has timeouts (penalties stay on the panel)
Ringette	Hockey / Lacrosse	Game clock and running state, period, score, shot clock, timeouts left

Sport in iceBoard 7	Console sport (code)	What the console drives
Broomball	Hockey / Lacrosse	Game clock and running state, period, score, timeouts left
Curling	–	No – the console has no published curling table.

First Test with a Real Console

Because the Console Input was built from public documentation and a simulator, test it once with your console before the first match (about 15 minutes):

1. Connect the console, set up the Console Input as above and open the data monitor. **Packets** must rise and **Checksum Errors** stay at 0. Note the **Console Sport Code**.
2. Start and stop the clock on the console: the clock in iceBoard 7 must start and stop with it and show the same time (at most a second apart above one minute, a few tenths below).
3. Set the clock on the console to another value: iceBoard 7 follows within a second.
4. Add points for both teams, one at a time and several at once; take one back: the scores must match.
5. Change the period, add team fouls, take a timeout for each team, switch possession, run the shot clock (where the sport has them): every value must match.
6. Pull the cable: *Console Data Lost* after 3 seconds, the buttons stay locked. Plug it in again: green again (or click the indicator › Reconnect).
7. Close iceBoard 7 and start it again: the Console Input is Off; switch it on in Settings and the console takes over again.
8. Click **Record Data Log** during a few minutes of a test match and keep the export: if anything differs, send it to support with a note of what the console showed.

> **Tip** If the scores are right but the clock is off by a whole period, the console and the discipline count in different directions or have another period length: set the Time Settings of the discipline to the console's values.

Who Controls What

Once iceBoard 7 receives valid data from the console, **the console has control**: the values the console drives (see the table) come only from the console.

- On the Game page the buttons of those values are greyed out and do nothing: clock start / stop and Set Clock, period buttons, score buttons, shot clock, team fouls, timeouts, possession, down / distance – depending on the sport.
- New Match, another sport or discipline, Time Settings and Undo are not possible while the console has control (a message says so); they would change values the console drives. In swimming and diving the same holds for **Import…**, **Open Competition…** and **Edit Competition** › Save: they would replace the meet the console is timing.
- **The console's values win.** When the console shows more periods, a longer period, more timeouts or another clock than the rules of the discipline allow, iceBoard 7 shows what the console shows. Set the console right if the board must follow the rules.
- The keyboard shortcuts, the remote control and the HTTP API cannot change these values either: the program answers *Console Control Active*. The remote shows a green bar *Console Control · Receiving* and greys out the same buttons.

- Everything the console does not send stays with the operator: team names, logos, colours, player lists, penalties and cards where the table does not list them, info screens, announcements, the Media Player, sponsors, outputs and designs.
- **Full Time in sports with added time** (soccer, rugby, Gaelic games, Australian Rules, International Rules): a console has no full-time signal – its clock only stops. When the console's clock is stopped at or past the end of the last period and the match can end (a team leads, or a draw is the result), **Next Period** (`F2`, or Next Period on the remote) is free for you: it gives Full Time and the winner. If the console's clock runs again, the match goes on. A level score that goes to extra time stays with the console.

> **Note** There is no override from the panel while the console has control. To correct a value, correct it on the console. To take over by hand, switch the Console Input off: click the indicator › **Switch Console Input Off…** › **Yes** . Only this releases the console's control – **Apply** , **No** , **Reconnect** or another console type leave it with the console.

The Game Page under Console Control

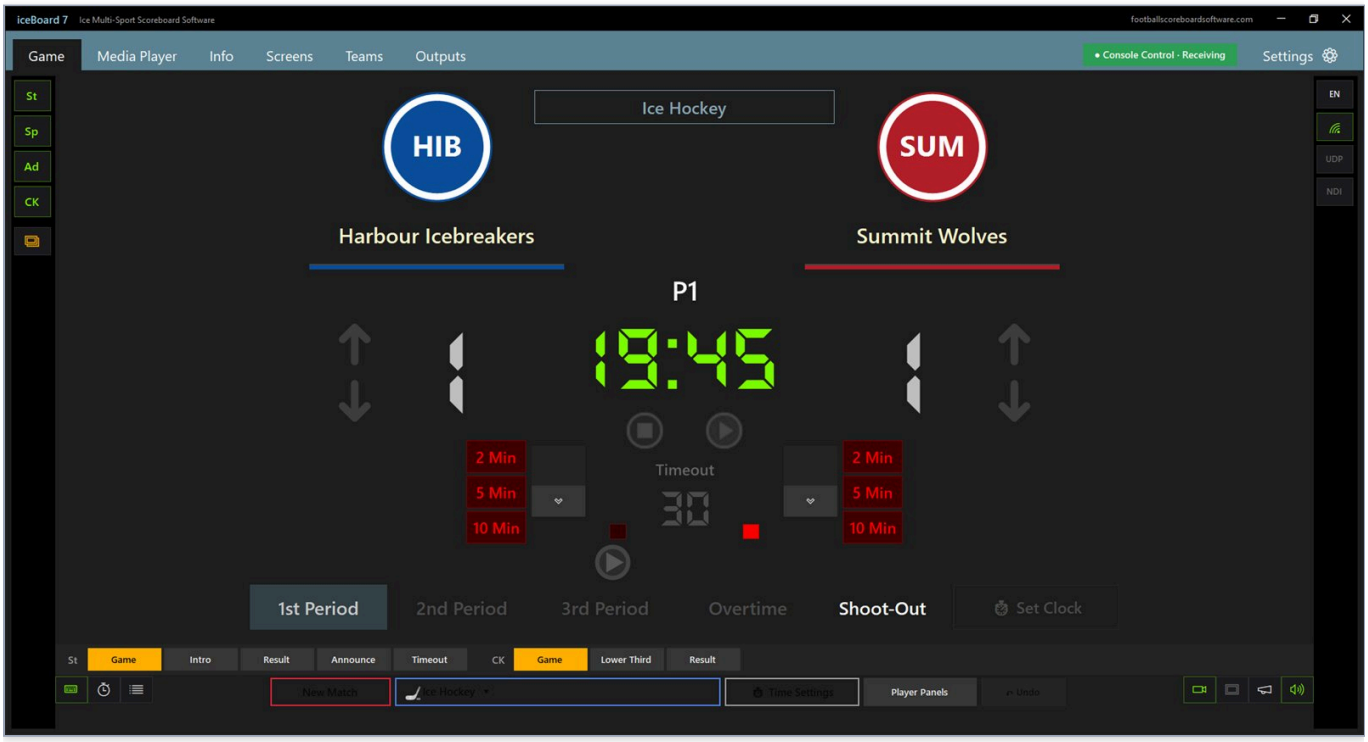


Figure 111. Hockey under console control: the console-driven buttons are greyed out

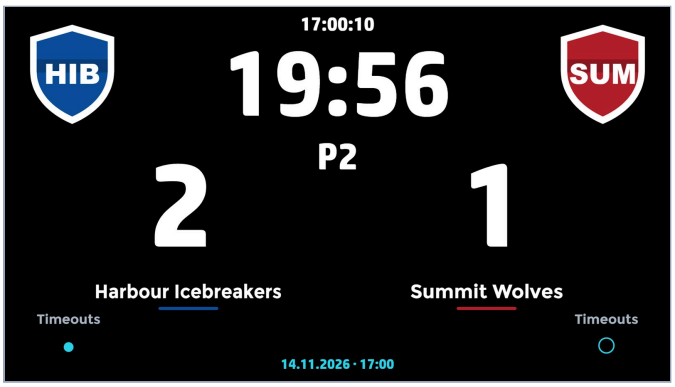


Figure 112. The St board follows the console

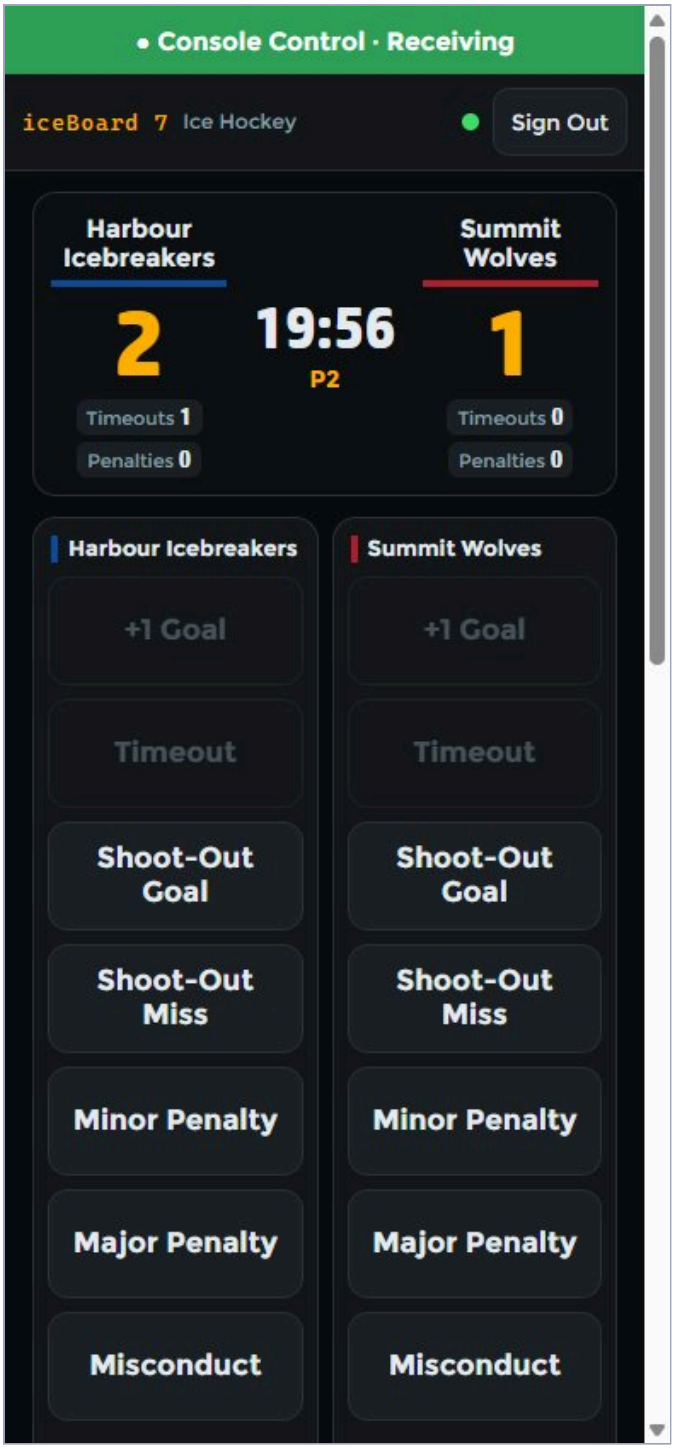


Figure 113. The remote control: the console bar and the greyed-out buttons

The Console Indicator

The indicator next to Settings in the tab strip shows the console's state: green *Console Control · Receiving*, amber *Console: Waiting for Data* (or a message, see below), red and blinking *Console Data Lost / Console Port Error*. A long message ends with "…" – point at it for the whole text. **Click it** for the menu:

- **Reconnect** – opens the connection again (the cable or converter was replaced). The console keeps control; the data take over again as soon as they arrive.
- **Data Monitor…** – the monitor for installers (see below).
- **Switch Console Input Off…** – asks first; **Yes** hands the match to the panel with the last console values, **No** changes nothing.

The same three buttons are on the Settings page (Console Input row) and at the bottom of the data monitor, so you always have a way out.

The Indicator Menu

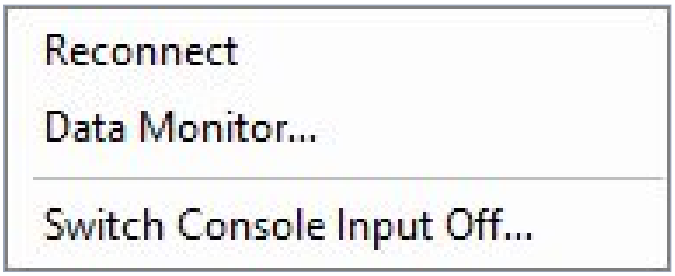


Figure 114. Click the indicator: Reconnect, Data Monitor..., Switch Console Input Off...

When the Console Runs Another Sport

The console must run the sport you play in iceBoard 7 (see the table). If its data say another sport – for example a console still set to basketball while you play volleyball – iceBoard 7 does not read them with a wrong table and does not lock anything: the indicator turns amber with *The console sends Basketball: set the console to Volleyball or choose Console Sport*. The same message is on the Settings page, in the data monitor and on the remote's console bar. Set the sport on the console (or choose Console Sport in Settings) and the console takes over.

A console type that has no table for the sport you play (for example a basketball console while you score cricket) shows the amber *Console: Receiving (Not Used for This Sport)*; the panel works as usual.

If the console is switched to another sport while it has control, the lock stays (only Off + Yes releases it) and the message tells what to do. After a pause of 20 seconds or more in the data, an All Sport 5000 is read again only after its next full packet has told its sport.

Another Sport on the Console

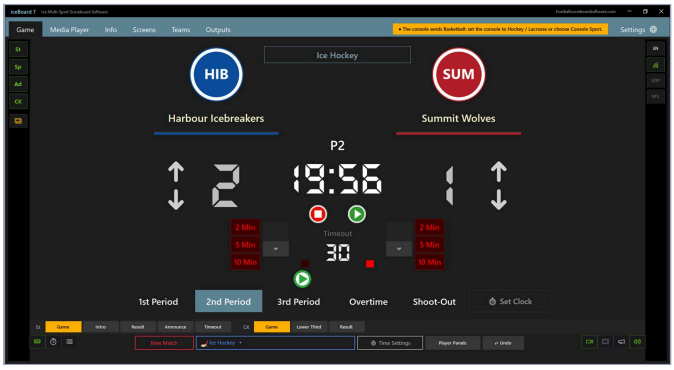


Figure 115. The console sends another sport: amber message, nothing locked

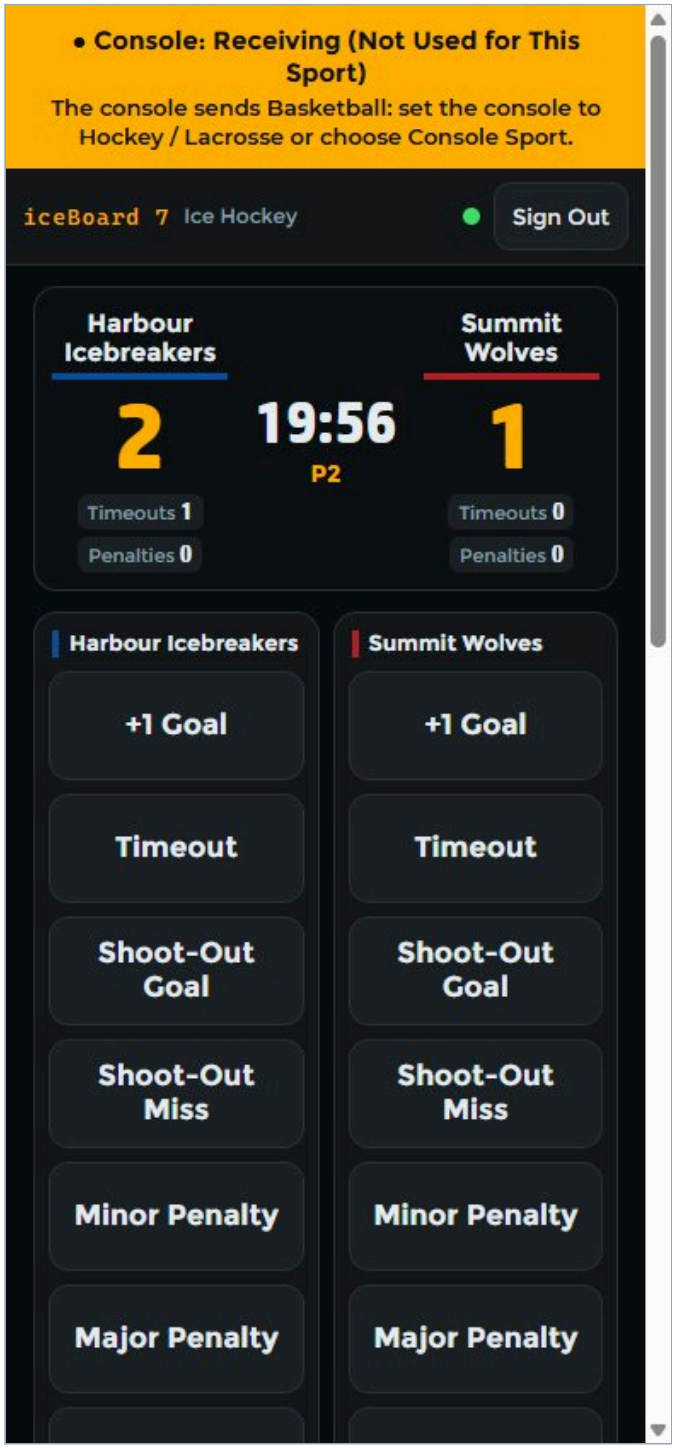


Figure 116. The remote's console bar with the same message

When the Console Data Stop

If no valid data arrive for 3 seconds (cable pulled, console switched off, adapter removed), the indicator turns red and blinks: **Console Data Lost**. The board keeps the last values, a running clock goes on, and **the console keeps control** – the buttons stay greyed out, so that the board never shows values nobody controls.

A running clock that reaches 0:00 while the data are lost **holds there**: the period does not end and no result is shown (no *End of Q4*, no *Match Won*) until the console's data say what happened – the console may have stopped the clock a second earlier.

- When the data come back, the console takes over again at once; nothing else is needed. The program reconnects to the COM port or converter by itself every 2 seconds.
- Click the indicator › **Reconnect** after replacing a cable or converter (the program also tries by itself every 2 seconds).
- If the console cannot be brought back, switch the Console Input off: click the indicator › **Switch Console Input Off…** › **Yes** (or Settings → untick **On** → **Apply** → **Yes**). The panel takes over with the last console values (score, period, clock). **No** leaves everything with the console.
- Swimming: if iceBoard 7 closed unexpectedly during a race the console started, the restored heat goes on racing; switch the Console Input on again and the console's finals and its official end complete the heat.
- When valid data arrive again while the Console Input is on, the console takes control again.

Data Lost and Switching Off

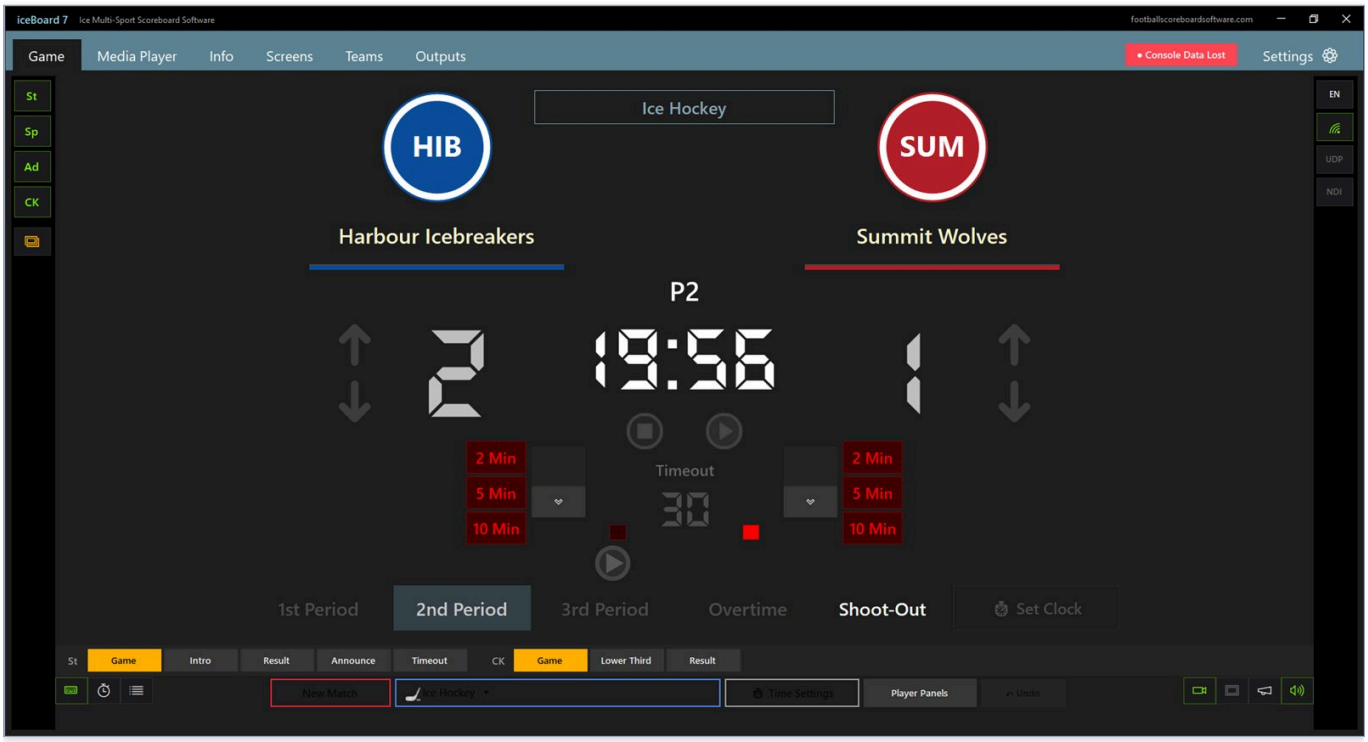


Figure 117. Console Data Lost: the last values stay, the buttons stay locked

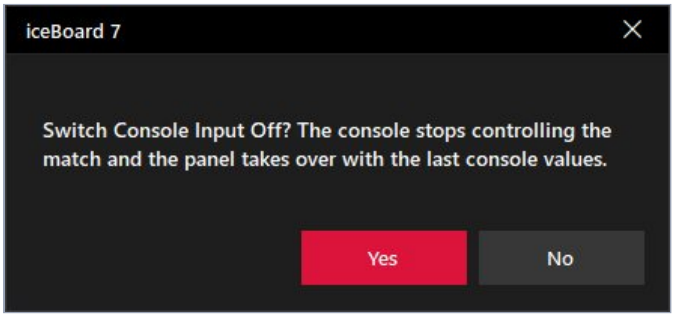


Figure 118. Switching the Console Input off asks first

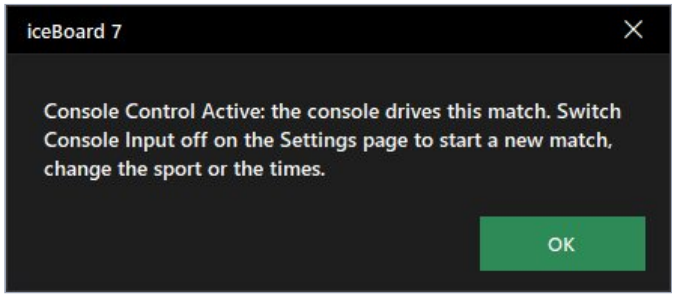


Figure 119. New Match, sport and Time Settings wait while the console has control

The Data Monitor (for Installers)

Click the console indicator, or **Data Monitor…** on the Settings page. The monitor shows the connection and its counters, the console's sport code, every field of the console sport with its raw value, the values iceBoard 7 reads from them, and the last frames as received.

- **Packets** rising: the console data arrive and are valid.

- **Checksum Errors** or **Broken Frames** rising: wrong baud rate, a bad cable or interference.
- **Bytes** rising but no packets: wrong port of the console (scoreboard output instead of RTD) or wrong baud rate.
- **Console Sport Code**: the code the console runs; **Console Sport**: the table iceBoard 7 uses for it.
- **Last Refused Value**: a console value the program could not take over (for example a score after the match was ended by the panel); the other values go on.
- A note line says what the program needs (for example *Event 9 Heat 1 of the console is not in the program*); the remote's console bar shows it too.
- **Reconnect** and **Switch Console Input Off...** at the bottom work as in the indicator menu.
- **Record Data Log** writes what the console sends and what the program does with it into *data\logs\console* (see *Recording a Data Log for Support*).

The Data Monitor Window

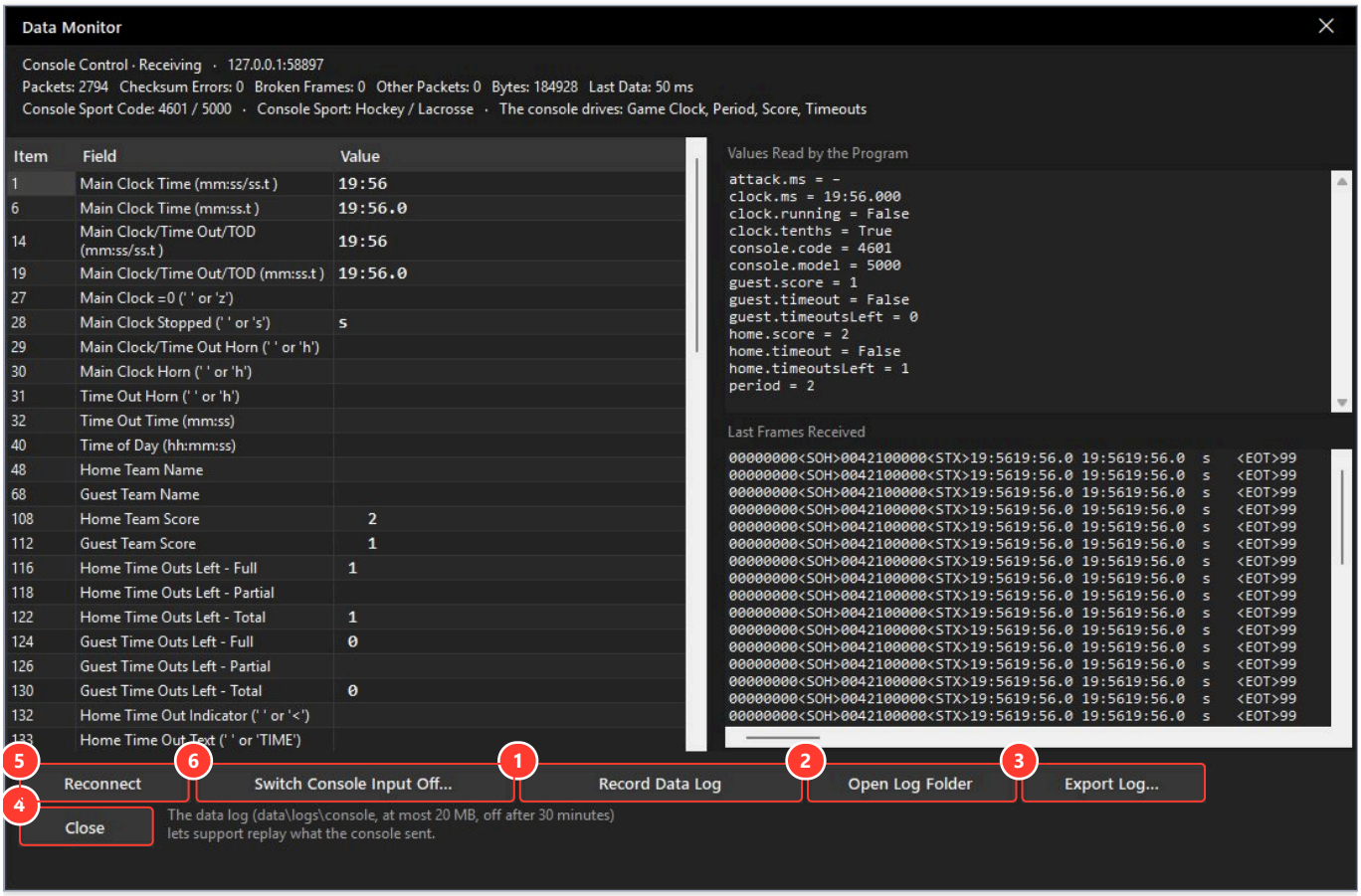


Figure 120. The data monitor: status and counters, the fields of the console sport, the values read and the last frames

#	Control	What it does
1	**Record Data Log**	Starts / stops the data log for support (see *Recording a Data Log for Support*).
2	**Open Log Folder**	Opens data\logs\console in Explorer.
3	**Export Log...**	Saves all console logs as one zip file to send to support.
4	**Close**	Closes the monitor (also `Esc`). The Console Input keeps running.
5	**Reconnect**	Opens the connection again; the console keeps control.
6	**Switch Console Input Off...**	Asks first; Yes hands the match to the panel.

Troubleshooting the Console Input

Problem	What to do
The indicator stays amber (Waiting for Data).	Wrong COM port, wrong console port (use the RTD / RS-232 output, not the scoreboard output), or the console sends nothing yet: change a value on the console (start and stop the clock).
Console Port Error.	The COM port does not exist or another program uses it (close terminal programs or other scoreboard software). Check the Device Manager.
Bytes rise but no packets; checksum errors rise.	Wrong baud rate: try 9600 / 19200. Check the cable (a null-modem cable may be needed between some adapters and J-boxes).
Amber: *The console sends …*	The console runs another sport than iceBoard 7: set the sport on the console or choose Console Sport in Settings (nothing is locked meanwhile).
Amber: *Console: Receiving (Not Used for This Sport)*	This console type has no table for the sport you play: the panel works as usual.
The indicator says Off after a restart.	Correct: the Console Input is Off at every start. Settings → tick On → Apply.
The match does not end in a sport with added time.	Stop the clock on the console, then Next Period (`F2` or the remote) gives Full Time.
Green, but nothing changes on the board.	The sport in iceBoard 7 has no console data (see the table): check the Console Sport Code in the monitor and set Console Sport, or choose the matching sport in iceBoard 7.
The clock differs from the Time Settings.	The console's values win: the board shows the console's period length and clock. Set the console (or the Time Settings) to the same values.
A team's score is right but the score types (2 / 3 points, try / conversion) are wrong in the statistics.	The console sends only totals; the program guesses the type from each change. Totals on the board are always right.
I must take over by hand during the match.	Click the indicator › Switch Console Input Off… › Yes. The panel continues with the last console values. Apply, No and Reconnect leave the console in control.

Compatible with Stramatel 452 (TV Interface)

The Stramatel 452 multisport console has a "TV interface" output for broadcast graphics. iceBoard 7 reads its frames (54 bytes each) for basketball, the handball / futsal / hockey family and volleyball.

> **Note** **Compatible with the Stramatel 452 (TV Interface).** iceBoard 7 is not made or supported by the console's maker and shows no logos. The driver was written from public documents and tested with a simulator only: test it once with the console (see the steps below).

What You Need

- The console's TV RS-485 interface module (blue = ground, white = Tx+, yellow = Tx–) and an **RS-485 to USB adapter** (A = Tx+, B = Tx–; swap them if only garbage arrives).
- The serial settings: **19200 baud, 8 data bits, no parity, 1 stop bit**.

Settings in iceBoard 7

Console Type **Stramatel 452 (TV Interface)** · Serial Port (COM) · the COM port · **19200** · **8N1** · Console Sport **Auto** (the frame's sport byte picks the table).

On the Console

- Choose the sport on the console as usual.
- Other data on the RS-485 line (between two consoles) are skipped by the program.

What the Console Drives

Sport in iceBoard 7	What the console drives
Hockey	Game clock and running state, period, score, timeouts taken. Penalties stay on the panel.
Ringette	Game clock and running state, period, score, timeouts taken.
Broomball	Game clock and running state, period, score, timeouts taken.

The console-driven values are locked for the panel, the hot keys, the remote and the API while the data arrive (see *Who Controls What*); data lost keeps the lock; only Console Input Off with Yes unlocks.

Pictures

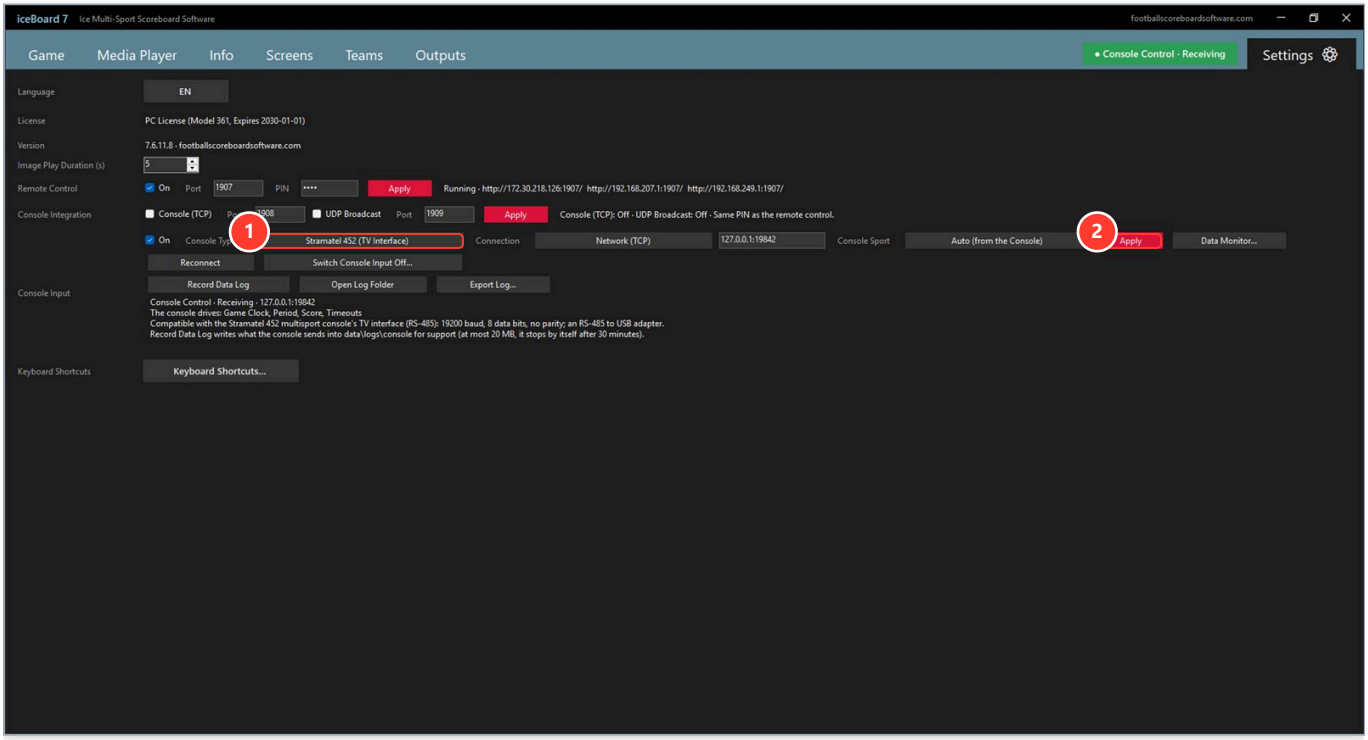


Figure 121. Settings – Stramatel 452 (TV Interface) receiving (Hockey, built-in simulator)

#	Control	What it does
1	**Console Type**	The console type (only the types of the iceBoard 7 sports are listed).
2	**Apply**	Saves and (re)connects; another console type sets its documented line settings.

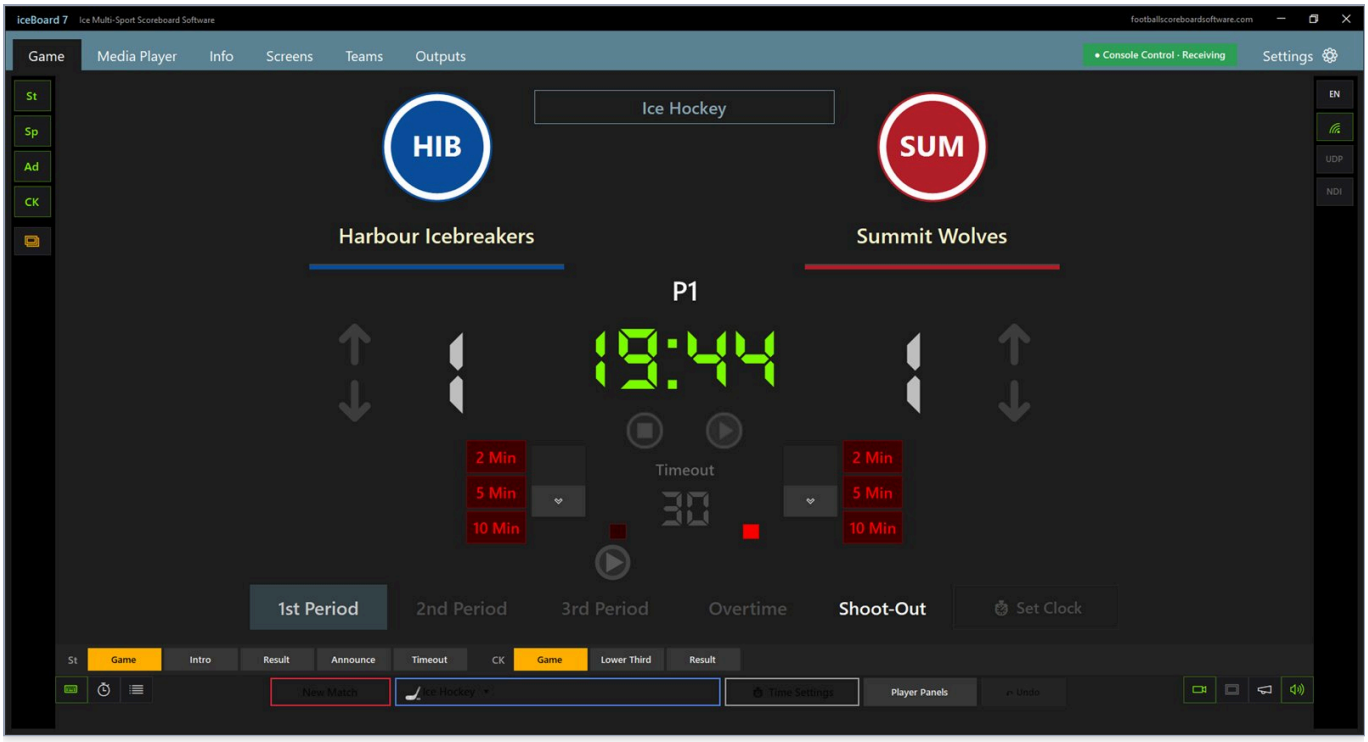


Figure 122. Hockey under the control of the Stramatel 452 (TV Interface)

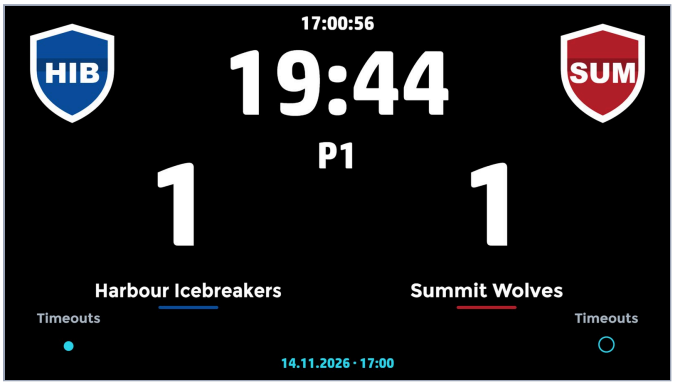


Figure 123. The St board follows the console

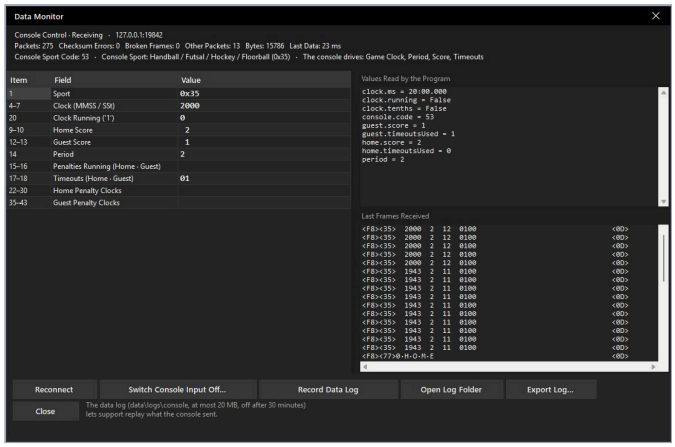


Figure 124. The data monitor with the console's fields

Not Verified Yet

- Timeouts: counted as timeouts taken.
- The netball score digits; the shot clock "display" flag.
- Tennis, table tennis, badminton and boxing frames are not in the iceBoard 7 sports: not read.

First Test on Site

1. Open the data monitor: Packets rise; Other Packets (names, messages) may rise too.
2. Clock, score, period, fouls, timeouts, possession and the shot clock: compare each with the console.
3. Volleyball: points, serve and a set change.

Compatible with Bodet Scorepad

The Bodet Scorepad (main keyboard) sends its match data to a PC over the network: the Scorepad connects to iceBoard 7. iceBoard 7 reads basketball, handball and ice hockey.

> **Note** **Compatible with the Bodet Scorepad.** iceBoard 7 is not made or supported by the console's maker and shows no logos. The driver was written from public documents and tested with a simulator only: test it once with the console (see the steps below).

What You Need

- The Scorepad and this PC in the same network (the Scorepad's RJ45 output), or the RJ45 / RS-232 interface (Moxa, TCP server mode) to a COM port.
- The PC's IP address and a free port (the program listens on it; default 4001). Allow the program in the Windows firewall for this port.

Settings in iceBoard 7

Console Type **Bodet Scorepad** · Connection **Network (Console Connects to This PC)** · the port (e.g. 4001) · Console Sport Auto (the sport of the Scorepad's messages). With the RS-232 interface: Serial Port (COM), **9600**, **8N1**.

On the Console

- Welcome screen → **Technician menu** (code **4934**) → **Communication protocols** → **+ Create**: a name, the protocol type for the PC, this PC's IP address and the same port as in iceBoard 7; **Test** must show a green rectangle; save.
- Start the sport and the match on the Scorepad: the protocol is sent automatically.

What the Console Drives

Sport in iceBoard 7	What the console drives
Hockey	Game clock and running state, period, score, timeouts taken. Penalties stay on the panel.
Ringette	Game clock and running state, period, score, timeouts taken.
Broomball	Game clock and running state, period, score, timeouts taken.

The console-driven values are locked for the panel, the hot keys, the remote and the API while the data arrive (see *Who Controls What*); data lost keeps the lock; only Console Input Off with Yes unlocks.

Pictures

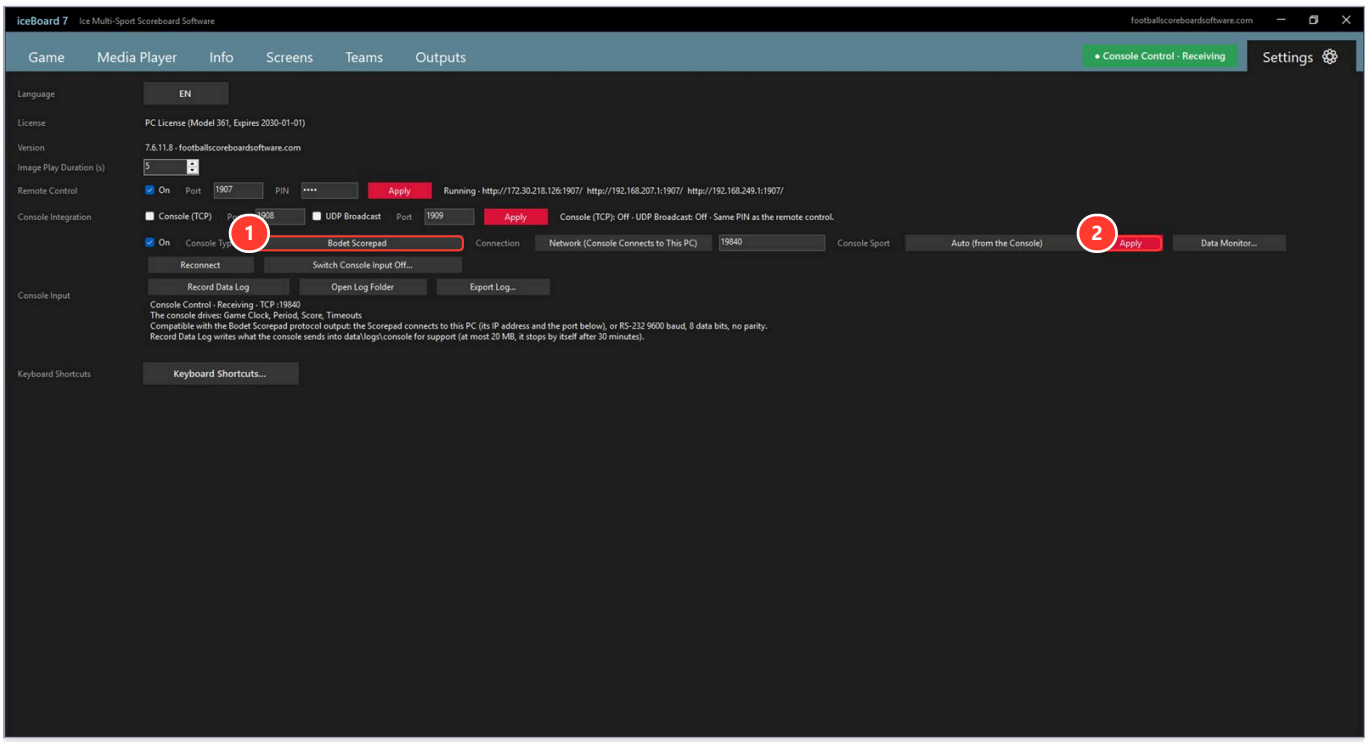


Figure 125. Settings – Bodet Scorepad receiving (Hockey, built-in simulator)

#	Control	What it does
1	**Console Type**	The console type (only the types of the iceBoard 7 sports are listed).
2	**Apply**	Saves and (re)connects; another console type sets its documented line settings.



Figure 126. Hockey under the control of the Bodet Scorepad

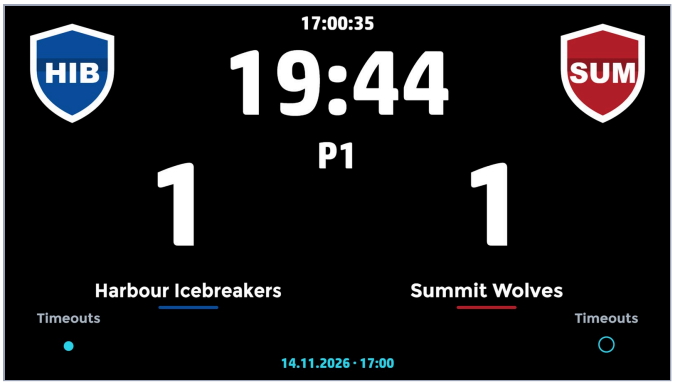


Figure 127. The St board follows the console

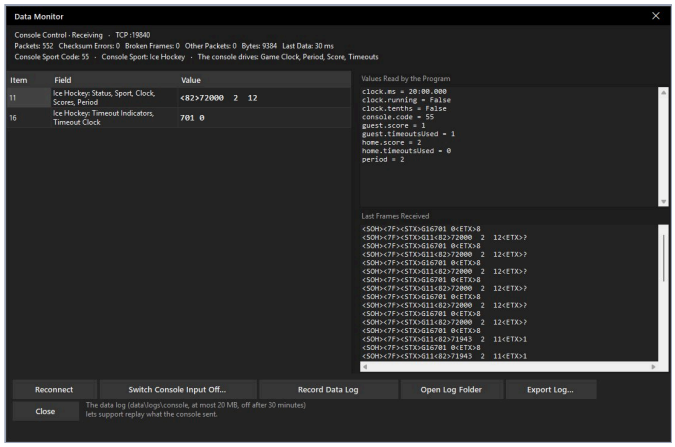


Figure 128. The data monitor with the console's fields

Not Verified Yet

- The document's own captures of the shot clock message carry the LRC without the end byte: both forms are accepted.
- Timeout indicators: counted as timeouts taken (the higher value while a timeout runs).
- Where the period digit sits in the basketball clock message; overtime ("E").
- Penalties, player fouls, player numbers and names are not used.

First Test on Site

1. Create the protocol on the Scorepad and press Test: green.
2. Open the data monitor: messages 18 / 30 / 50 (basketball), 01 / 02 (handball) or 11 / 16 (ice hockey) arrive.
3. Clock (also the tenths in the last minute), score, period, fouls, timeouts and the shot clock: compare each.

Compatible with Kazo Vision Ultra Score (Data Out)

Kazo Vision Ultra Score sends its live data as UDP broadcasts on port 2800 ("Data Out"). iceBoard 7 listens on this port and reads the sports it has.

> **Note** **Compatible with the Kazo Vision Ultra Score (Data Out).** iceBoard 7 is not made or supported by the console's maker and shows no logos. The driver was written from public documents and tested with a simulator only: test it once with the console (see the steps below).

What You Need

- The Ultra Score PC and this PC in the same network (broadcasts do not pass routers).
- Allow UDP port 2800 in the Windows firewall for the program.

Settings in iceBoard 7

Console Type **Kazo Vision Ultra Score (Data Out)** · Network (UDP) · port **2800** · Console Sport **Auto** (the message type picks the sport).

On the Console

- Switch **Data Out** on in Ultra Score.
- Swimming: the same event and heat numbers as the start list in iceBoard 7. Diving: the same divers (names).

What the Console Drives

Sport in iceBoard 7	What the console drives
Hockey	Ice hockey: game clock and running state, period, score, timeouts taken.
Ringette	Game clock and running state, period, score, timeouts taken.
Broomball	Game clock and running state, period, score, timeouts taken.

The console-driven values are locked for the panel, the hot keys, the remote and the API while the data arrive (see *Who Controls What*); data lost keeps the lock; only Console Input Off with Yes unlocks.

Not Verified Yet

- "Timeout times" counted as timeouts taken; the break periods (even numbers) keep the period before.
- Swimming: the heat result message is not taken as the official end.
- Diving: the console's start list number → name; the judges' validity flags.
- Several Ultra Score systems in one network (system id) are not told apart.

First Test on Site

1. Open the data monitor: the general data message of the sport arrives (Packets rise).
2. Compare clock, score, period, fouls, timeouts, shot clock; swimming: start, splits and finals; diving: awards and publish.

Recording a Data Log for Support

When a console does not work as it should on site, a **data log** lets support see exactly what the console sent. It is off when iceBoard 7 starts and never stays on by mistake.

1. Settings → Console Input (or the data monitor): click **Record Data Log**. The button turns red (*Stop Recording*) and the status line under it shows *Recording Log* with the time left (the data monitor too); the indicator in the tab strip keeps showing only the console's state.
2. Let the console run the situation that goes wrong (a few minutes are enough). Note what the console showed.
3. Click **Stop Recording** – or let it stop by itself after **30 minutes**; switching the Console Input off stops it too.
4. Click **Export Log…**: one zip file of the logs (choose where to save it, e.g. the desktop) – send it to support with your note. **Open Log Folder** shows the files.

- What is in it: every byte the console sent with its time (support can replay it into the program), and a readable list of what happened – connection, errors with the bytes concerned, unknown packets, every change of the values read, the lock state, the console type, port and baud rate, the program version.
- The log folder is *data\logs\console*. It never takes more than **20 MB** in all (at most 4 MB per file, 20 files): the oldest files are deleted first, also after a restart.
- No personal data are recorded – only the console's data.

The Data Log in iceBoard 7

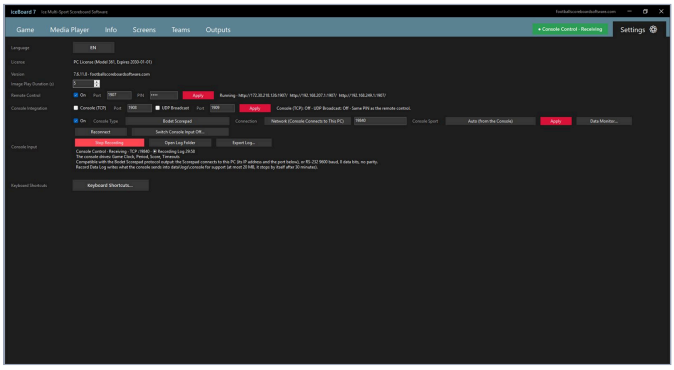


Figure 129. Record Data Log on: the status line counts down

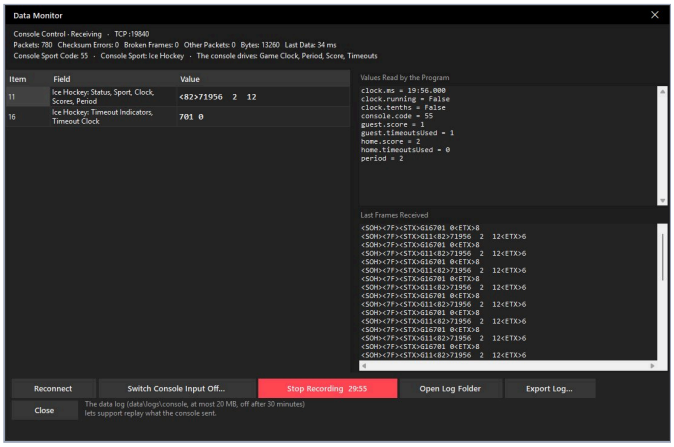


Figure 130. The data monitor while the log records

Other Consoles

These consoles are possible once a customer sends a data log (or a capture) of their console – their data format is not published: **Swiss Timing basketball consoles**, **Mobatime**, **Fair-Play**, **ALGE** timers, **Microgate**. Record a data log with the console connected as above (any console type) and send it to support.

19 Typical Workflows

1. Connect the second display and set it to *Extend* in the Windows display settings (`Win` + `P`), Scale 100 %.
2. Start iceBoard 7, click the sport button in the bottom bar and choose the sport and discipline.
3. Open **Teams**: type the event, team names, short names, choose colours and logos, fill the team lists and click **Apply**.
4. Open **Outputs**: in the Standard (LED) row choose monitor 2, tick **Full Screen** and **Show** (for a sender card: Full Screen off and the LED's pixel area, see *Sending the Board to the LED Screen*).
5. Click the design icon on the output strip and pick the master design you like for St.
6. Optionally switch on the background video with the icon at the bottom right.
7. Go back to **Game** and run the match; use the St on-air row for Intro before the start and Result at the end.

1. On **Outputs**, set St to the LED wall monitor with **Full Screen** (or Left / Top / Width / Height for an LED controller with an unusual resolution).
2. Tick **Show** and **NDI** for Chroma Key (Video). If you do not need to see it, untick Full Screen and give it a small window on the operator monitor.
3. In vMix add an NDI input *<PC name> (<product> CK)* and put it as an overlay; the background is already transparent.
4. On the **Info** page tick **St** and **CK**, set Seconds on Air to 8–10.
5. During play, show goals, cards and substitutions from the Info page: the LED wall shows the full-screen graphic, the broadcast the lower graphic, and both return to the game screen by themselves.

1. Right-click **Sp** on the output strip: the **Sp / Ad Media** dialog opens at the Sponsor Strip tab. Click **Add Pictures…** and choose the sponsor logos (PNG with a transparent background looks best).
2. Set Mode to **Scroll Images**, Direction Left, Speed 4–6. Rename the files in **Open Folder** (01_, 02_ …) to change their order, then click **Reload**.
3. Open the **Ad Layout** tab: keep the scoreboard Left (Size 0 = Auto), tick **Visible** for Banner 1 (Top, 12 %) and Banner 2 (Bottom, 12 %).
4. On **Banner 1** choose **Scroll Text** and type one message per line (next home game, ticket office, social media). Pick Colour 2 in the club colour.
5. On **Main Area (Ad)** keep **Playlist** and add the sponsor videos; set Seconds per Picture for the still adverts.
6. Tick **Show the Ad Board**, check the result live and close the dialog. At half-time type a raffle message into Scrolling Text on the Info page and click Apply.

1. Connect the sender card, press `Win` + `P` → **Extend**, and set the card's monitor to 1920 × 1080, Scale 100 %, in the Windows display settings.
2. Let the LED supplier map the screen in the vendor software from the top left corner (0, 0) of the card's input.
3. On **Outputs**, Standard (LED): choose the sender card's monitor, untick **Full Screen**, type Left 0, Top 0, Width 384, Height 192 and tick **Show**.
4. Check the LED: the board fills it exactly. Close iceBoard 7.
5. On match day just start iceBoard 7: the board opens on the LED by itself.

1. Before the match open **Media Player**, click **Add Clip** and choose the video and the two pictures; drag the rows into order.
2. Switch **Return to the Scoreboard** on (green frame), set the sound on if the video has music, and check **Image Play Duration** on the Settings page.

3. At half-time select the first row and click **Start**: the clips play one after the other on the board.
4. At the end of the playlist the scoreboard comes back by itself (or click **Finish** / the **Game** tab earlier).

1. Open **Settings** and note the address and the PIN of the Remote Control row (set your own PIN and click Apply if you like).
2. Connect the phone to the same Wi-Fi and open the address in its browser.
3. Enter the PIN and press ✓.
4. Use the team buttons for scores, fouls and timeouts and the Match buttons for the clock; mistakes are fixed with the Corrections buttons or Undo.
5. Keep the PC operator for info graphics and screens; both can work at the same time.

1. Before the day, open **Teams** and type the event name and the venue.
2. Type the first match's teams with their team lists (number, name, Show) and click **Apply**.
3. For each later match, change names, short names, colours, logos and team lists and click **Apply**, then click **New Match** (the team setup is kept, the score is reset).
4. Untick **Show** for injured or absent players instead of deleting them.
5. Before each match, show the Intro screen and the team lists (Info page → Team Lists, with **Slide** for a player-by-player presentation).

1. Type only the team names and click **Apply** on the Teams page.
2. Score on the Game page as usual (team scores without players).
3. For a goal or a card graphic, open the Info page, choose the team and type just the number (or number and name) into the player field.
4. Click **Show**. A number with a name is added to the team list, so it can be picked from ▾ next time.

1. Start the PC and iceBoard 7 again.
2. Answer **Yes** to *"The program did not close normally. Restore the last match?"*.
3. Check score, fouls and penalties on the Game page; the clock is stopped at the time of the last recorded action.
4. Ask the table officials for the official time and correct it with **Set Clock**.
5. Check that the boards are open (St / Sp / Ad / CK open again by themselves at their places) and start the clock with the referee's signal.

1. Click the design icon on the output strip, then **Edit** on the Arena card.
2. Click **Save a Copy** and give the design the club name.
3. Open the **Theme** tab and change the colour tokens (accent, panel, text) and the fonts – every screen of the design follows.
4. Check the special moments with **Preview Data** and the shapes of your screens with **Preview Size**.
5. Click **Save** (`Ctrl` + `S`), close the editor and choose the new design (★) for St, Sp and Ad on the Outputs page or in the gallery.

20 Ice Hockey and Para Ice Hockey

Hockey uses the family's hockey Game panel: big scores with up and down arrows, the count-down clock, penalty buttons and the running penalties per team, the timeout, the period buttons and the shoot-out. **Ice Hockey** and **Para Ice Hockey** are two disciplines of the same sport; they differ in the period length, the timeout and the shoot-out.

Rules as Implemented

- Ice hockey (IIHF): three periods of 20:00 counted down, tenths of a second in the last minute; the clock stops on a goal.
- Para ice hockey (World Para Ice Hockey): three periods of 15:00, one timeout of 60 seconds per team.
- Overtime: 5:00 sudden death – the first goal wins. If it stays tied, the penalty shot shootout: 5 shots per team in ice hockey, 3 in para ice hockey, then one shot each until one team leads after the same number of shots. Playoff overtimes of 10:00 or 20:00 are set in Time Settings; overtime with fewer skaters is not shown on the board.
- The shootout winner is credited **one goal** in the final score, as the IIHF counts it: 2–2 after overtime and a shootout won 3–1 by the guests gives the final score **2–3**. The boards keep the shootout line (e.g. *SO 1–3*), so the 2–2 of the game and the shootout stay visible.
- Minor penalty 2:00: the team plays short; a goal of the other team ends the penalty. Major penalty 5:00: served in full. Misconduct 10:00: a personal penalty, the team does not play short.
- At most two penalties of a team run at the same time; a third waits and starts when the first one ends.
- Penalties run only while the game clock runs, and are shown with the player's number on the boards.
- One team timeout per game (30 s ice hockey, 60 s para ice hockey); it may be used in overtime.

The Game Panel



Figure 131. The ice hockey Game panel (the para ice hockey panel is the same with 15-minute periods).

#	Control	What it does
1	**Discipline**	Shows the discipline and opens Choose Sport and Discipline.
2	**Logos**	The team logos from the Teams page (or the short name on the team colour).
3	**Team Name**	Click and type to rename the team, and press Enter (or click elsewhere) to save it. The coloured line under it is the team colour. The guest name works the same way.
4	**Goal ↑**	Adds a goal for the team (credited to the player in the number box). The clock stops by itself on a goal. Default keys: `Num 7` (home), `Num 9` (guest).
5	**Goal ↓**	Takes a goal back. Default keys: `Num 0` (home), `Num ,` (guest).
6	**Score (Home)**	The home team's goals. The guest score is on the right.
7	**Clock**	Counts down from 20:00, green while running. Tenths of a second in the last minute. Double-click to set it (m:ss).
8	**Stop**	Stops the clock (`F1` toggles start and stop).
9	**Start**	Starts the clock.
10	**Number Box (Home)**	The player for the next goal or penalty: type the number or choose it with ▾. It clears after use.
11	**▾ Player List**	Opens the team list (see below).
12	**Minor Penalty (2 Min)**	A minor penalty of 2:00 for the player in the number box. It runs only while the clock runs and ends early on a goal of the other team. At most two penalties of a team run at once; a third waits.
13	**Major Penalty (5 Min)**	A major penalty of 5:00; a goal does not end it.
14	**Misconduct (10 Min)**	A personal misconduct of 10:00: the player sits out, the team does not play short.
15	**Timeout**	The timeout countdown (30 s in ice hockey, 60 s in para ice hockey). Start a team's timeout with the green button under it; the lamp shows a timeout used.
16	**Timeout (Home)**	Starts the home team's timeout. The guest button is on the right.
17	**Period Buttons**	Click a period to go to it; the clock resets and stops. `F2` goes to the next period.
18	**Overtime**	The sudden-death overtime (5:00): the first goal ends the game.
19	**Shoot-Out**	Starts the penalty shot shootout after a tied overtime (5 shots each in ice hockey, 3 in para ice hockey, then sudden death). Each shot is entered as goal or miss; the marks show on the boards.
20	**Set Clock**	Opens the Set Clock dialog to correct the clock.
21	**St Screen Row**	The St screens of hockey: **Game**, **Intro**, **Result** and **Announce**. The other event screens (goal, penalty, substitution, team list, officials) come from the Info page (see the Outputs section below).
22	**CK Screen Row**	The CK screens: **Game** (score bug), **Lower Third** and **Result**.
23	**Player Panels**	Shows or hides the team lists with each player's goals and penalty minutes on the St board.
24	**Undo**	Takes back the last goal, penalty, timeout or period change (`F12`).

The tool icons and the other buttons of the bottom bar (New Match, the sport button, Time Settings) are described in The Main Window.

Menus and Dialogs of the Hockey Panel

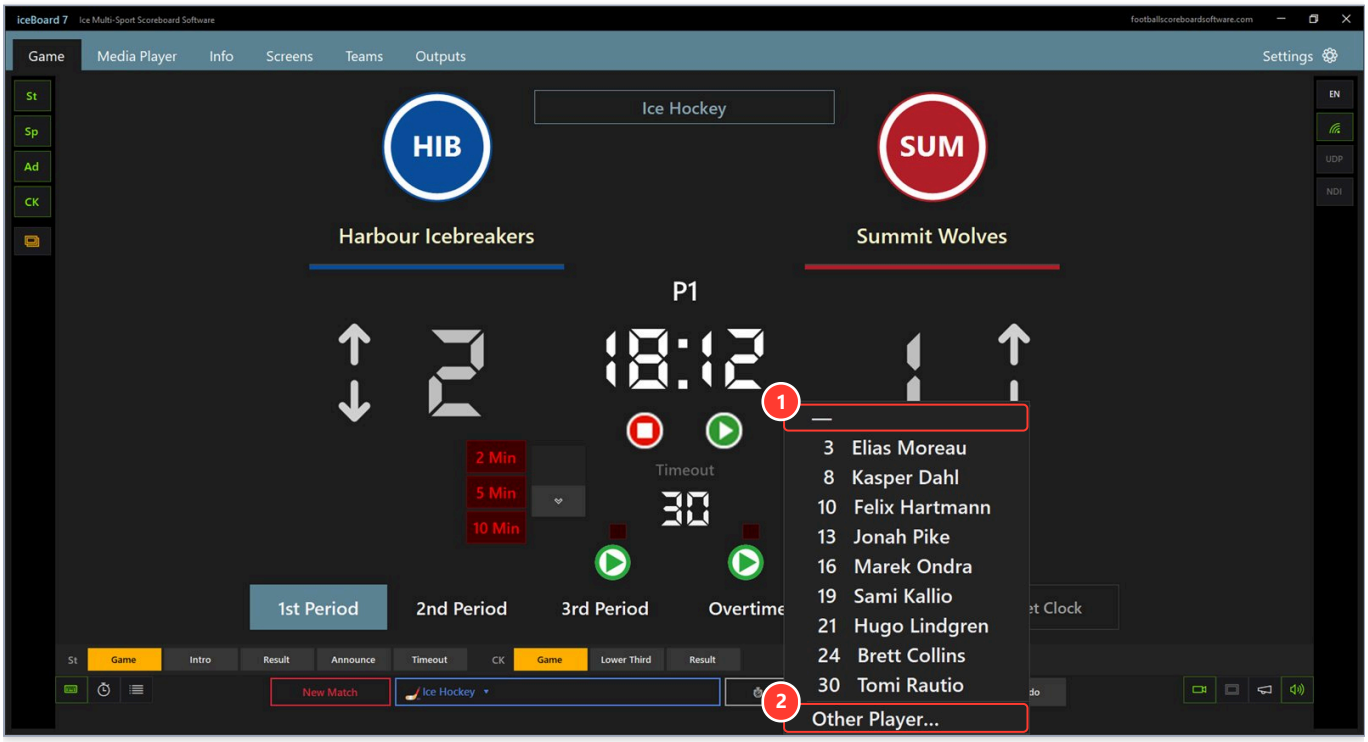


Figure 132. The player list (▾) under the home number box (hockey).

#	Control	What it does
1	**Players**	The team list in number order. Click a player to put the number into the box: the next goal or penalty is credited to that player, then the box clears.
2	**Other Player...**	Opens the Other Player dialog for a player who is not in the list.

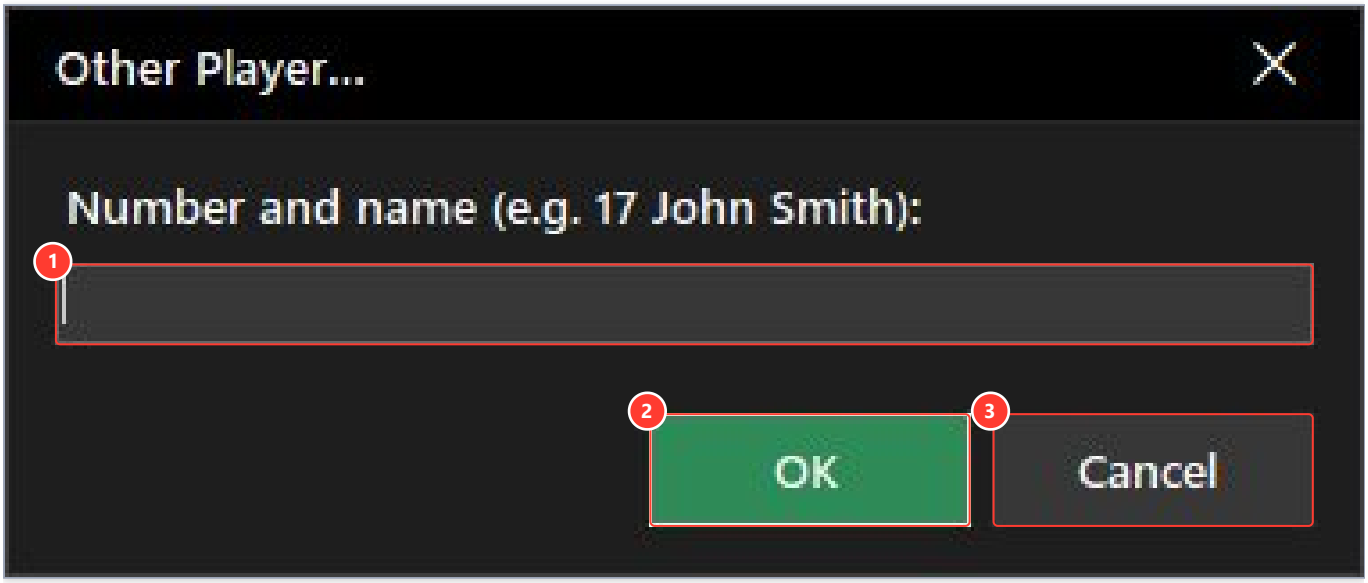


Figure 133. Other Player... asks for the number and the name of a player who is not in the list (hockey).

#	Control	What it does
1	**Number and Name**	Type the shirt number, and if you like the name after it (e.g. *17 Ola Berg*). A new number with a name is added to the team list.
2	**OK**	Uses the player for the next goal or penalty.
3	**Cancel**	Closes the dialog without a change.

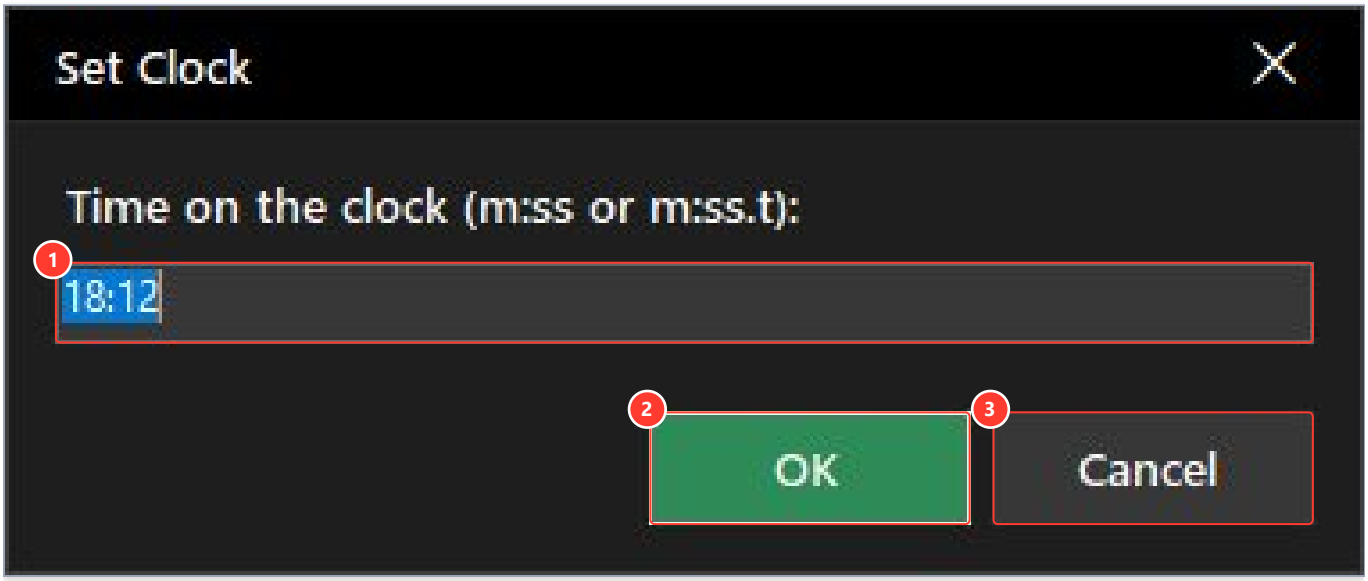


Figure 134. Set Clock: type the time the clock shall show.

#	Control	What it does
1	**Time on the Clock**	Shows the clock time at the moment you opened the dialog. Type the new time as m:ss (or m:ss.t), e.g. *12:30*. The time must lie within the period. Opened by ⏱ Set Clock or a double-click on the clock.
2	**OK**	Sets the clock. A running clock keeps running from the new time.
3	**Cancel**	Leaves the clock as it is.

Time Settings

Time Settings changes the period lengths, the overtime, the timeout and the penalty lengths of the discipline (e.g. 3 × 15:00 for a youth league or a 10:00 playoff overtime). The values are kept for the next matches; Default Values brings back the rule book values.

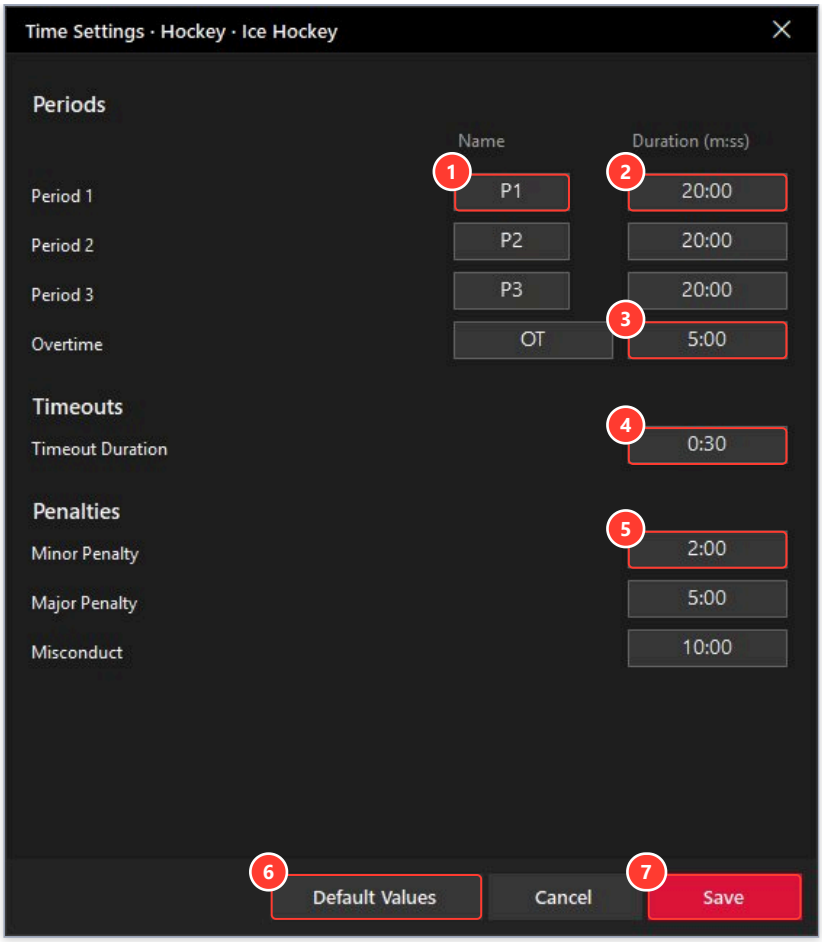


Figure 135. Time Settings for ice hockey.

#	Control	What it does
1	**Period Names**	The names of the periods on the boards (P1, P2, P3) and of the overtime (OT).
2	**Period Lengths**	The length of each period (m:ss).
3	**Overtime Length**	The length of the overtime period.
4	**Timeout Duration**	The length of a team timeout.
5	**Penalty Lengths**	The length of each penalty type (minor, major, misconduct).
6	**Default Values**	Puts the rule book values back (asks first).
7	**Save**	Saves the values; they apply from the next match.

The Info Page for Hockey

The Info page of hockey has the Goal, Cards / Penalties, Player Intro, Substitution, Multiple Substitution, Team Lists and Officials rows described in The Info Page (its pictures, with the player list and the choice list, are there).

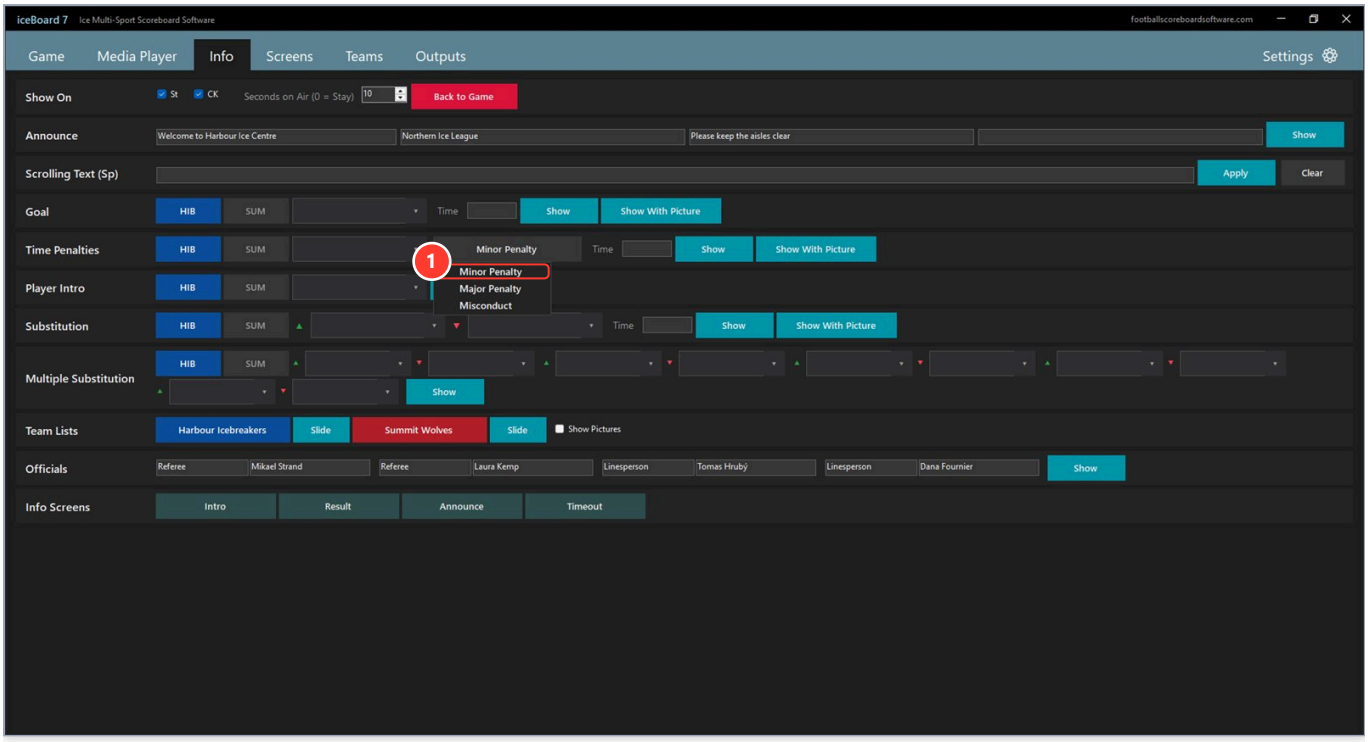


Figure 136. The choice list of the Cards / Penalties row (hockey): the penalty types of the discipline.

#	Control	What it does
1	**Penalty Types**	Minor Penalty, Major Penalty, Misconduct: the title of the graphic. The penalty itself is entered on the Game panel.

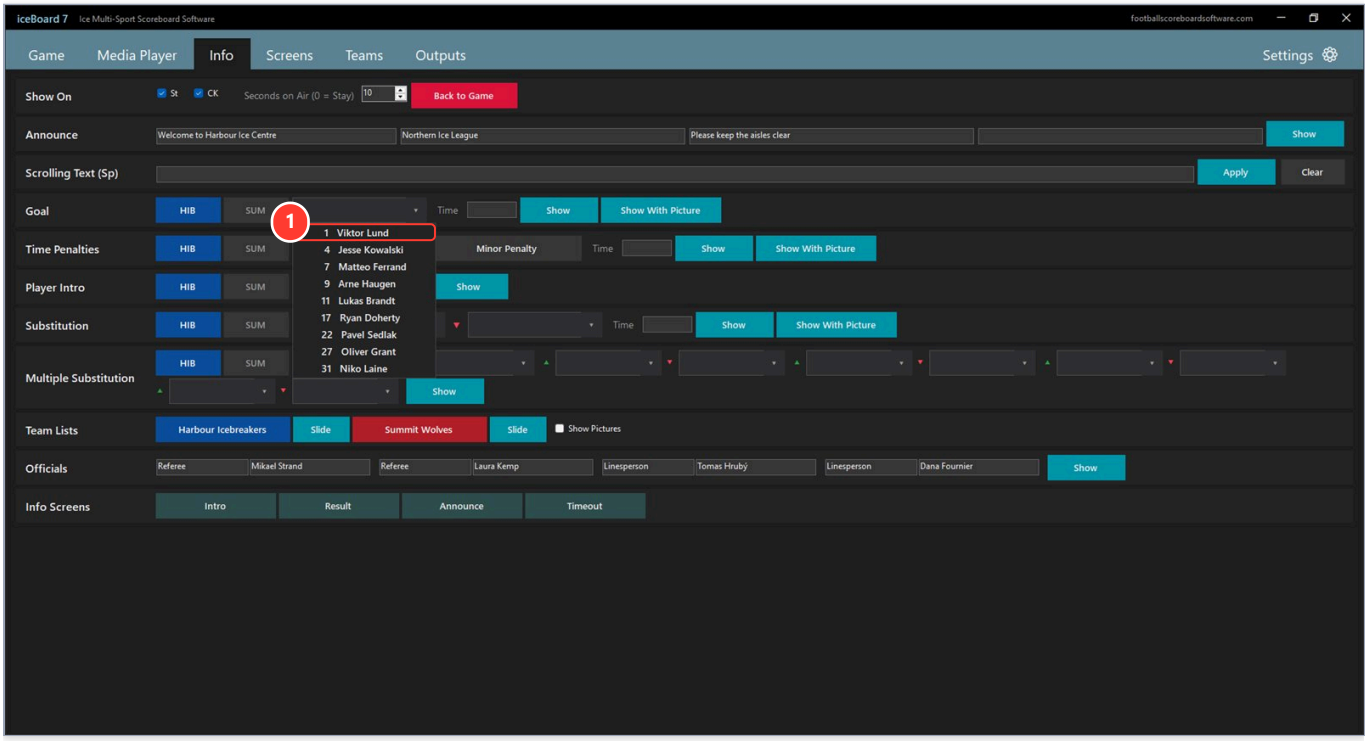


Figure 137. The player list (▾) of an Info page row: the team list with numbers.

#	Control	What it does
1	**Players**	Click a player to put number and name into the field.

Hockey Outputs

The Game Screens

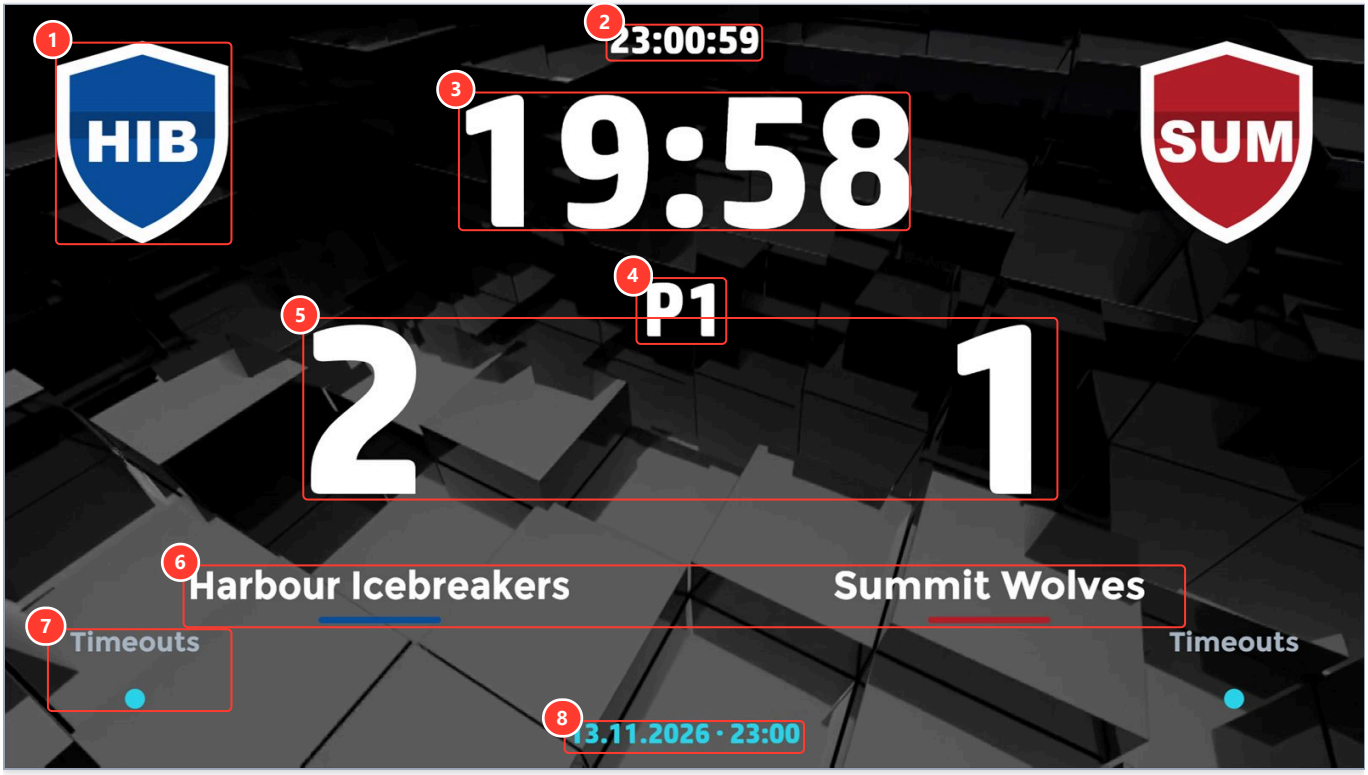


Figure 138. The hockey St board (Arena design).

#	Control	What it does
1	Logos	The team logos.
2	Time of Day	The time of day.
3	Clock	The game clock, counting down.
4	Period	P1–P3, OT, SO.
5	Scores	The goals of each team.
6	Team Names	Team names with the team colour.
7	Timeouts	The timeout of each team as a dot (filled: still available); the overtime keeps an unused timeout.
8	Date and Time	Date and time of day.

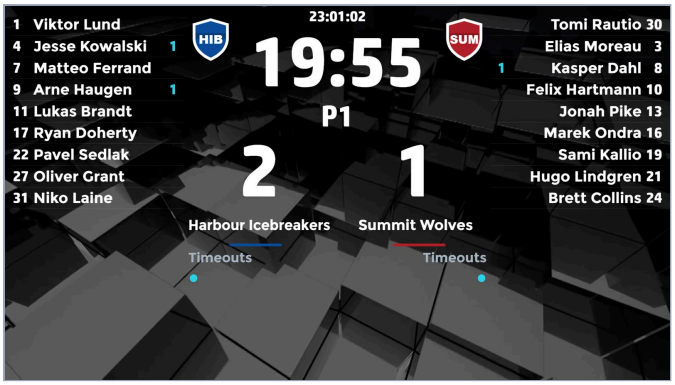


Figure 139. St with Player Panels on: both team lists with goals and penalty minutes. Player Panels in the bottom bar.

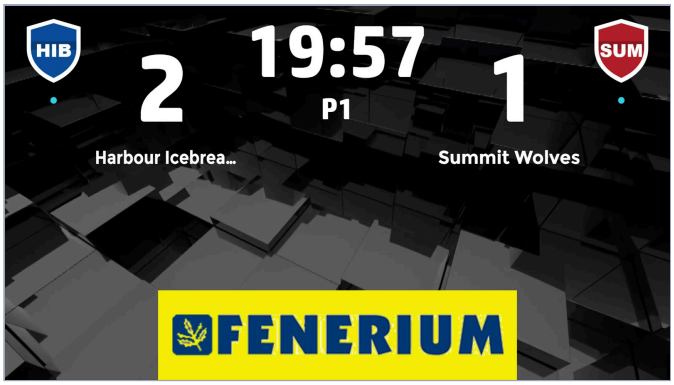


Figure 140. Sp: the score above the sponsor area.



Figure 141. Ad: short names, scores, clock and period beside the video or advert area.

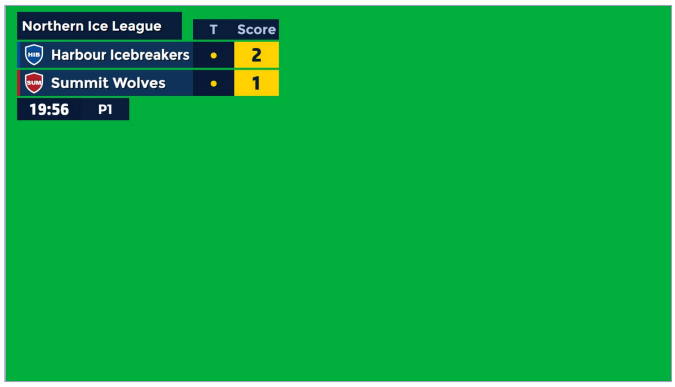


Figure 142. CK: the score bug with the period, the clock and the running penalties, on green for keying.

Info Screens and Broadcast Graphics

The St info screens replace the scoreboard; the CK graphics appear on the green background. Intro, Result and Announce are on the on-air rows of the Game page; the event screens are sent from the Info page (they show what you entered there), and every screen can be put on air from the Screens page.



Figure 143. St Intro: event, teams with logos, venue, date and time. St · Intro before the face-off.

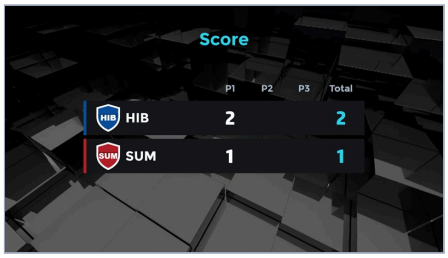


Figure 144. St Result (Score): goals of each period and the total. St · Result at the intermissions and after the game.

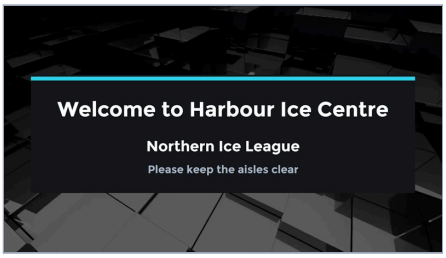


Figure 145. St Announce: title and lines of the announcement. St · Announce or Info ▸ Announce ▸ Show.



Figure 146. St Timeout: the team, its logo and the timeout countdown (30 s in ice hockey, 60 s in para ice hockey). St · Timeout.



Figure 147. St Goal: number, name, photo and team of the scorer with the score. Info ▸ Goal ▸ Show (With Picture).



Figure 148. St Penalty: the penalised player, the penalty and the time. Info ▸ Cards / Penalties ▸ Show.

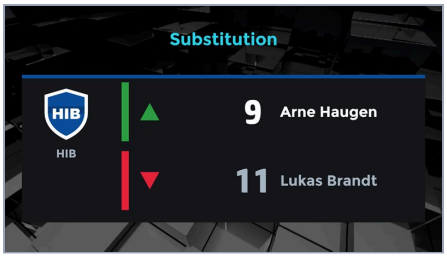


Figure 149. St Substitution: player in (▲) and player out (▼). Info ▸ Substitution ▸ Show.

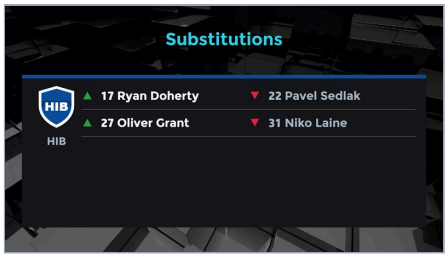


Figure 150. St Substitutions: up to five in / out pairs of one team (line changes). Info ▸ Multiple Substitution ▸ Show.



Figure 151. St Player Intro: one player with number, name and photo. Info ▸ Player Intro ▸ Show.



Figure 152. St Team List: the whole team list with the coach. Info ▸ Team Lists ▸ team button.



Figure 153. St Officials: referees and linespersons. Info ▸ Officials ▸ Show.

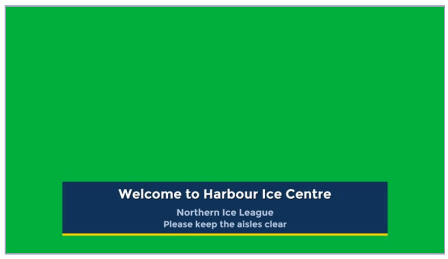


Figure 154. CK Lower Third: announcement title and two lines. CK · Lower Third or Announce Show.

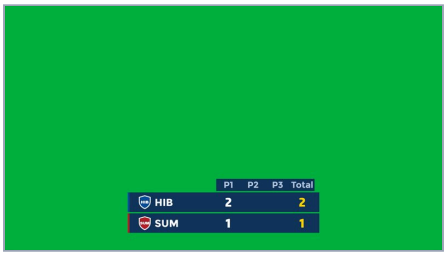


Figure 155. CK Result: period scores and totals as a lower third. CK · Result.



Figure 156. CK Player: scorer (or player intro) with photo, number, name and team. Info ▸ Goal / Player Intro with CK ticked.



Figure 157. CK Substitution: in / out as a lower third. Info ▸ Substitution with CK ticked.



Figure 158. CK Substitutions: several pairs of one team. Info ▸ Multiple Substitution.



Figure 159. CK Team List: a team list panel at the side. Info ▸ Team Lists.



Figure 160. CK Officials: the officials panel. Info ▸ Officials ▸ Show.

The Hockey Remote Control

The remote shows the scores, the clock and the period, a block per team (+1 Goal, Timeout, the shoot-out buttons, Minor Penalty, Major Penalty, Misconduct and, under Corrections, −1 Goal and Remove Kick), the Match block (Start / Stop, Set Clock, Next Period, End Timeout, Start / End Shoot-Out, Undo) and Match Control (New Match). A penalty button asks for the player number in a sheet.

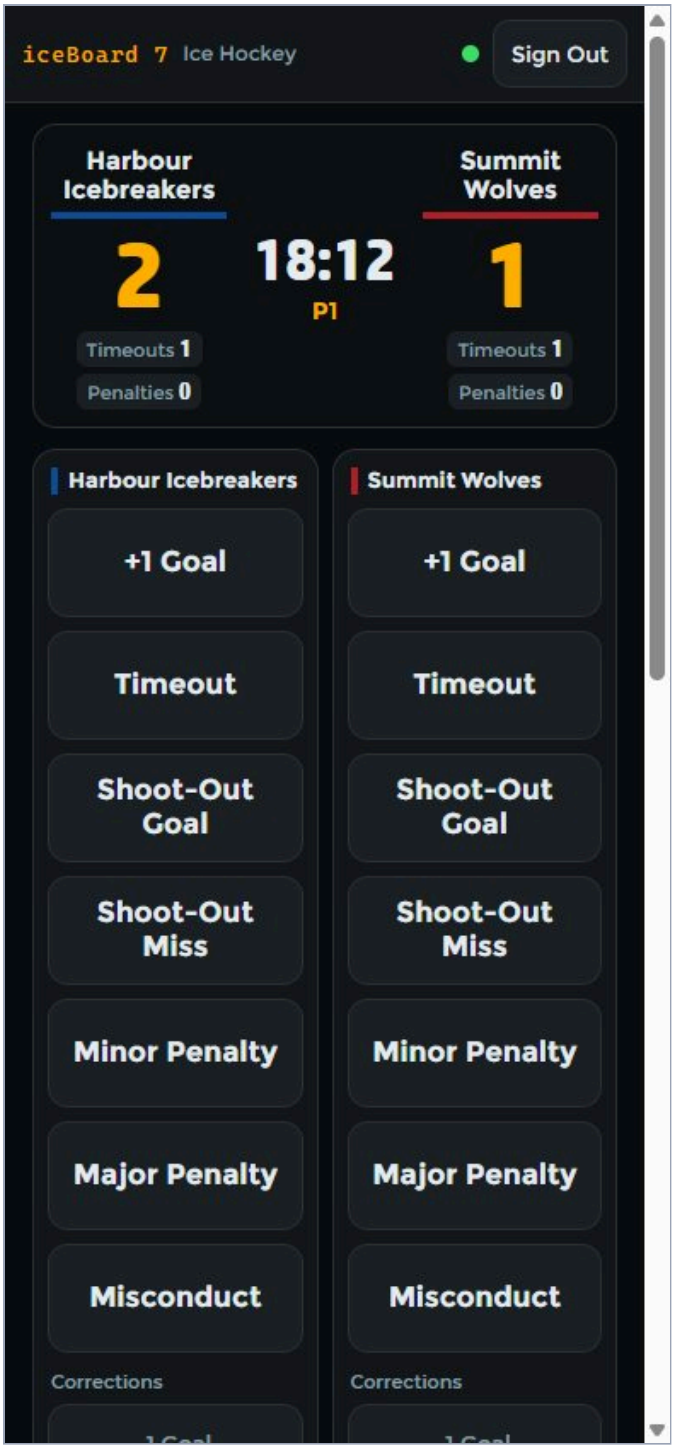


Figure 161. Phone: scores, clock and period, both team blocks.

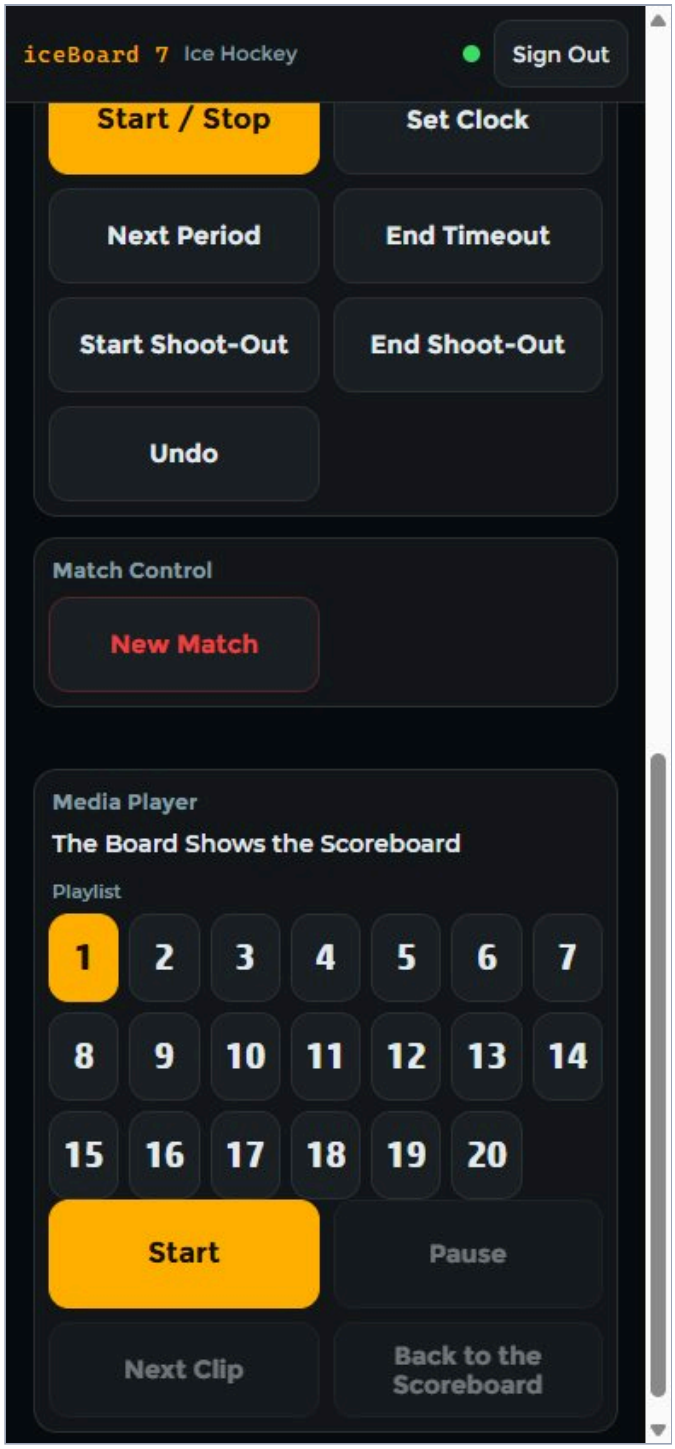


Figure 162. Phone, scrolled down: Corrections, Match and Match Control.

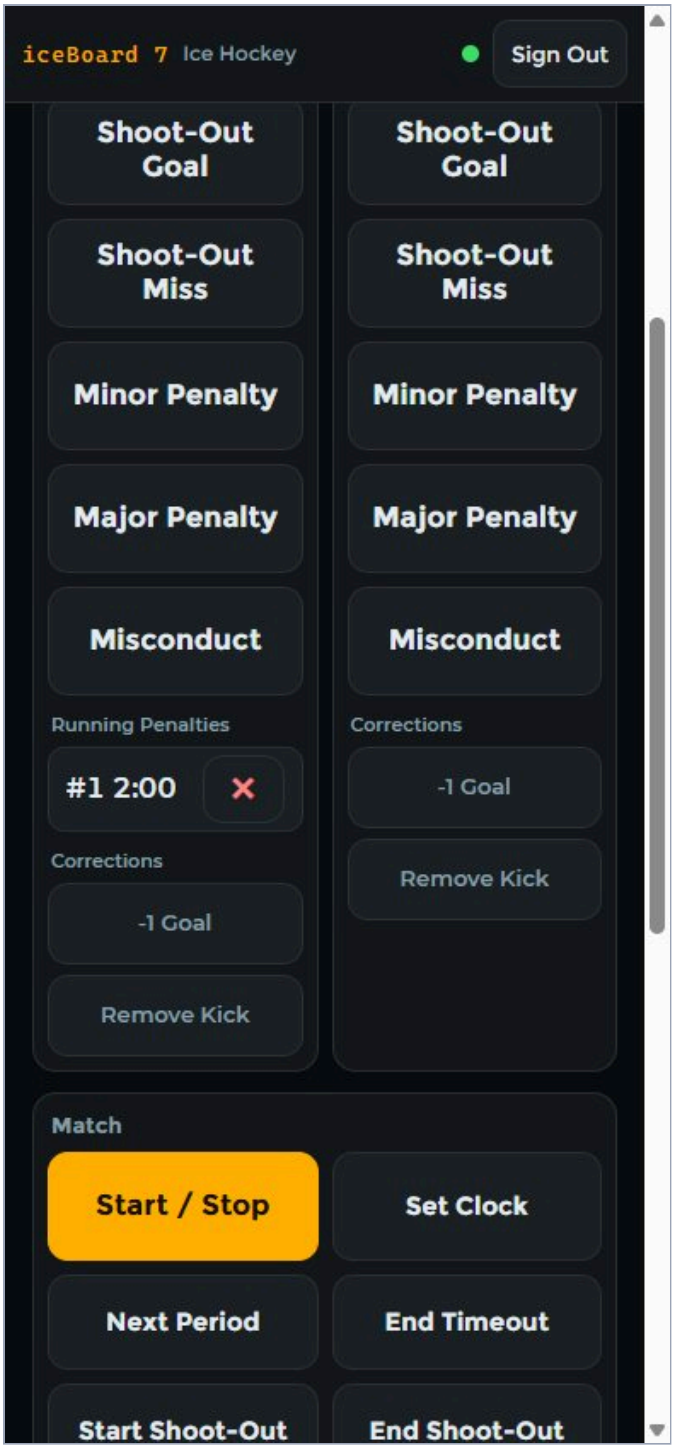


Figure 163. Phone: the running penalties under the team blocks, each with ✕ to remove it.

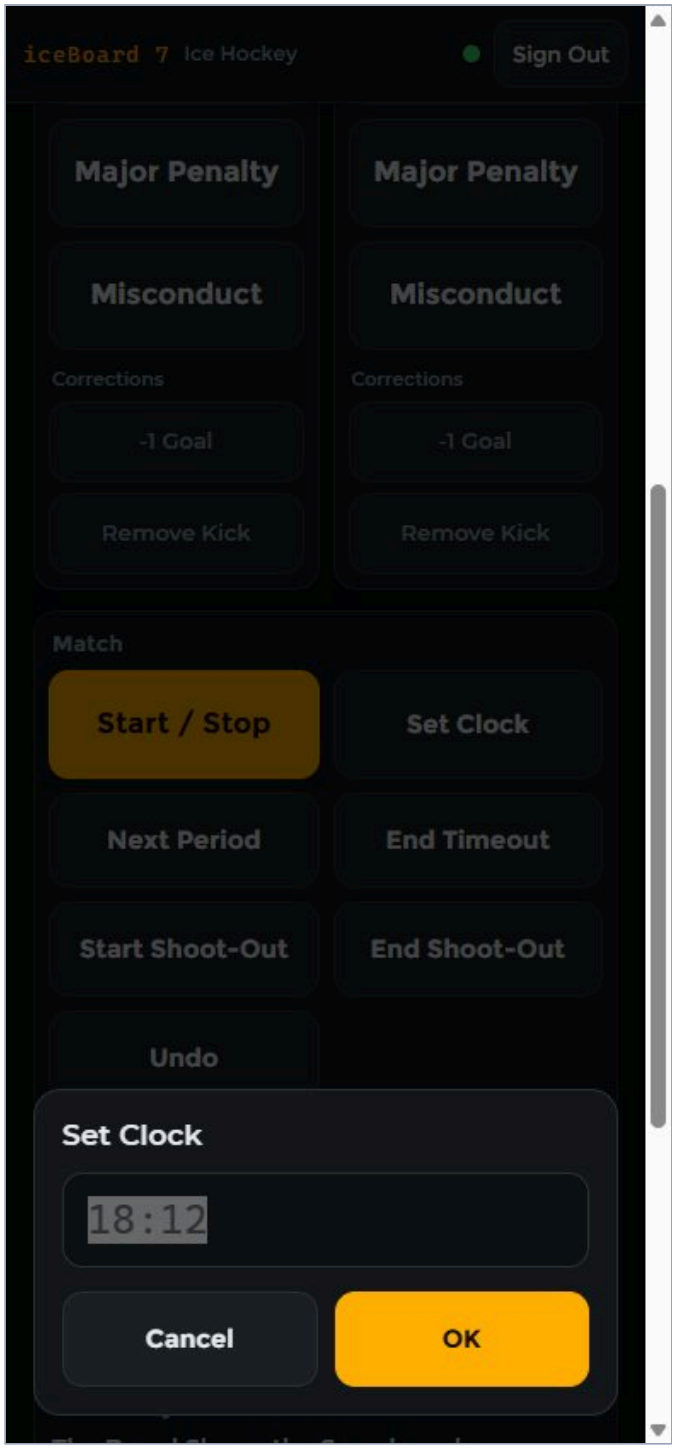


Figure 164. Phone: the Set Clock sheet.

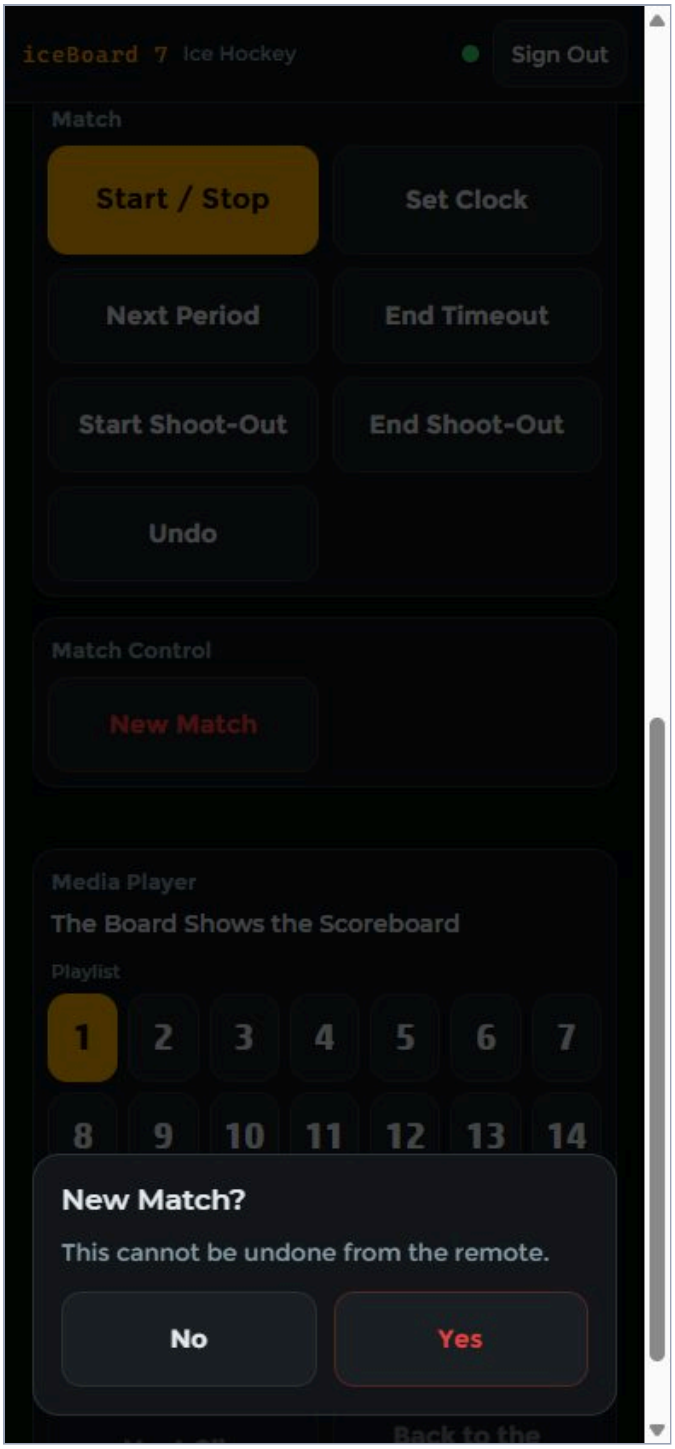


Figure 165. Phone: the confirmation sheet of New Match.

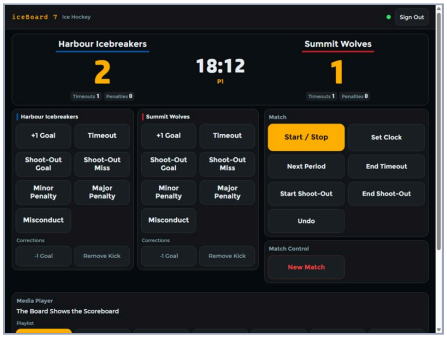


Figure 166. Tablet: the same blocks side by side.

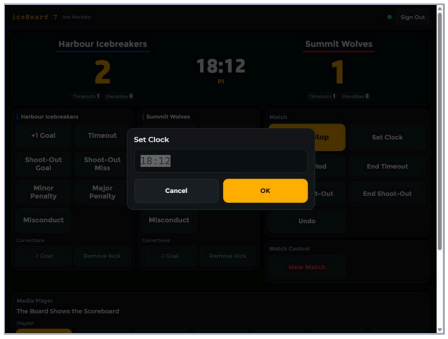


Figure 167. Tablet: the Set Clock sheet.

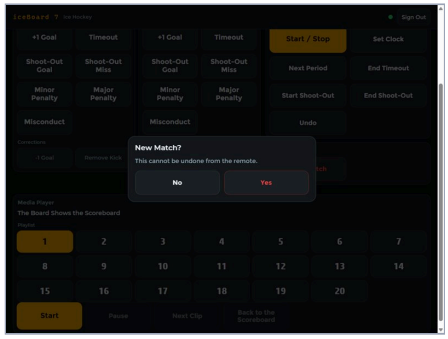


Figure 168. Tablet: the confirmation sheet.

Remote button	Where	What it does
+1 Goal	Team block	A goal for that team.
Timeout	Team block	The team's timeout; the countdown shows under the scores.
Minor Penalty / Major Penalty / Misconduct	Team block	The penalty for a player: the sheet asks for the number.
Shoot-Out Goal / Shoot-Out Miss	Team block	One shot of the penalty shot shootout.
Remove Kick	Team block ▸ Corrections	Takes back the team's last shoot-out shot.
Start Shoot-Out / End Shoot-Out	Match	Starts the shootout after the overtime, or ends it.
−1 Goal	Team block ▸ Corrections	Takes back a goal.
Start / Stop	Match	Starts or stops the game clock (the big amber button).
Set Clock	Match	Opens a sheet with the clock time selected; type m:ss and tap OK.
Next Period	Match	Goes to the next period; the clock is reset and stopped.
End Timeout	Match	Ends a running timeout early.
Undo	Match	Takes back the last change (the clock time is not changed).
New Match	Match Control	Starts a new match after the confirmation *New Match?* **This cannot be undone from the remote**.

Hockey Scenarios

1. Choose the player in the home number box (▾) and click **2 Min**. The penalty runs under the home score and on the boards.
2. The visitors score: choose the scorer in the guest number box and click the guest ↑. The clock stops, and the home minor ends with the goal.
3. Show the scorer with the Info page Goal row (St and CK).
4. Restart the clock with `F1` at the face-off.

1. Click **Overtime**. The clock is set to 5:00; start it at the face-off. The first goal ends the game.
2. Still tied? Click **Shoot-Out**. On the remote, tap **Shoot-Out Goal** or **Shoot-Out Miss** for each shot (or use the keys and the Game panel). The marks show on the boards.
3. After 5 shots each (para ice hockey: 3) the leader wins; if level, the shootout continues one shot each. The winner gets one goal in the final score (2–2 becomes 3–2), and the shootout line stays on the boards.

1. Choose **Hockey** ▸ **Para Ice Hockey**. The clock shows 15:00.
2. Each team has one 60-second timeout: start it with the green button under the timeout countdown.
3. For a playoff game with a 10-minute overtime, change the overtime length in Time Settings before the game.

21 Ringette

Ringette uses the hockey Game panel with the 30-second shot clock above the game clock. The penalty buttons follow the Ringette Canada penalty types: **2 Min** (minor), **US 2** (Unsportsmanlike Conduct), **4 Min** (major), **Misc** (Misconduct, game ejection) and **MP** (Match Penalty, game ejection). The tool tip of each button names the penalty. All penalty buttons of a team use one caption size, the largest at which every caption fits; in a very small window a caption that still does not fit ends in "…" and the tool tip shows it in full.

Rules as Implemented

- Rule 6.2: four periods of 10:00 stop time for U16 and older at the AA level; two periods of 20:00 below the AA level; two periods of 15:00 for U14 and younger. Three disciplines carry these lengths.
- Rule 6.4: overtime at the discretion of the organisers, periods of regulation length; unexpired penalties carry over. iceBoard 7 gives one overtime period of regulation length that is not sudden death; its length can be changed in Time Settings.
- Rule 6.5: one 30-second timeout per team per game and one more per full-length overtime period; unused timeouts accumulate.
- Rule 20.3: minor 2:00; Unsportsmanlike Conduct 2:00 fully served; Major 4:00 fully served; Misconduct and Match Penalty are game ejections (a teammate serves an Unsportsmanlike Conduct or a Major – enter it as its own penalty).
- Rule 21.2: at most two penalties of a team are timed at once; the others wait. Rule 21.4: a goal against the short-handed team cancels a minor; fully served penalties are never cancelled.
- Rule 24.3: the shot clock is set to 30 seconds at the start of each period and after a goal, runs only with the game clock and is switched off when the period has less time left. The other resets (a shot on goal, a change of control, a delayed penalty) are made by the operator with the 30 button.

The Game Panel



Figure 169. The ringette Game panel with the 30-second shot clock.

#	Control	What it does
1	**Discipline**	Shows the discipline and opens Choose Sport and Discipline.
2	**Shot Clock Start**	Starts the shot clock by hand (it normally runs with the game clock).
3	**Shot Clock**	The 30-second shot clock: it runs only while the game clock runs, is set to 30 after a goal and at the start of each period, and is switched off when the period has less time left than the shot clock. Click the digits to start a stopped shot clock; **double-click** them to type a value from 0 to 30 (the double-click does not start it).
4	**Reset to 30**	Resets the shot clock to 30 after a shot on goal, a change of control or a delayed penalty (ringette rule 24.3 d).
5	**Shot Clock to 0**	Sets the shot clock to 0 and stops it, without the shot-clock buzzer (the boards show 0); 30 starts it again.
6	**Clock**	Counts down from 10:00 (or 20:00 / 15:00), green while running. Double-click to set it.
7	**2 Min (Minor Penalty)**	A minor penalty of 2:00. A goal of the other team cancels it (ringette rule 21.4).
8	**US 2 (Unsportsmanlike Conduct)**	Unsportsmanlike Conduct, 2:00 fully served: a goal does not end it.
9	**4 Min (Major Penalty)**	A major penalty of 4:00, fully served.
10	**MP (Match Penalty)**	Game ejection; a teammate serves a Major (enter it with the major button).
11	**Period Buttons**	Click a period to go to it; the clock resets and stops. `F2` goes to the next period.
12	**Overtime**	One overtime period of regulation length, not sudden death (its length can be changed in Time Settings).
13	**St Screen Row**	The St screens of ringette: **Game**, **Intro**, **Result** and **Announce** and **Timeout**. The other event screens (goal, penalty, substitution, team list, officials) come from the Info page (see the Outputs section below).
14	**CK Screen Row**	The CK screens: **Game** (score bug), **Lower Third** and **Result**.
15	**Undo**	Takes back the last change (`F12`).

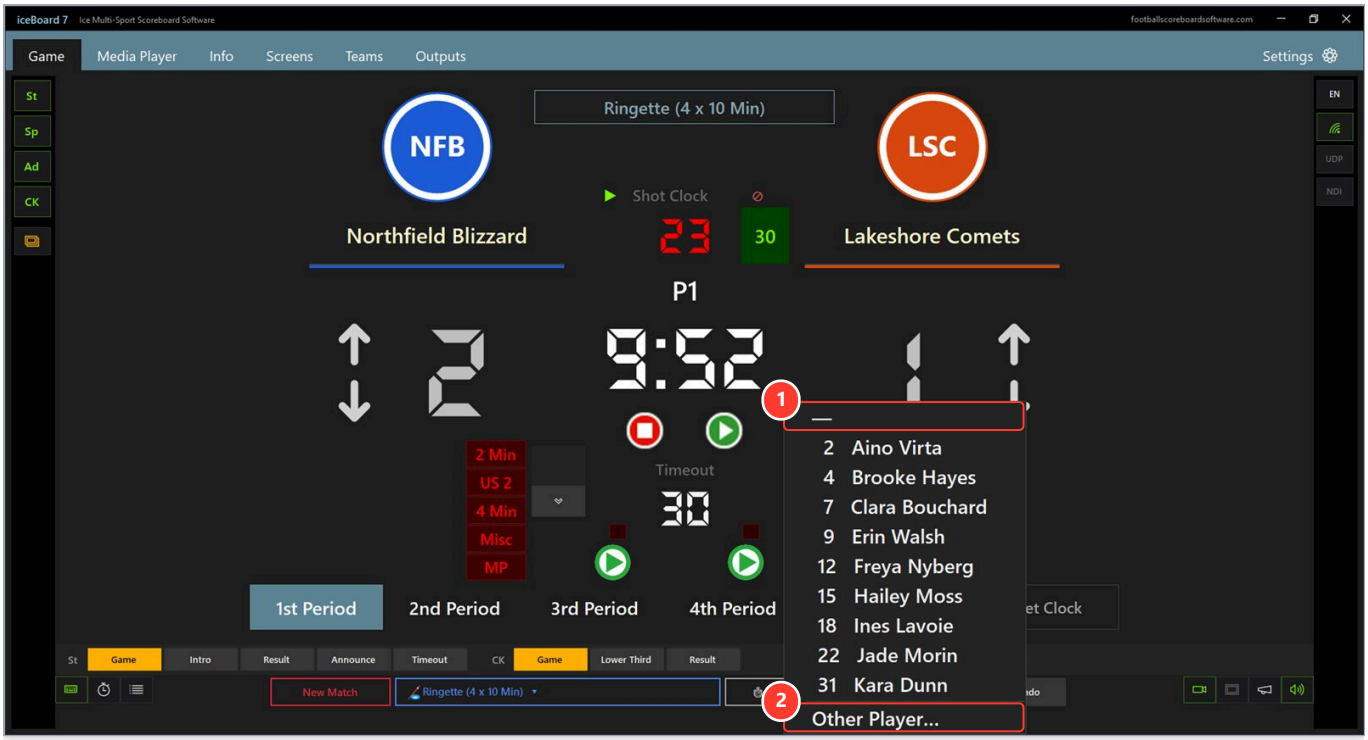


Figure 170. The player list (▾) under the home number box (ringette).

#	Control	What it does
1	**Players**	The team list in number order. Click a player to put the number into the box: the next goal or penalty is credited to that player, then the box clears.
2	**Other Player...**	Opens the Other Player dialog for a player who is not in the list.

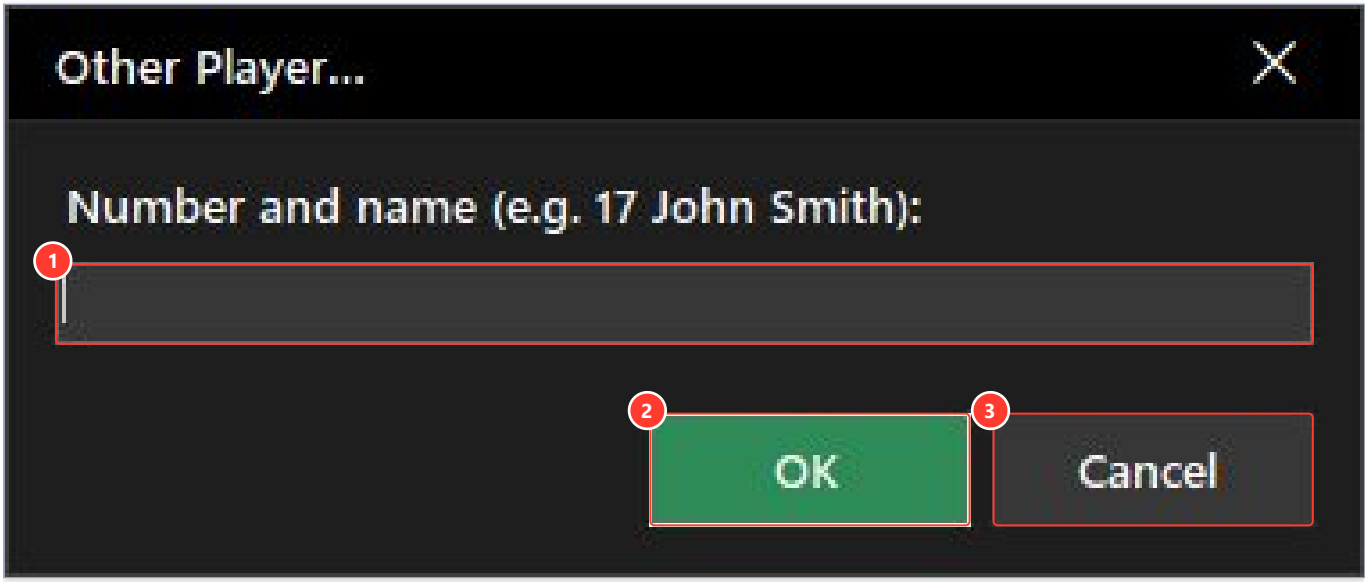


Figure 171. Other Player... asks for the number and the name of a player who is not in the list (ringette).

#	Control	What it does
1	**Number and Name**	Type the shirt number, and if you like the name after it (e.g. *17 Ola Berg*). A new number with a name is added to the team list.
2	**OK**	Uses the player for the next goal or penalty.
3	**Cancel**	Closes the dialog without a change.



Figure 172. Set Clock: type the time the clock shall show.

#	Control	What it does
1	**Time on the Clock**	Shows the clock time at the moment you opened the dialog. Type the new time as m:ss (or m:ss.t), e.g. *12:30*. The time must lie within the period. Opened by ⏱ Set Clock or a double-click on the clock.
2	**OK**	Sets the clock. A running clock keeps running from the new time.
3	**Cancel**	Leaves the clock as it is.

Time Settings

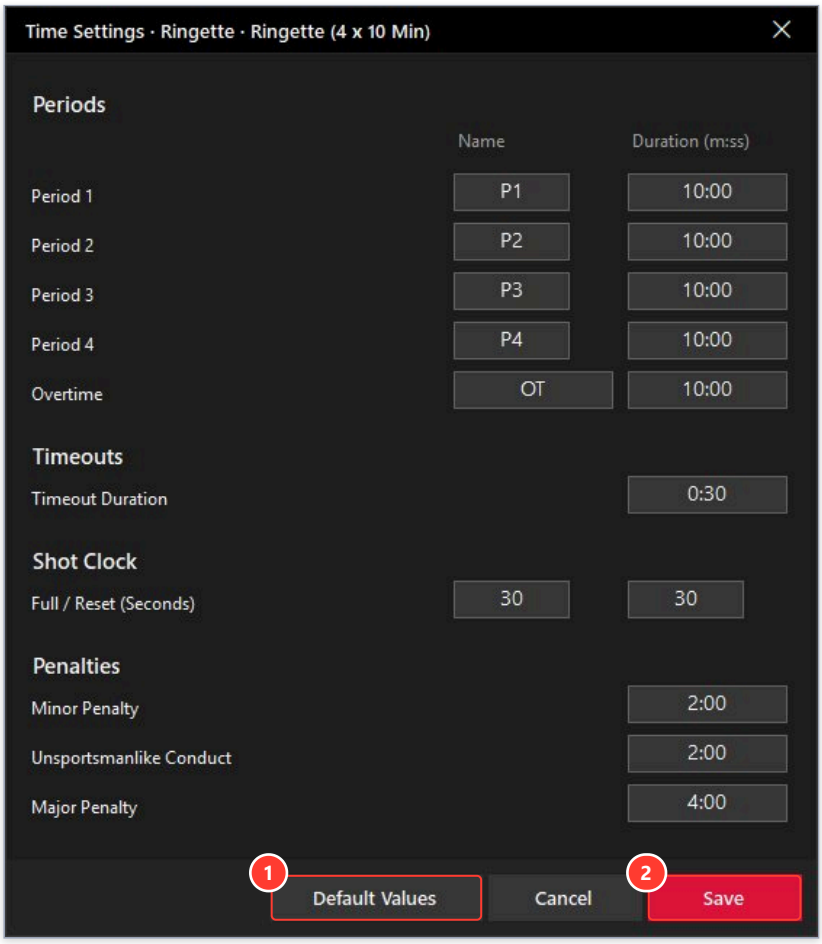


Figure 173. Time Settings for ringette.

#	Control	What it does
1	**Default Values**	Puts the rule book values back (asks first).
2	**Save**	Saves the period, overtime, shot clock, timeout and penalty lengths of the discipline.

Use the three disciplines for the standard lengths; Time Settings changes a discipline for your league (e.g. two 18-minute periods).

The Info Page for Ringette

The Info page of ringette has the same rows as hockey; the choice list of the penalty row lists the ringette penalty types.

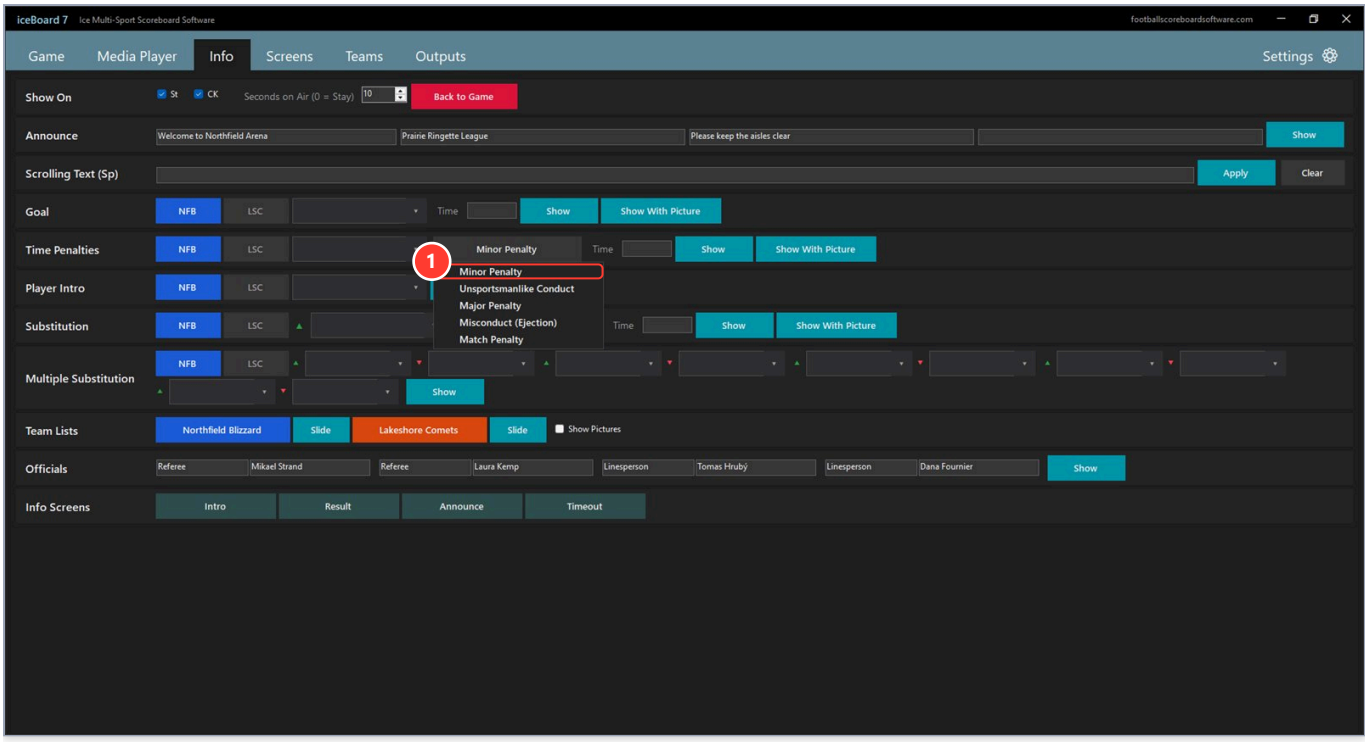


Figure 174. The penalty types in the choice list of the Info page (ringette).

#	Control	What it does
1	**Penalty Types**	Minor Penalty, Unsportsmanlike Conduct, Major Penalty, Misconduct (Ejection), Match Penalty: the title of the graphic.

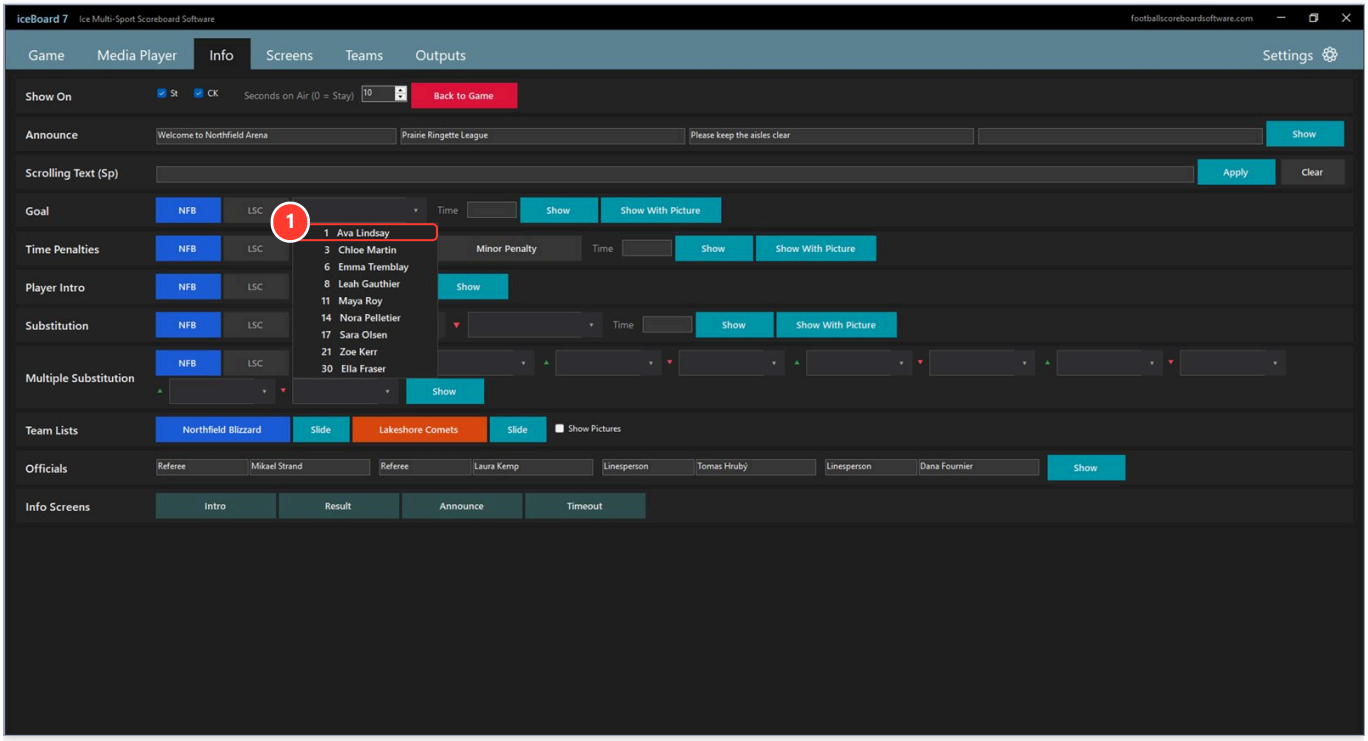


Figure 175. The player list of an Info page row (ringette).

#	Control	What it does
1	**Players**	Click a player to put number and name into the field.

Ringette Outputs

The Game Screens

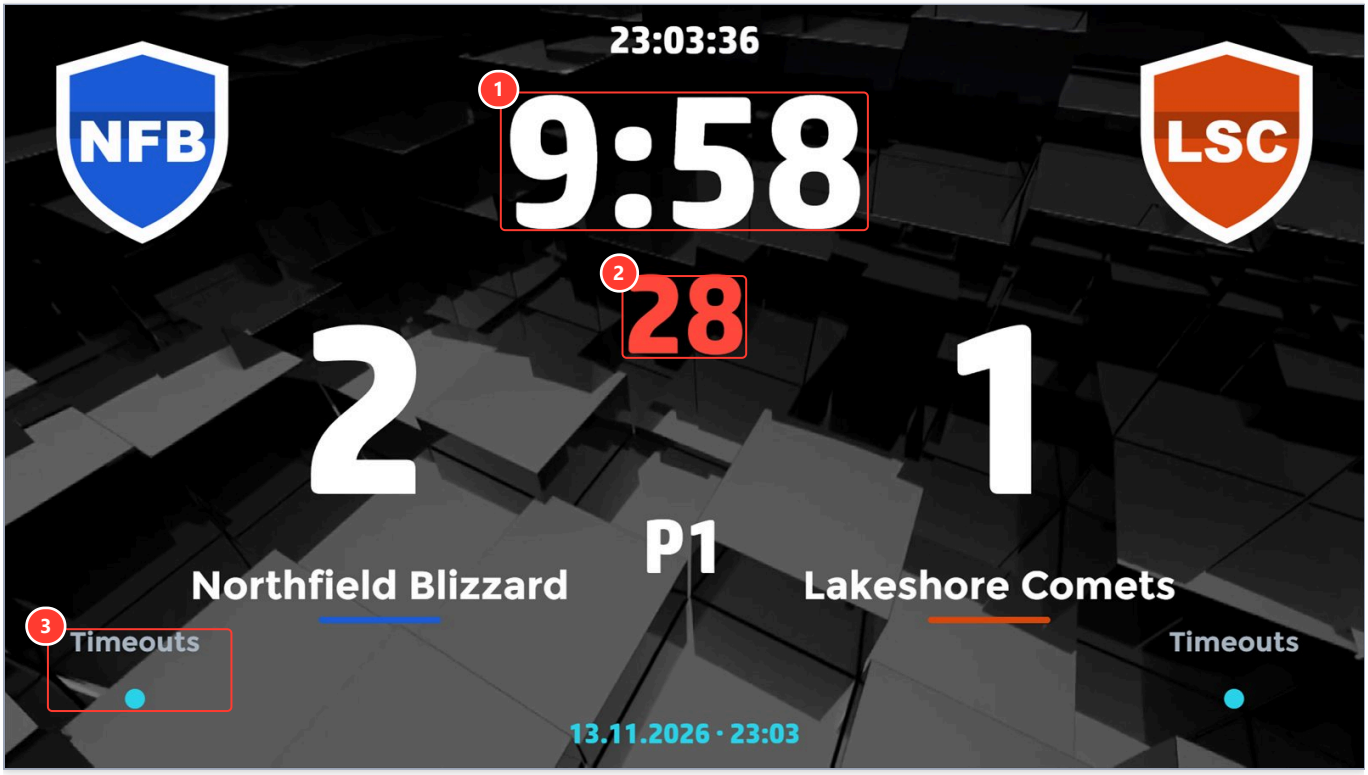


Figure 176. The ringette St board with the shot clock (red) under the game clock.

#	Control	What it does
1	Clock	The game clock.
2	Shot Clock	The 30-second shot clock; hidden while switched off.
3	Timeouts	The timeouts left, as dots.

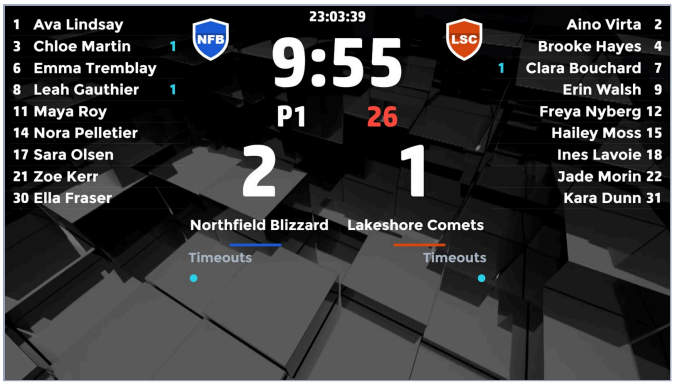


Figure 177. St with Player Panels on.



Figure 178. Sp: the score above the sponsor area.



Figure 179. Ad: the score column beside the advert area.

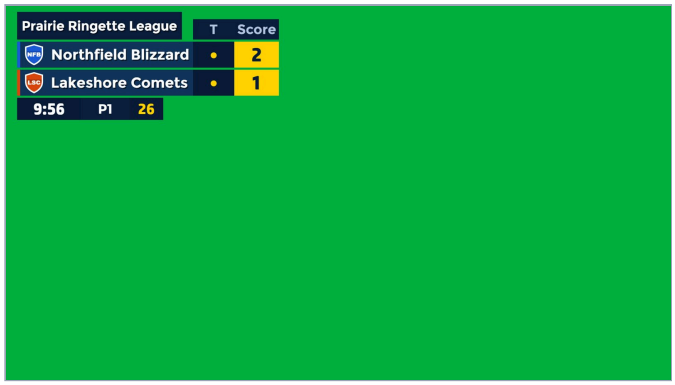


Figure 180. CK: the score bug with the shot clock.

Info Screens and Broadcast Graphics

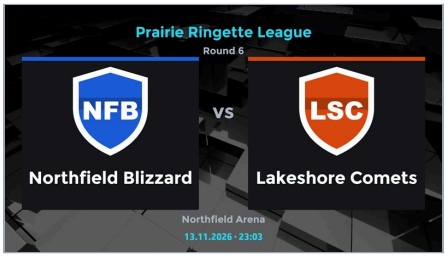


Figure 181. St Intro: event, teams with logos, venue, date and time. St · Intro before the face-off.

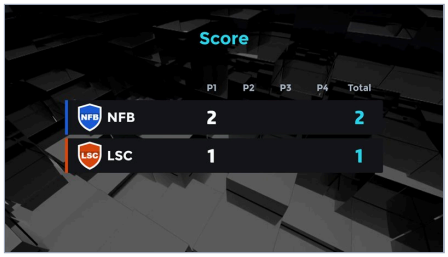


Figure 182. St Result (Score): goals of each period and the total. St · Result at the intermissions and after the game.

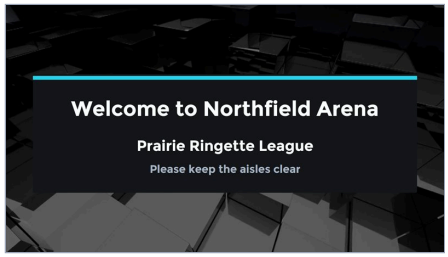


Figure 183. St Announce: title and lines of the announcement. St · Announce or Info ▸ Announce ▸ Show.

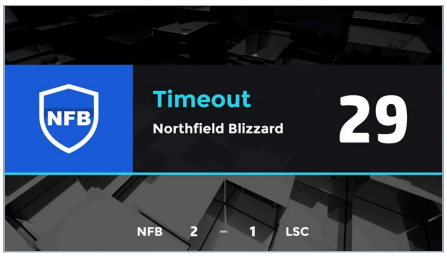


Figure 184. St Timeout: the team, its logo and the timeout countdown. St · Timeout.



Figure 185. St Goal: number, name, photo and team of the scorer with the score. Info ▸ Goal ▸ Show (With Picture).



Figure 186. St Penalty: the penalised player, the penalty and the time. Info ▸ Cards / Penalties ▸ Show.

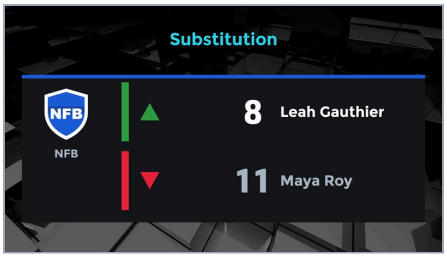


Figure 187. St Substitution: player in (▲) and player out (▼). Info ▸ Substitution ▸ Show.

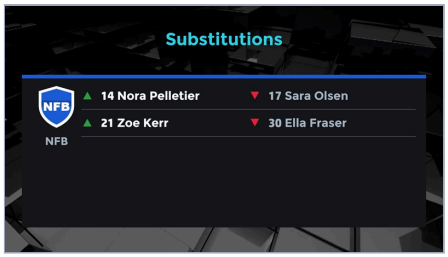


Figure 188. St Substitutions: up to five in / out pairs of one team (line changes). Info ▸ Multiple Substitution ▸ Show.



Figure 189. St Player Intro: one player with number, name and photo. Info ▸ Player Intro ▸ Show.



Figure 190. St Team List: the whole team list with the coach. Info ▸ Team Lists ▸ team button.

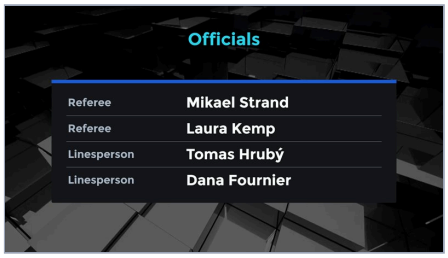


Figure 191. St Officials: referees and linespersons. Info ▸ Officials ▸ Show.

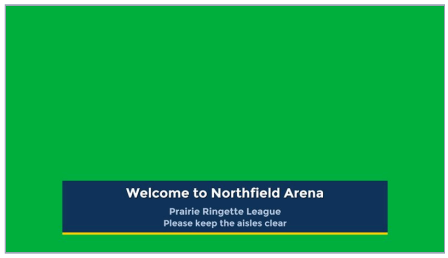


Figure 192. CK Lower Third: announcement title and two lines. CK · Lower Third or Announce Show.

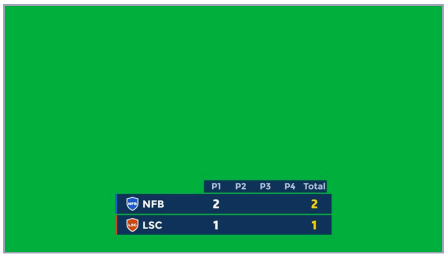


Figure 193. CK Result: period scores and totals as a lower third. CK · Result.



Figure 194. CK Player: scorer (or player intro) with photo, number, name and team. Info ▸ Goal / Player Intro with CK ticked.



Figure 195. CK Substitution: in / out as a lower third. Info ▸ Substitution with CK ticked.



Figure 196. CK Substitutions: several pairs of one team. Info ▸ Multiple Substitution.



Figure 197. CK Team List: a team list panel at the side. Info ▸ Team Lists.

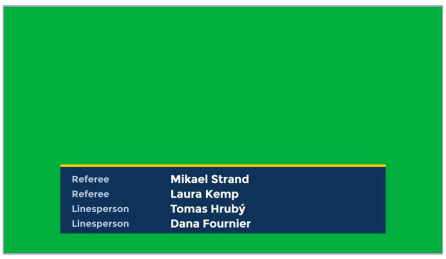


Figure 198. CK Officials: the officials panel. Info ▸ Officials ▸ Show.

The Ringette Remote Control

The remote shows the scores, the clock, the period and the shot clock, a block per team with +1 Goal, Timeout and the ringette penalty buttons, and the Match block with Start / Stop, Set Clock, the shot clock buttons (reset, stop and start, Shot Clock to 0, Set Shot Clock) and Next Period.

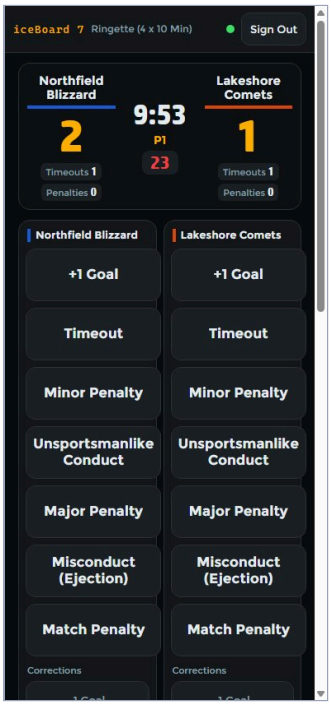


Figure 199. Phone: scores, clock and period, both team blocks.

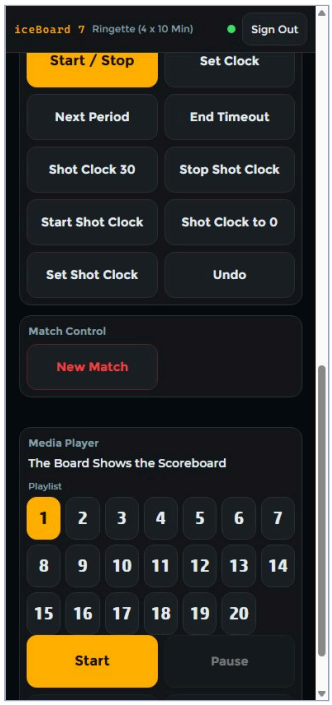


Figure 200. Phone, scrolled down: Corrections, Match and Match Control.

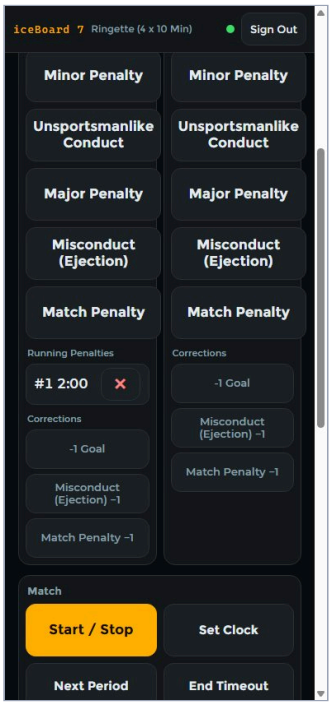


Figure 201. Phone: the running penalties under the team blocks, each with ✕ to remove it.

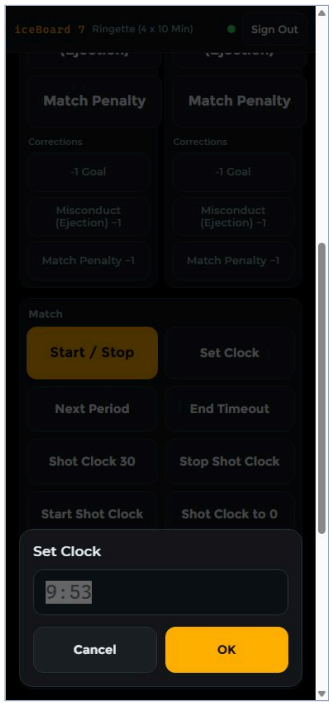


Figure 202. Phone: the Set Clock sheet.

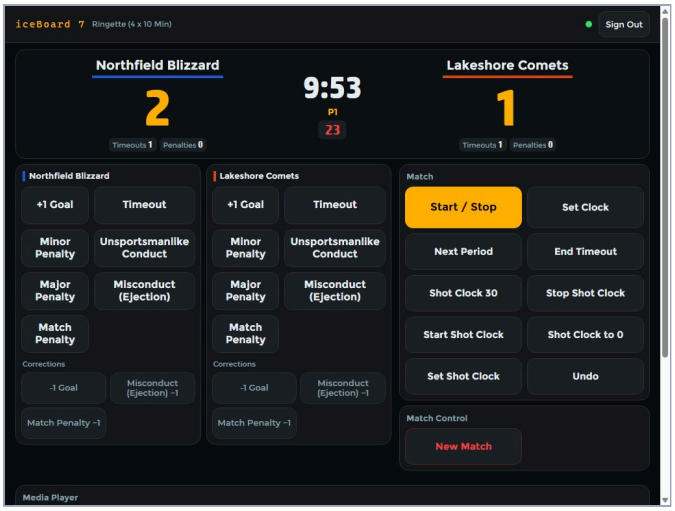


Figure 203. Tablet: the same blocks side by side.

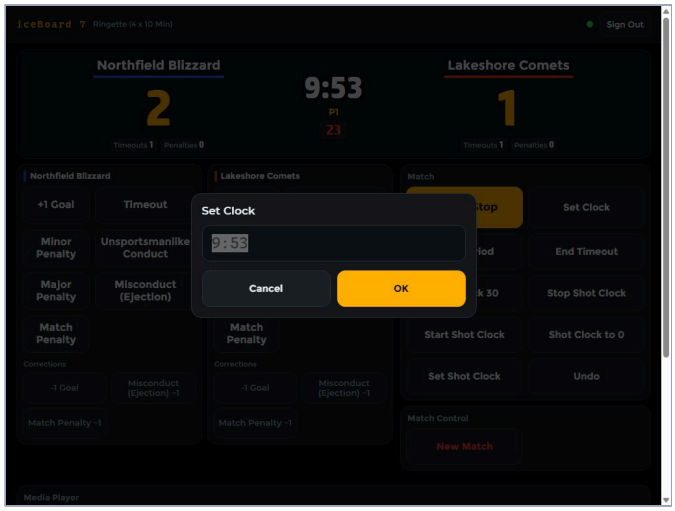


Figure 204. Tablet: the Set Clock sheet.

Remote button	Where	What it does
+1 Goal	Team block	A goal for that team.
Timeout	Team block	The team's timeout; the countdown shows under the scores.
Minor Penalty … Match Penalty	Team block	The ringette penalty types; the sheet asks for the player number.
Reset Shot Clock	Match	Sets the shot clock back to 30.
−1 Goal	Team block ▸ Corrections	Takes back a goal.
Start / Stop	Match	Starts or stops the game clock (the big amber button).
Set Clock	Match	Opens a sheet with the clock time selected; type m:ss and tap OK.
Next Period	Match	Goes to the next period; the clock is reset and stopped.
End Timeout	Match	Ends a running timeout early.
Undo	Match	Takes back the last change (the clock time is not changed).
New Match	Match Control	Starts a new match after the confirmation *New Match?* **This cannot be undone from the remote**.

Ringette Scenarios

1. After the shot on goal, click **30**: the shot clock goes back to 30.
2. At the whistle, choose the player in the guest number box and click **2 Min**. The penalty starts with the next face-off.
3. If the home team scores on the power play, the minor is cancelled by itself.

1. Choose the player and click **Misc**: the player is marked out for the rest of the game.
2. A teammate serves an Unsportsmanlike Conduct penalty: choose the teammate and click **US 2**.

22 Broomball

Broomball uses the hockey Game panel. The two disciplines differ only in the overtime: **Broomball (Round Robin)** plays one 5-minute sudden-death period and a tie stands after it; **Broomball (Playoff)** plays 18-minute sudden-death periods until a goal.

Rules as Implemented

- Canadian Broomball Federation Rulebook 2025–2027, article 43: a game of at least 36 minutes stop time in at least two periods – two periods of 18:00; one 60-second timeout per team per game.
- Article 49: overtime is played three against three (not shown on the board); round robin 5:00 sudden death, playoff 18:00 sudden-death periods.
- Article 78: minor penalty 2:00 stop time; a goal against the short-handed team ends it. Article 81: major 5:00, whether a goal is scored or not. Article 85: misconduct 10:00, the team does not play short. Article 88: game misconduct, expelled for the rest of the game.
- Article 43 b (the clock runs at straight time after a five-goal difference, the game ends at eight) is handled by the operator: stop using Stop between whistles or end the game.
- At most two penalties of a team are timed at once (the ice hockey practice).
- The International Federation of Broomball Associations publishes no rule book of its own online; the values follow the rule book of its founding member, the Canadian Broomball Federation.

The Game Panel



Figure 205. The broomball Game panel.

#	Control	What it does
1	**Discipline**	Shows the discipline (Round Robin or Playoff) and opens Choose Sport and Discipline.
2	**Minor Penalty (2 Min)**	A minor penalty of 2:00 stop time; a goal of the other team ends it.

#	Control	What it does
3	**Major Penalty (5 Min)**	A major penalty of 5:00, served in full.
4	**Misconduct (10 Min)**	A misconduct of 10:00: the player sits out, the team does not play short.
5	**GM (Game Misconduct)**	The player is expelled for the rest of the game (counted, not timed).
6	**Period Buttons**	Two periods of 18:00 (1st Period, 2nd Period). `F2` goes to the next period.
7	**Overtime**	Round robin: one 5:00 sudden-death period, a tie stands after it. Playoff: 18:00 sudden-death periods until a goal.
8	**St Screen Row**	The St screens of broomball: **Game**, **Intro**, **Result** and **Announce** and **Timeout**. The other event screens (goal, penalty, substitution, team list, officials) come from the Info page (see the Outputs section below).
9	**CK Screen Row**	The CK screens: **Game** (score bug), **Lower Third** and **Result**.
10	**Undo**	Takes back the last change (`F12`).

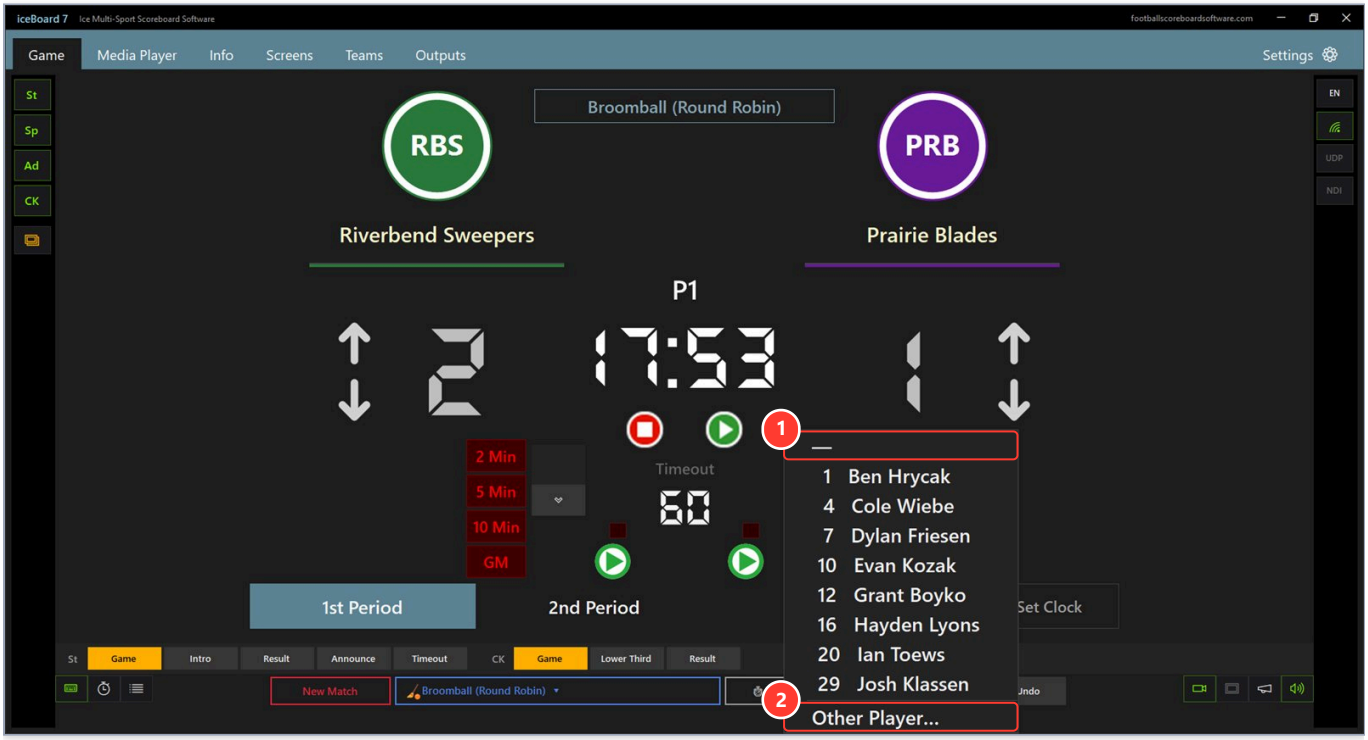


Figure 206. The player list (▾) under the home number box (broomball).

#	Control	What it does
1	**Players**	The team list in number order. Click a player to put the number into the box: the next goal or penalty is credited to that player, then the box clears.
2	**Other Player...**	Opens the Other Player dialog for a player who is not in the list.



Figure 207. Other Player... asks for the number and the name of a player who is not in the list (broomball).

#	Control	What it does
1	**Number and Name**	Type the shirt number, and if you like the name after it (e.g. *17 Ola Berg*). A new number with a name is added to the team list.
2	**OK**	Uses the player for the next goal or penalty.
3	**Cancel**	Closes the dialog without a change.

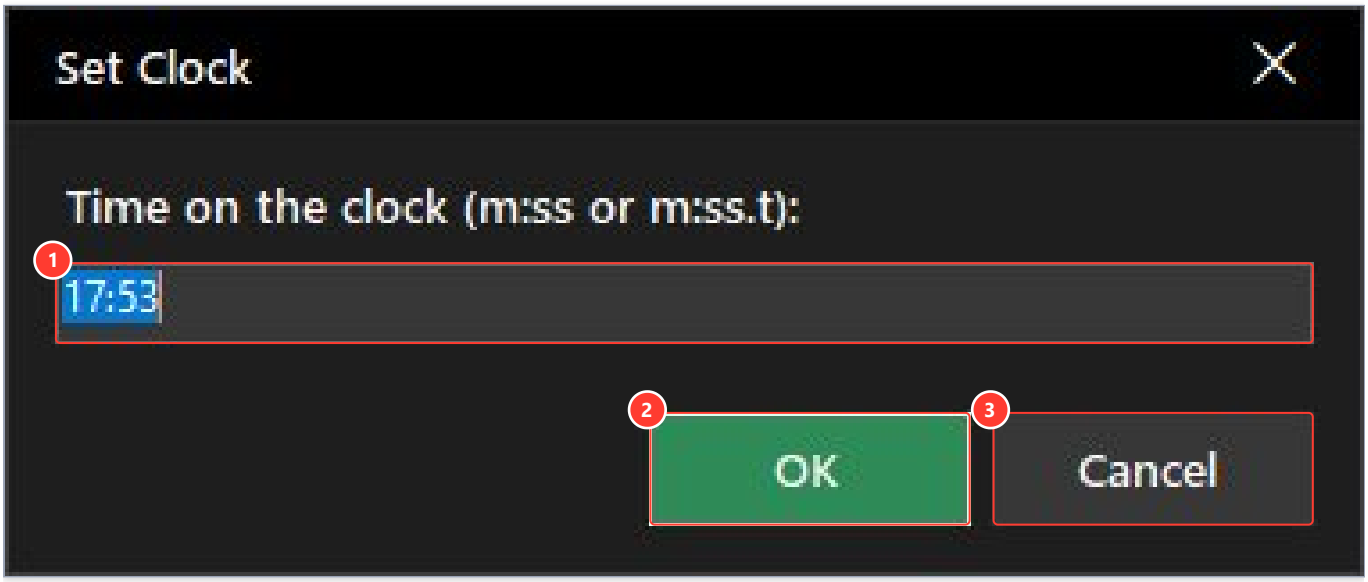


Figure 208. Set Clock: type the time the clock shall show.

#	Control	What it does
1	**Time on the Clock**	Shows the clock time at the moment you opened the dialog. Type the new time as m:ss (or m:ss.t), e.g. *12:30*. The time must lie within the period. Opened by ⏱ Set Clock or a double-click on the clock.
2	**OK**	Sets the clock. A running clock keeps running from the new time.
3	**Cancel**	Leaves the clock as it is.

Time Settings

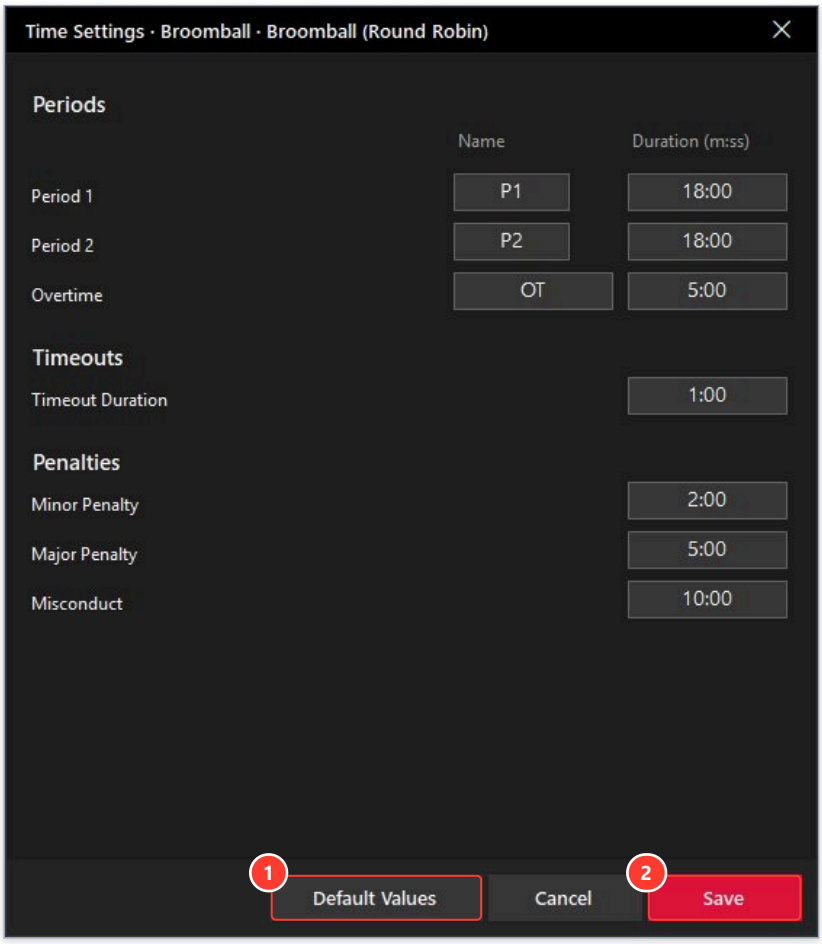


Figure 209. Time Settings for broomball.

#	Control	What it does
1	**Default Values**	Puts the rule book values back (asks first).
2	**Save**	Saves the period, overtime, timeout and penalty lengths (e.g. two 20-minute running-time periods for a recreational league).

The Info Page for Broomball

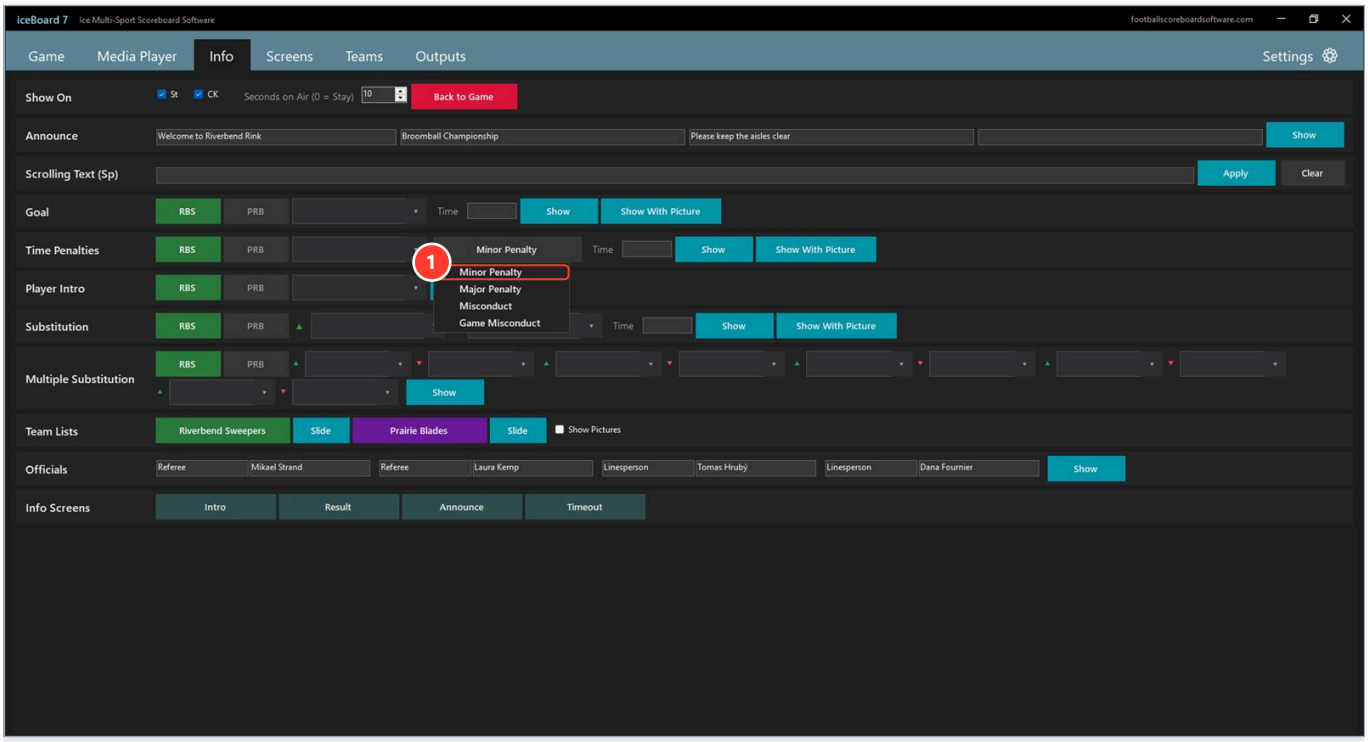


Figure 210. The penalty types in the choice list of the Info page (broomball).

#	Control	What it does
1	**Penalty Types**	Minor Penalty, Major Penalty, Misconduct, Game Misconduct: the title of the graphic.

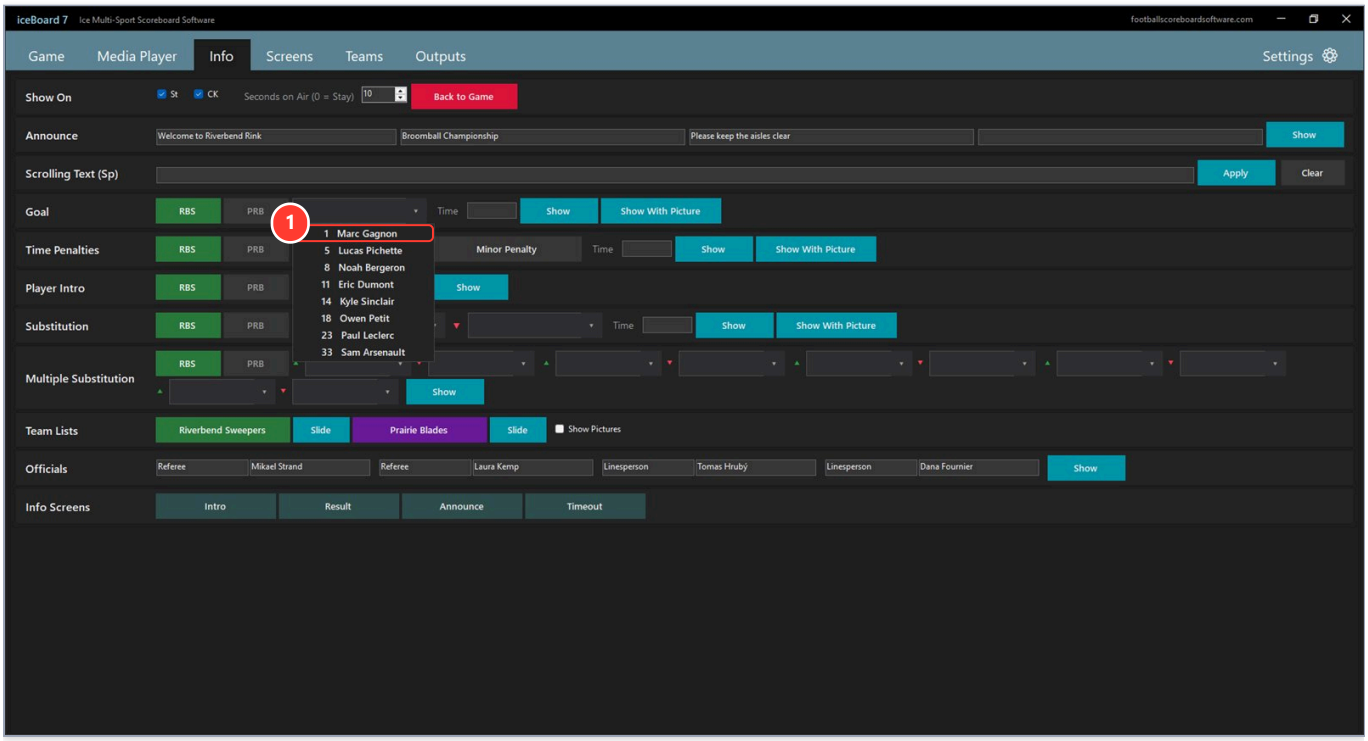


Figure 211. The player list of an Info page row (broomball).

#	Control	What it does
1	**Players**	Click a player to put number and name into the field.

Broomball Outputs

The Game Screens

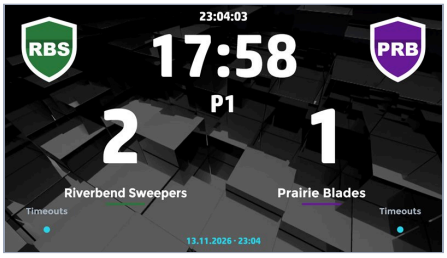


Figure 212. St: the broomball scoreboard with clock, period, scores and timeouts.

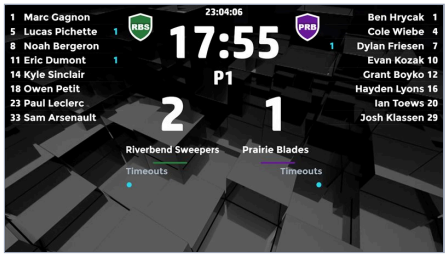


Figure 213. St with Player Panels on.

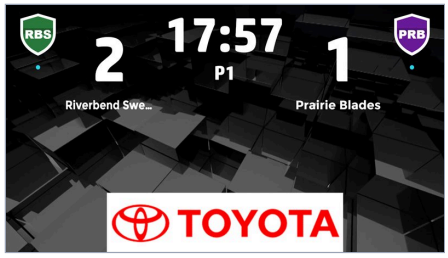


Figure 214. Sp: the score above the sponsor area.

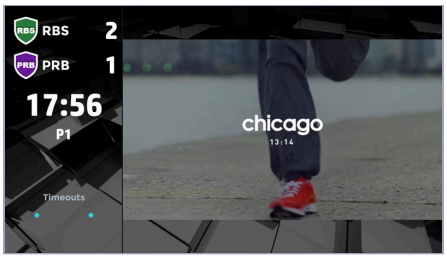


Figure 215. Ad: the score column beside the advert area.

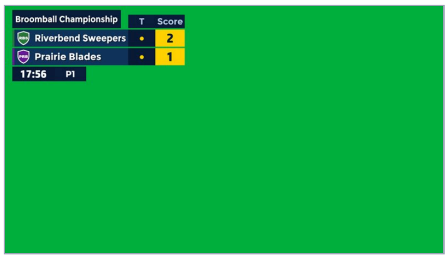


Figure 216. CK: the score bug.

Info Screens and Broadcast Graphics

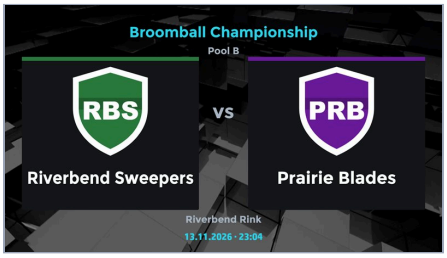


Figure 217. St Intro: event, teams with logos, venue, date and time. St · Intro before the face-off.

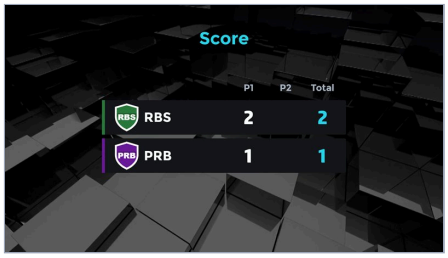


Figure 218. St Result (Score): goals of each period and the total. St · Result at the intermissions and after the game.

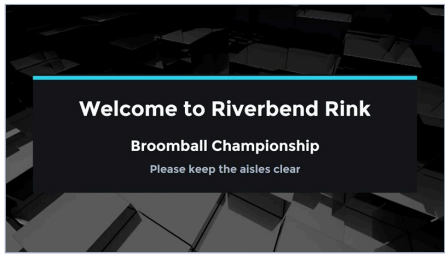


Figure 219. St Announce: title and lines of the announcement. St · Announce or Info ▸ Announce ▸ Show.

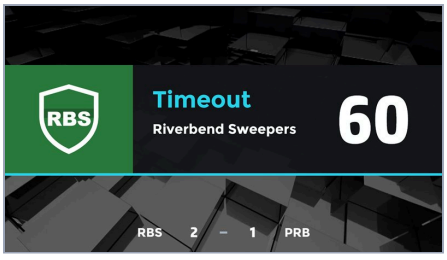


Figure 220. St Timeout: the team and the 60-second countdown. St · Timeout.

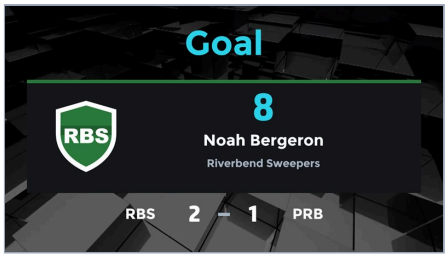


Figure 221. St Goal: number, name, photo and team of the scorer with the score. Info ▸ Goal ▸ Show (With Picture).



Figure 222. St Penalty: the penalised player, the penalty and the time. Info ▸ Cards / Penalties ▸ Show.

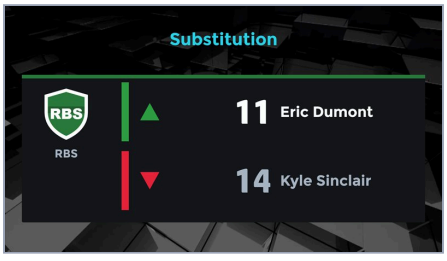


Figure 223. St Substitution: player in (▲) and player out (▼). Info ▸ Substitution ▸ Show.

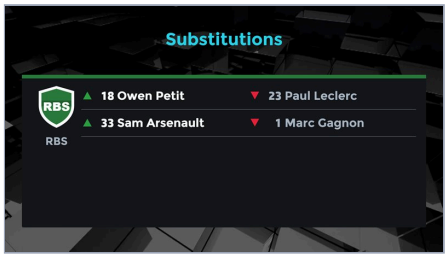


Figure 224. St Substitutions: up to five in / out pairs of one team (line changes). Info ▸ Multiple Substitution ▸ Show.

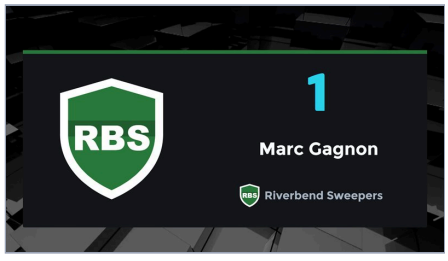


Figure 225. St Player Intro: one player with number, name and photo. Info ▸ Player Intro ▸ Show.



Figure 226. St Team List: the whole team list with the coach. Info ▸ Team Lists ▸ team button.

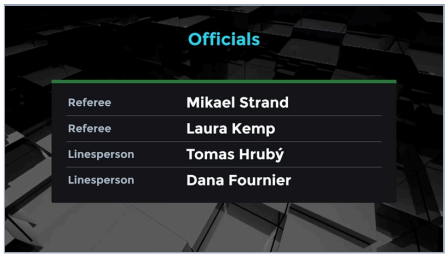


Figure 227. St Officials: referees and linespersons. Info ▸ Officials ▸ Show.

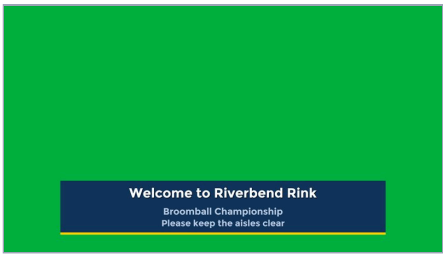


Figure 228. CK Lower Third: announcement title and two lines. CK · Lower Third or Announce Show.

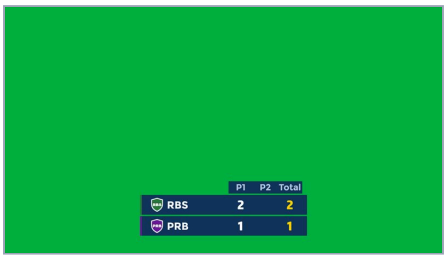


Figure 229. CK Result: period scores and totals as a lower third. CK · Result.

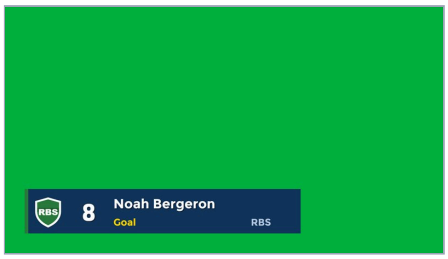


Figure 230. CK Player: scorer (or player intro) with photo, number, name and team. Info ▸ Goal / Player Intro with CK ticked.



Figure 231. CK Substitution: in / out as a lower third. Info ▸ Substitution with CK ticked.



Figure 232. CK Substitutions: several pairs of one team. Info ▸ Multiple Substitution.



Figure 233. CK Team List: a team list panel at the side. Info ▸ Team Lists.



Figure 234. CK Officials: the officials panel. Info ▸ Officials ▸ Show.

The Broomball Remote Control

The remote shows the scores, the clock and the period, a block per team with +1 Goal, Timeout and the penalty buttons, and the Match block.

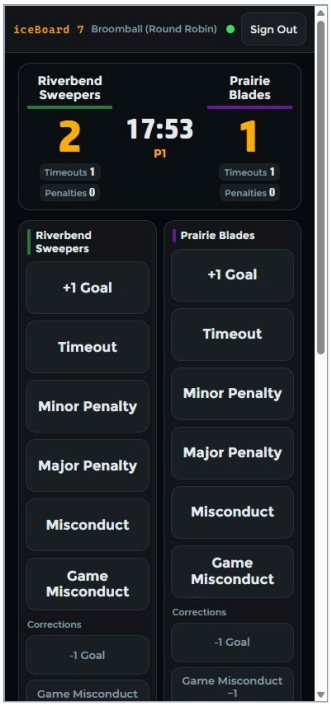


Figure 235. Phone: scores, clock and period, both team blocks.

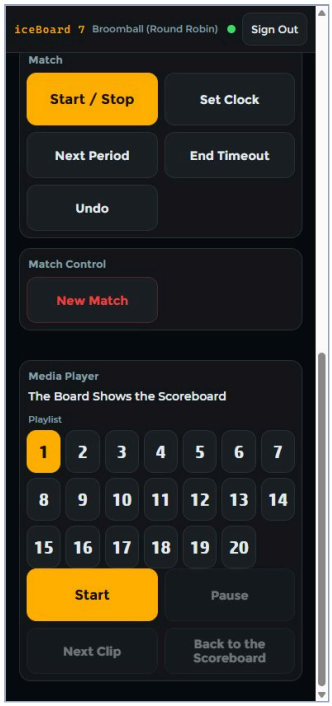


Figure 236. Phone, scrolled down: Corrections, Match and Match Control.

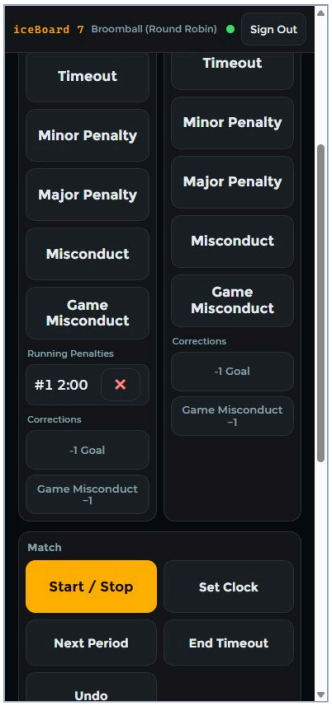


Figure 237. Phone: the running penalties under the team blocks, each with ✕ to remove it.

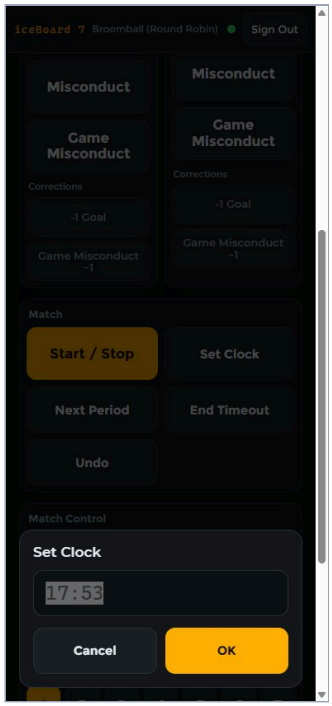


Figure 238. Phone: the Set Clock sheet.

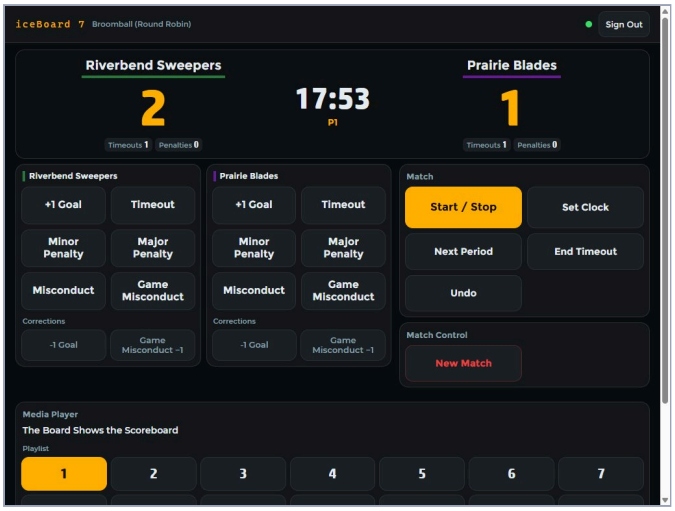


Figure 239. Tablet: the same blocks side by side.

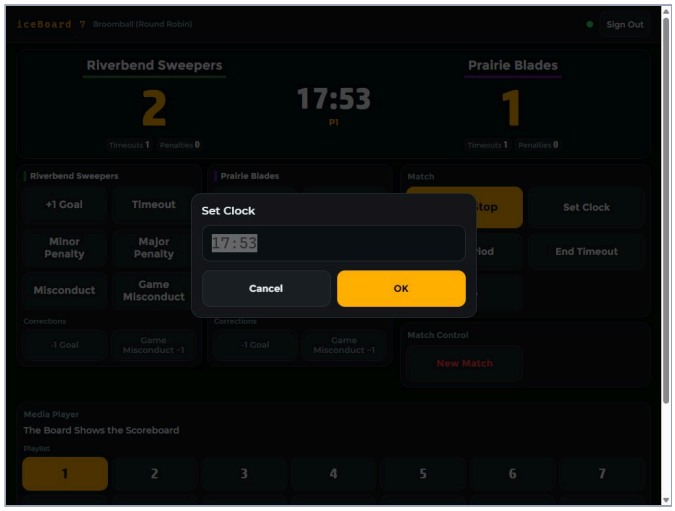


Figure 240. Tablet: the Set Clock sheet.

Remote button	Where	What it does
+1 Goal	Team block	A goal for that team.
Timeout	Team block	The team's timeout; the countdown shows under the scores.
Minor Penalty … Game Misconduct	Team block	The broomball penalty types; the sheet asks for the player number.
−1 Goal	Team block ▸ Corrections	Takes back a goal.
Start / Stop	Match	Starts or stops the game clock (the big amber button).
Set Clock	Match	Opens a sheet with the clock time selected; type m:ss and tap OK.
Next Period	Match	Goes to the next period; the clock is reset and stopped.

Remote button	Where	What it does
End Timeout	Match	Ends a running timeout early.
Undo	Match	Takes back the last change (the clock time is not changed).
New Match	Match Control	Starts a new match after the confirmation *New Match?* **This cannot be undone from the remote**.

Broomball Scenarios

1. Click **Overtime**. The clock shows 5:00; start it at the centre-ice face-off.
2. A goal ends the game. If nobody scores, the game ends in a tie when the clock runs out.
3. In the playoffs choose **Broomball (Playoff)** before the game: the overtime periods last 18:00 and continue until a goal.

23 Curling

Curling has its own Game panel and its own engine: the game is played in **ends**, not periods. You enter the result of each end with one click; iceBoard 7 keeps the end-by-end line score, the totals, the **hammer** (the last stone of the end), the **thinking time** of both teams as a chess clock, the timeouts, the breaks between ends and the extra ends. Every board shows the line score.

Rules as Implemented

The values follow the World Curling Rules of Curling and Rules of Competition (edition 1 September 2026); the article numbers are given in brackets.

Discipline	Ends	Thinking time	Per extra end	Concession after	Notes
Curling (10 Ends)	10	38:00 (C6 a I)	4:30 (C6 c I)	6 ends (C5 a)	Men and women
Curling (8 Ends)	8	30:00 (C6 a II)	4:30	6 ends (C5 b)	Mixed curling and other 8-end events
Club Curling (8 Ends)	8	–	–	Any time	No game clocks, timeouts or timed breaks
Mixed Doubles Curling	8 (R17 c)	22:00 (C6 a V)	3:00 (C6 c IV)	6 ends	Up to 6 points an end, power play
Wheelchair Curling (8 Ends)	8 (R14 g)	38:00 (C6 a III)	6:00 (C6 c II)	6 ends	No sweeping
Wheelchair Mixed Doubles	8	26:00 (C6 a IV)	4:00 (C6 c III)	6 ends	Mid-game break 7:00

- Scoring (R12): only one team scores in an end; a blank end gives 0 to both. After the scheduled ends the team with more points wins; a tie goes to extra ends, and the first team to score in an extra end wins.
- Hammer: the team that did not score in an end has the hammer in the next end; after a blank end the hammer stays. In mixed doubles (R17 g) the team that did not score has the decision on the placement of the positioned stones; after a blank end the team that delivered the first stone gets it. The first hammer is chosen with the Last Stone Draw or a coin toss (C8 b): click **Hammer** under the team.
- Thinking time (C6): only the delivering team's clock runs; it stops in timeouts, technical timeouts and breaks, and at 0:00 the team's time has run out (Time Expired; the umpire decides). For each extra end both clocks are reset to the extra-end time.
- Timeouts (C7): one 60-second team timeout per game and one in each extra end, plus the travel time; technical timeouts stop both clocks.
- Breaks (C6 j): a 1-minute break after each end, 5 minutes at the halfway point (7 in wheelchair mixed doubles); they start by themselves and end when a thinking clock starts.
- Mixed doubles power play (R17 f III): once per game per team, only by the team with the decision, never in an extra end (More ▾ ▸ Power Play).
- Concession (R12 i, C5): a team may concede after the minimum number of ends; the end is marked X. An earlier concession accepted by the umpire: More ▾ ▸ Concede (Umpire Override).
- Not on the board: the positioned stones of mixed doubles, the Last Stone Draw distances and the Draw Shot Challenge.

The Game Panel

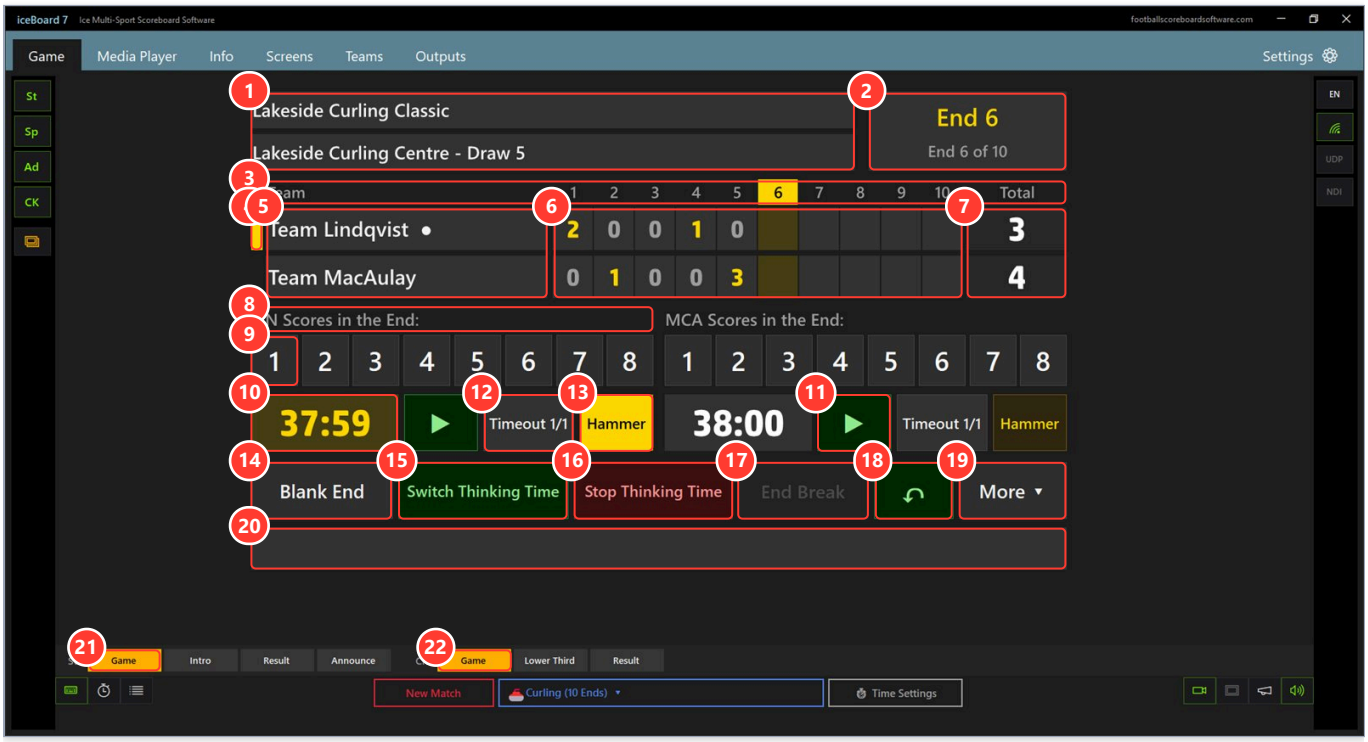


Figure 241. The curling Game panel: line score, the points of the end, thinking time, timeouts and hammer.

#	Control	What it does
1	**Event and Venue**	The event name, the venue and the event subtitle (e.g. the draw) from the Teams page.
2	**End**	The end being played (End 6, Extra End) and End 6 of 10; after the game the result.
3	**End Numbers**	One column per end of the game (8 in an 8-end game, 10 in a 10-end game, right-aligned next to the total), EE as soon as an extra end is played, and Total. The end being played is gold.
4	**Hammer Marker**	The gold bar and the ● after the name mark the team with the hammer (the last stone of the end).
5	**Teams**	The team names from the Teams page.
6	**Line Score**	The points of each end: the scoring team in gold, 0 for the other team (both 0 in a blank end), X for a conceded end. The column of the end being played is tinted. **Click a played end to correct it.**
7	**Total**	The total of each team.
8	**Points of the End**	The row of buttons of each team: the points it scored in the end.
9	**1 … 8 (Points)**	Ends the end with that many points for the team (mixed doubles 1 … 6). The other team gets 0, the hammer goes to the team that did not score, and the break between ends starts. Default keys: `Num 7` / `Num 4` = 1 / 2 points home, `Num 9` / `Num 6` guest.
10	**Thinking Time (Home)**	The home team's thinking time: gold while it runs, red when it has run out. The guest time is on the right.
11	**Run (Home)**	Runs the home team's thinking time and stops the other team's.
12	**Timeout**	The team's timeout (travel time + 60 seconds); the numbers are the timeouts left and allowed. The game clocks stop during a timeout.

#	Control	What it does
13	**Hammer**	Gives the team the hammer, e.g. after the Last Stone Draw or a coin toss for the first end. The team with the hammer is gold.
14	**Blank End**	Ends the end without a score: both teams get 0 and the hammer stays (mixed doubles: the team that delivered first gets the decision).
15	**Switch Thinking Time**	The other team becomes the delivering team: its thinking time runs, the other one stops. With no clock running it starts the team without the hammer. Default key: `F1`.
16	**Stop Thinking Time**	Stops both thinking clocks (e.g. an umpire's intervention). Default key: `F3`.
17	**End Break / End Timeout**	Ends the running break between ends, or the running timeout, early. Starting a thinking clock also ends a break.
18	**↶ (Undo)**	Takes back the last action (an end, the hammer, a timeout, a correction); the clocks keep their time. Same as `F12`.
19	**More ▾**	The More menu (see below).
20	**Status**	The break with its countdown (Break 0:45, Mid-Game Break 4:12), the running timeout with the team, the power play, or the result.
21	**St Screen Row**	The St screens of curling: **Game**, **Intro**, **Result** (the final line score) and **Announce**.
22	**CK Screen Row**	The CK screens: **Game** (the score bug with the line score), **Lower Third** and **Result**.

> **Tip** Give the first hammer before the first stone. Then **Switch Thinking Time** starts the clock of the team without the hammer, which delivers first.

Entering an End

What happened	Click	Line score	Next hammer
The team with the hammer scores 2	2 under that team	2 – 0	The other team
The team without the hammer steals 1	1 under that team	0 – 1	The team that had it
Nobody scores	Blank End	0 – 0	Stays (mixed doubles: the other team)
A team concedes	More ▾ ▸ Concede ▸ team	X – X	Game over
A wrong end	Click the end, or More ▾ ▸ Correct an End…	Corrected	Unchanged (use Hammer)

After the end the break between ends starts (Break 1:00; after the halfway end the Mid-Game Break). The next end starts when you start a thinking clock.

The More Menu and the Dialogs

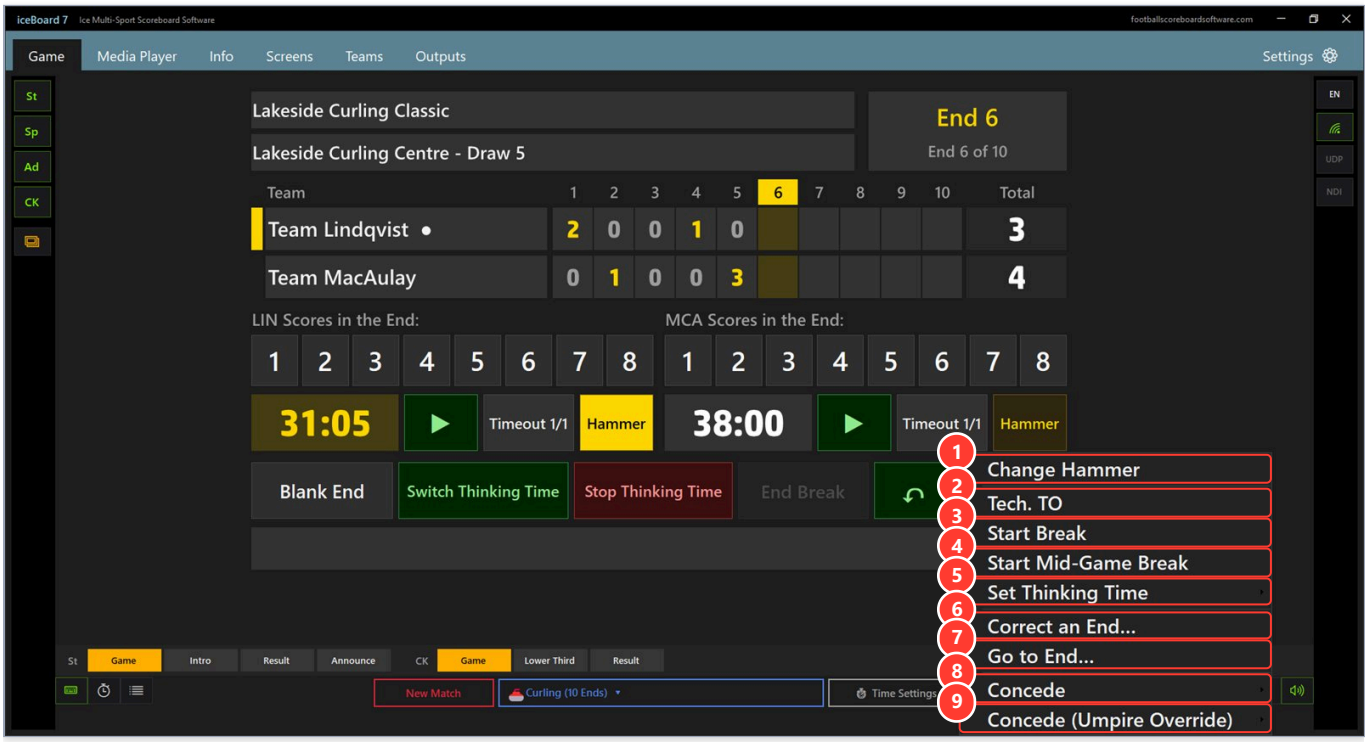


Figure 242. The More menu of the curling panel.

#	Control	What it does
1	**Change Hammer**	Gives the hammer to the other team (F4).
2	**Tech. TO**	A technical timeout (a ruling, an injury): both game clocks stop until you choose it again.
3	**Start Break**	Starts the break between ends by hand (it starts by itself after each end).
4	**Start Mid-Game Break**	Starts the mid-game break by hand (it starts by itself after the halfway end).
5	**Set Thinking Time** ▸	Sets a team's thinking time (m:ss), e.g. to correct a timing error or the time deducted for a late start.
6	**Correct an End...**	Asks for an end and its points, e.g. *3:2-0* (3:0-0 = blank, 3:X-X = conceded). Totals and the result follow.
7	**Go to End...**	Makes another end the end being played: later ends are removed, missing ends are filled as blank ends (a game joined late).
8	**Concede** ▸	A team concedes the game (asks first). The end is marked X and the other team wins.
9	**Concede (Umpire Override)** ▸	Only in disciplines with a minimum number of ends, and only before it is reached: the umpire accepts a concession earlier than the rules allow. Choose the team; iceBoard 7 asks *Team … concedes the game before the minimum number of ends (umpire override)?* and then ends the game as Concede does.

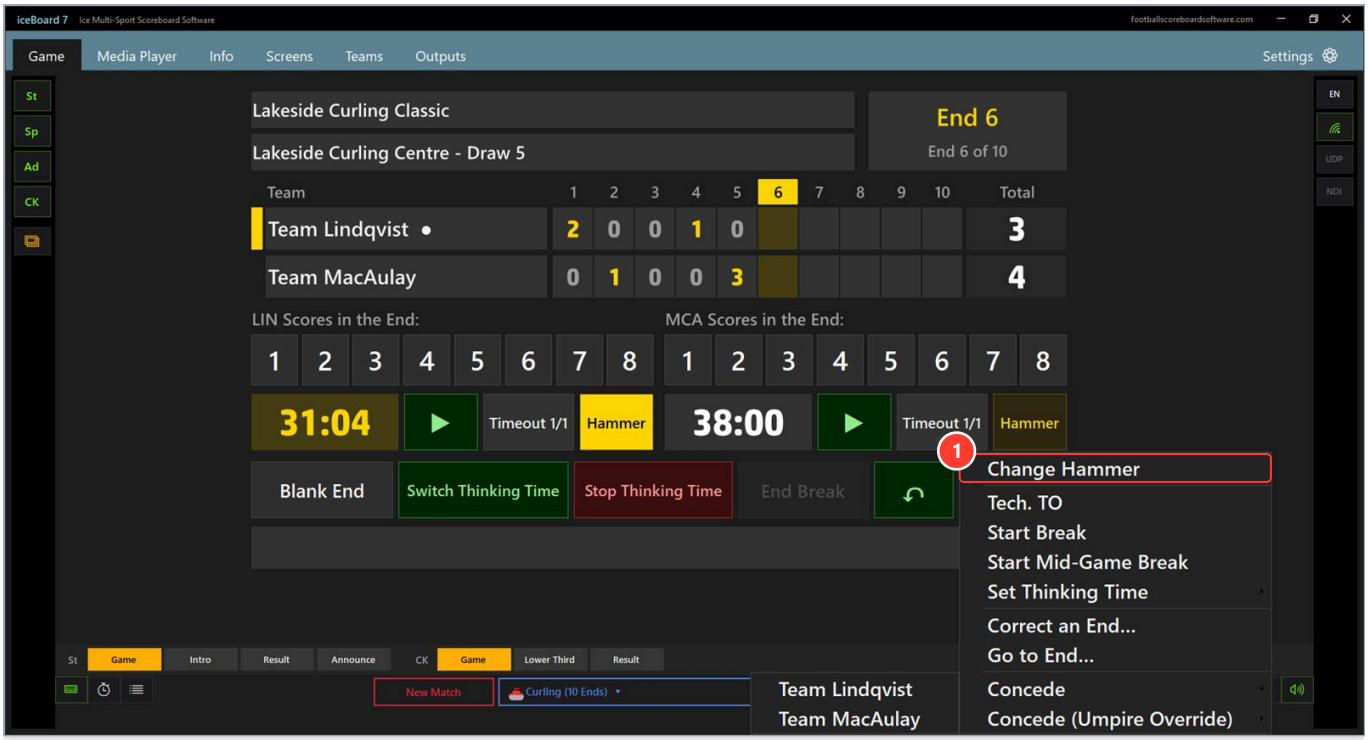


Figure 243. More ▾ ▸ Concede: the two teams.

#	Control	What it does
1	**Team**	The team that concedes. iceBoard 7 asks *Team … concedes the game?*. A concession is accepted after the minimum number of ends of the discipline (6 in the WCF disciplines; club curling at any time); before that only with Concede (Umpire Override).

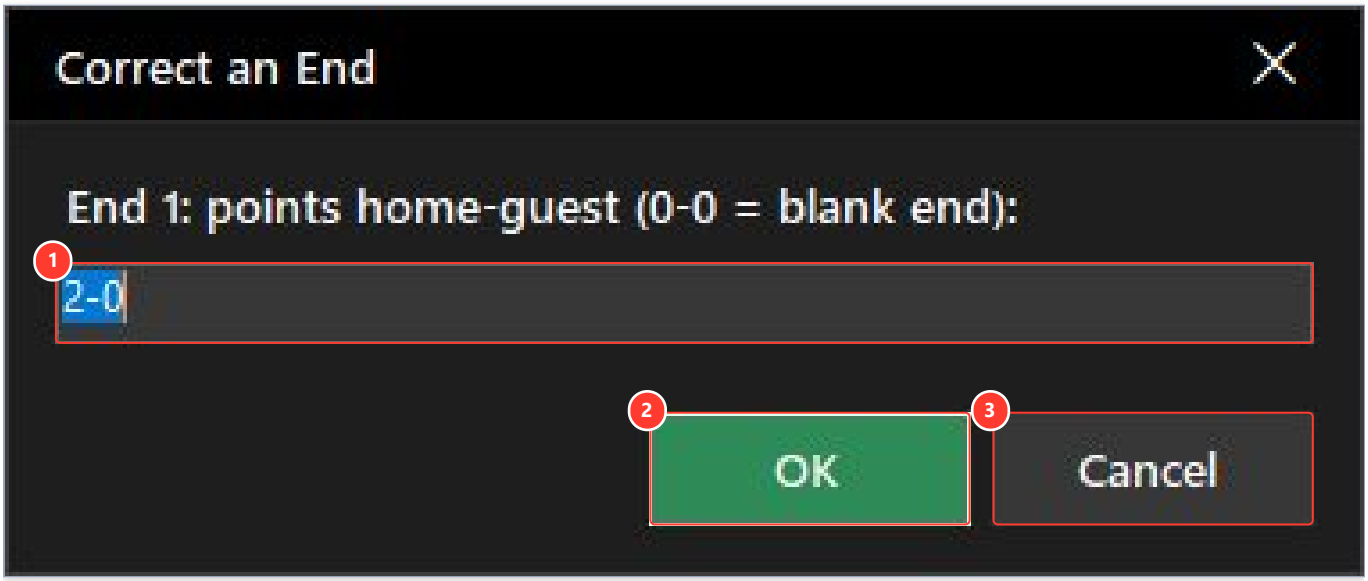


Figure 244. A click on a played end opens the correction of that end.

#	Control	What it does
1	**Points**	The points of the end as home-guest, e.g. *2-0*, *0-1*, *0-0* (blank) or *X-X* (conceded). Only one team can score in an end.
2	**OK**	Corrects the end; the totals and, after the last end, the result follow.
3	**Cancel**	Closes the dialog without a change.

Time Settings

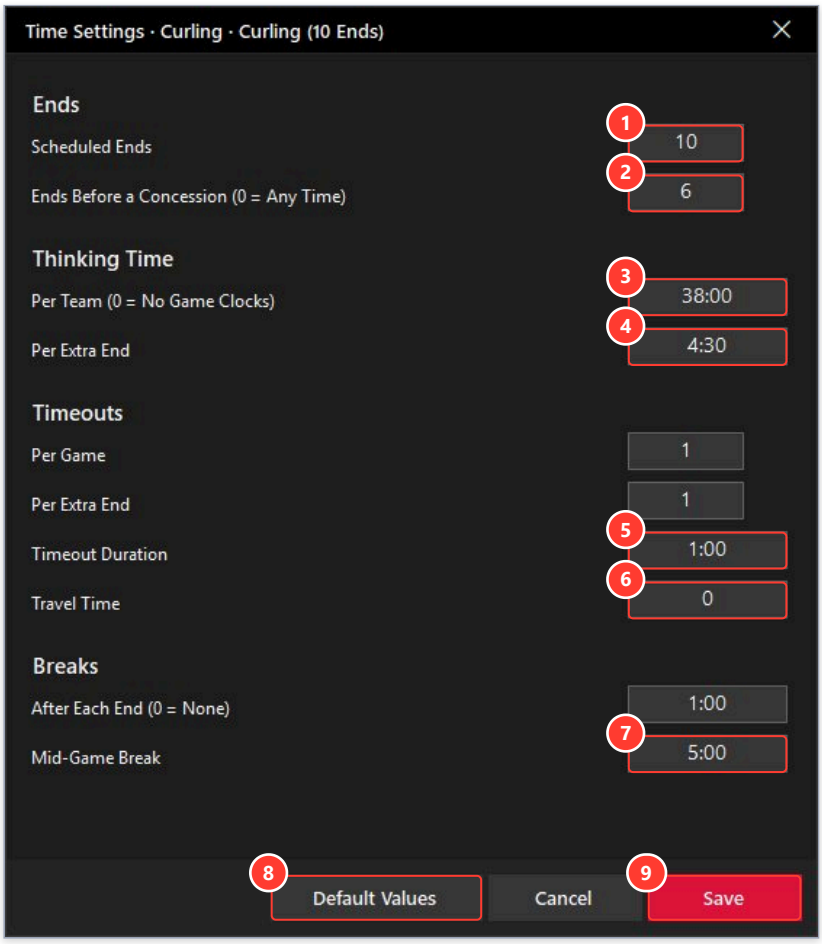


Figure 245. Time Settings for curling (10 ends).

#	Control	What it does
1	**Scheduled Ends**	The number of ends (1–10); the boards show that many end columns.
2	**Ends Before a Concession**	The minimum number of completed ends before a team may concede (WCF C5: 6, 8 in play-off games of 10-end competitions); 0 = any time.
3	**Thinking Time per Team**	The thinking time of each team for the scheduled ends; 0 = no game clocks.
4	**Per Extra End**	The thinking time each team gets for each extra end (the clocks are reset to it).
5	**Timeout Duration**	The length of a team timeout.
6	**Travel Time**	The travel time the Chief Umpire gives for the coach to reach the team; it is added to each timeout.
7	**Mid-Game Break**	The break at the halfway end (5 of 10, 4 of 8); 0 = none.
8	**Default Values**	Puts the WCF values back (asks first).
9	**Save**	Saves the values of the discipline.

Set the travel time of your event and the play-off concession limit before the game. For club games, the Club Curling discipline has no clocks at all; switch the thinking time on there by giving it a value.

Keyboard Shortcuts for Curling

Key	Action
F1	Switch Thinking Time
F3	Stop Thinking Time
F4	Change Hammer
F5 / F6	Timeout home / guest
Num 7 / Num 4	1 / 2 points home
Num 9 / Num 6	1 / 2 points guest
Num 5	End Timeout
F12	Undo

The other points, Blank End and the rest can be given keys in Keyboard Shortcuts (see Keyboard Shortcuts).

Curling Outputs

Every board shows the line score: the end numbers with the end being played highlighted, the points of each end (the scoring team in the accent colour), the extra ends, the totals, the hammer marker beside the team and both thinking times (the running one in the accent colour). Only the ends of the game have columns (an 8-end game shows 1–8, a game set to 6 ends 1–6) and the line closes up next to the total; the EE column appears when an extra end starts. The digits keep their size.

The Game Screens

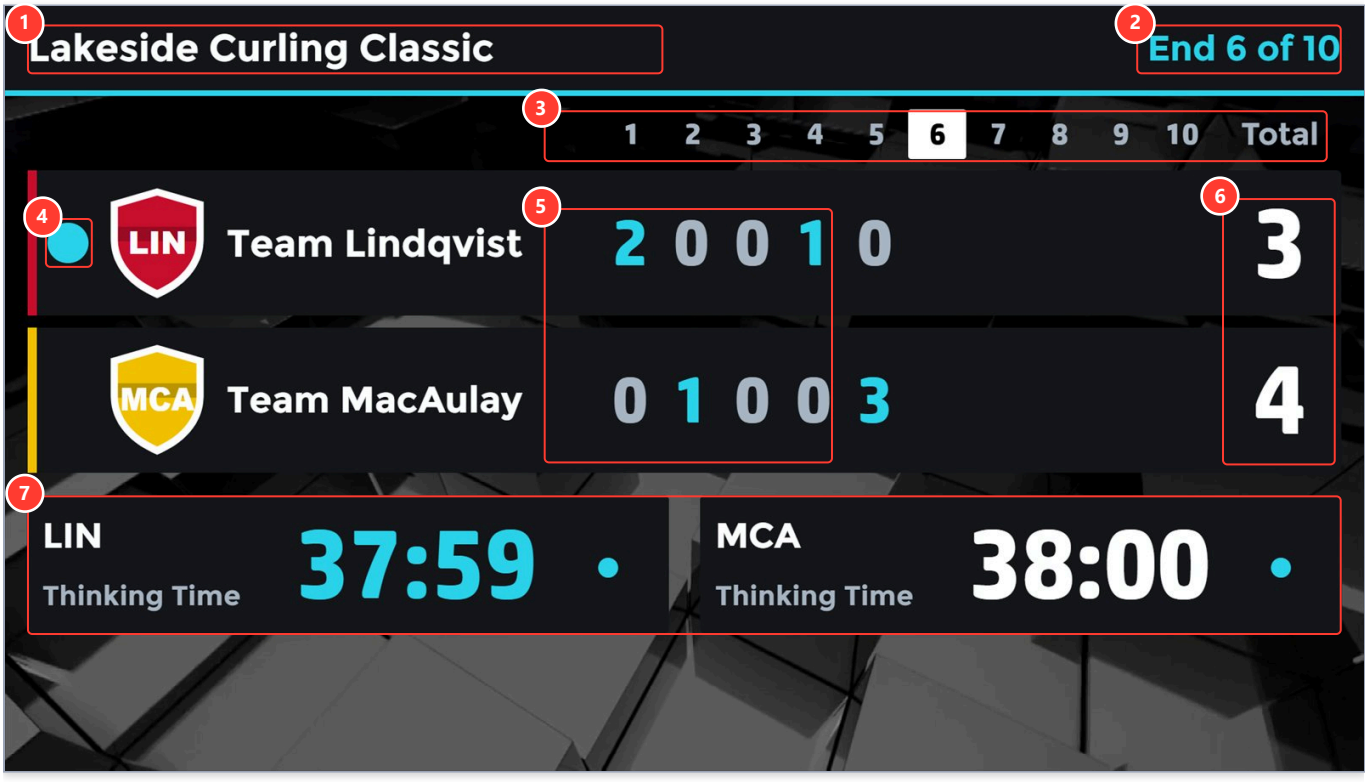


Figure 246. The curling St board (Arena design).

#	Control	What it does
1	**Event**	The event name.
2	**End**	End 6 of 10, Extra End.
3	**End Numbers**	The end being played is highlighted.
4	**Hammer**	The team with the hammer.
5	**Line Score**	The points of each end; scoring ends in the accent colour.
6	**Totals**	The total of each team.
7	**Thinking Time**	Both teams' thinking time and the timeouts left (dots); the running clock in the accent colour.



Figure 247. Sp: the line score and the thinking times above the sponsor area.

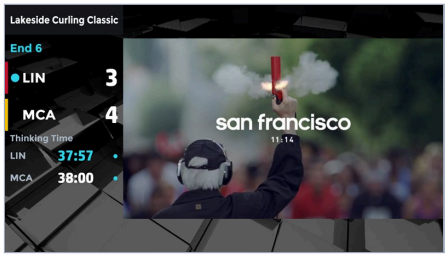


Figure 248. Ad: the end, short names with the hammer and the totals, and the thinking times beside the advert area.



Figure 249. CK: the score bug with the line score, the end and the thinking times, on green for keying.

Info Screens and Broadcast Graphics

The curling info screens are the general ones plus the line score as a result screen. The Info page has the Player Intro, Team Lists and Officials rows (curling has no goals, cards or substitutions).



Figure 250. St Intro: event, teams with logos, venue, date and time.

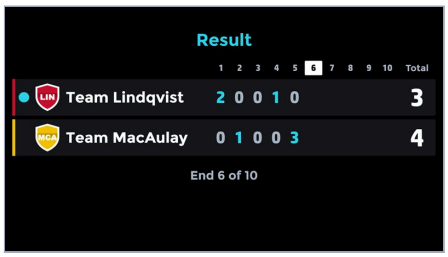


Figure 251. St Result: the full line score and the winner. St · Result after the game.



Figure 252. St Announce: an announcement.



Figure 253. St Player Intro: one player.



Figure 254. St Team List: the team (lead, second, vice-skip, skip, alternate).

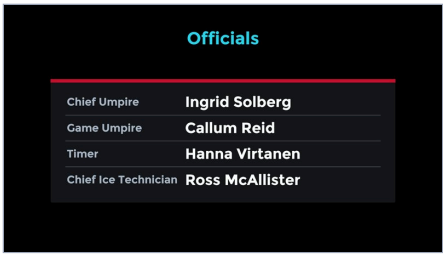


Figure 255. St Officials: chief umpire, game umpire, timer, chief ice technician.

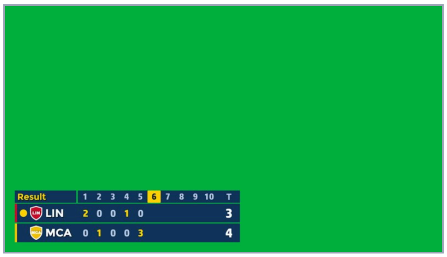


Figure 256. CK Result: the final line score on green.



Figure 257. CK Lower Third: an announcement.



Figure 258. CK Player: one player with photo.



Figure 259. CK Team List: a team at the side.

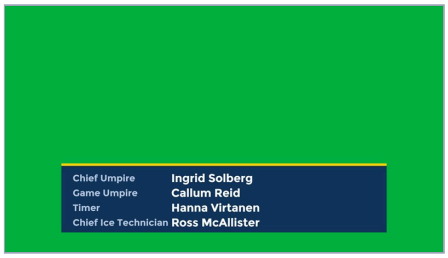


Figure 260. CK Officials: the officials panel.

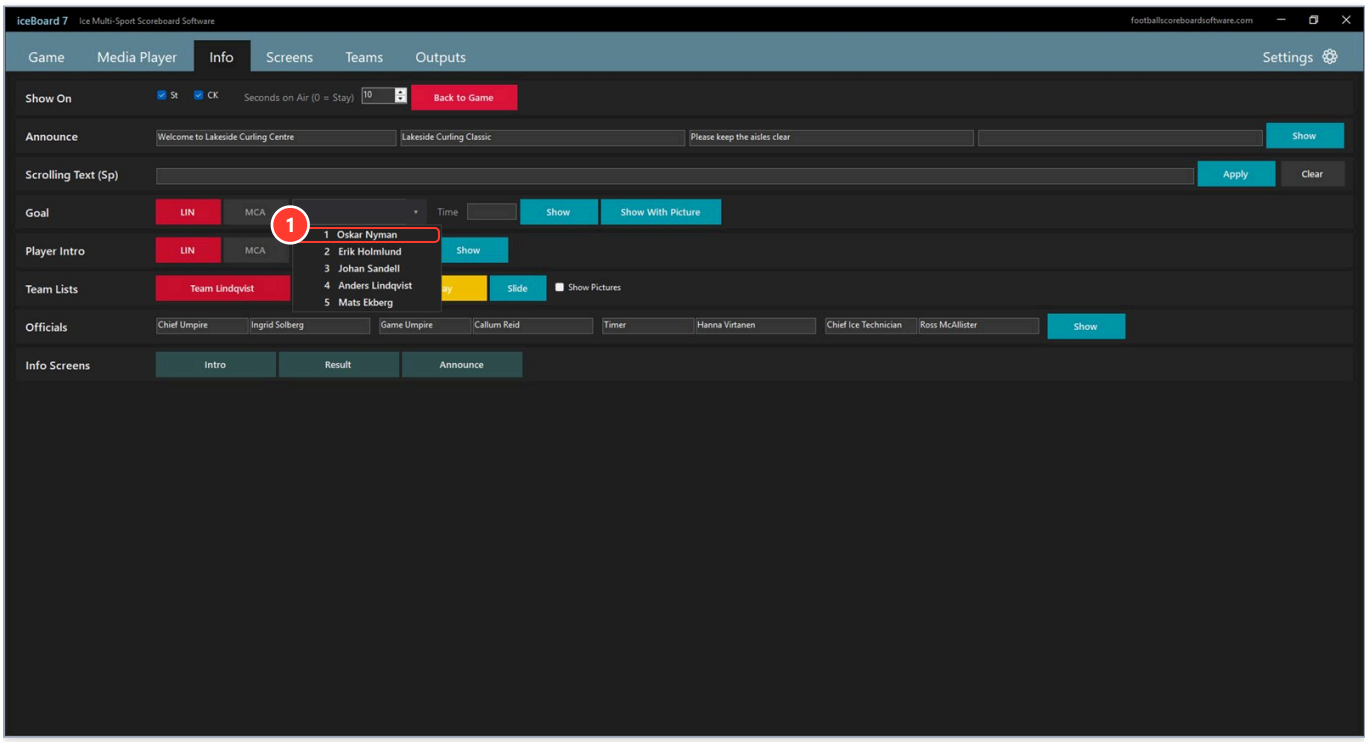


Figure 261. The player list of an Info page row (curling).

#	Control	What it does
1	**Players**	Click a player to put number and name into the field.

The Curling Remote Control

The curling remote shows the line score at the top (the end being played framed in amber, the hammer as ● before the team), a block per team with the points 1 … 8, the thinking time (tap it to run that team's clock), Timeout and Hammer, the End block (Blank End, Switch Thinking Time, Stop Thinking Time, End Break, Undo), the Match block (Change Hammer, Set Thinking Time per team, End Timeout, Tech. TO, Start Break, Correct an End, Go to End, Power Play in mixed doubles) and Match Control (Concede per team, New Match).

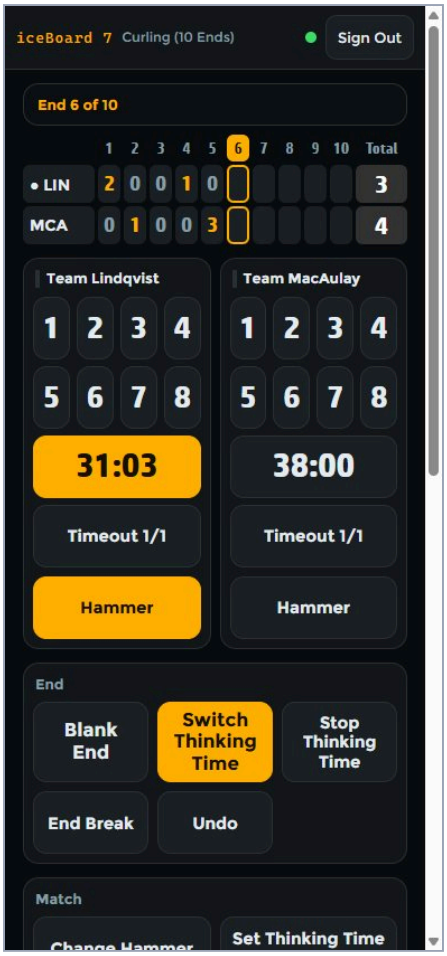


Figure 262. Phone: the line score, the team blocks and the End block.

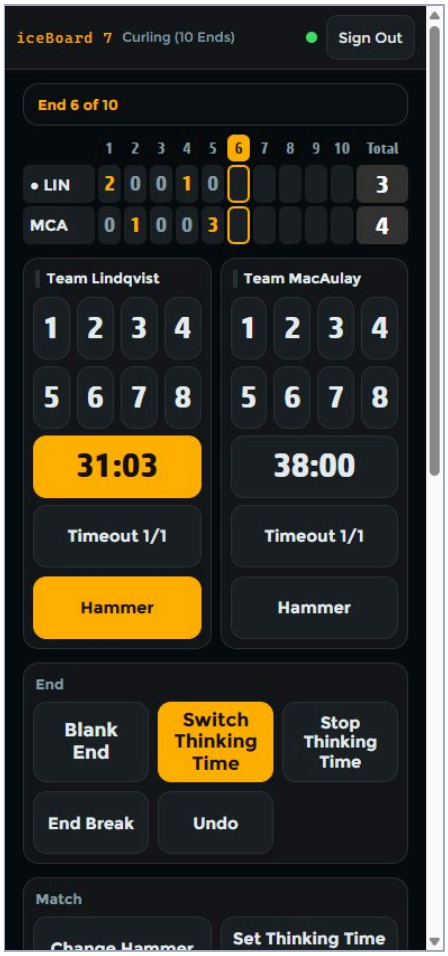


Figure 263. Phone, scrolled: Match and Match Control.

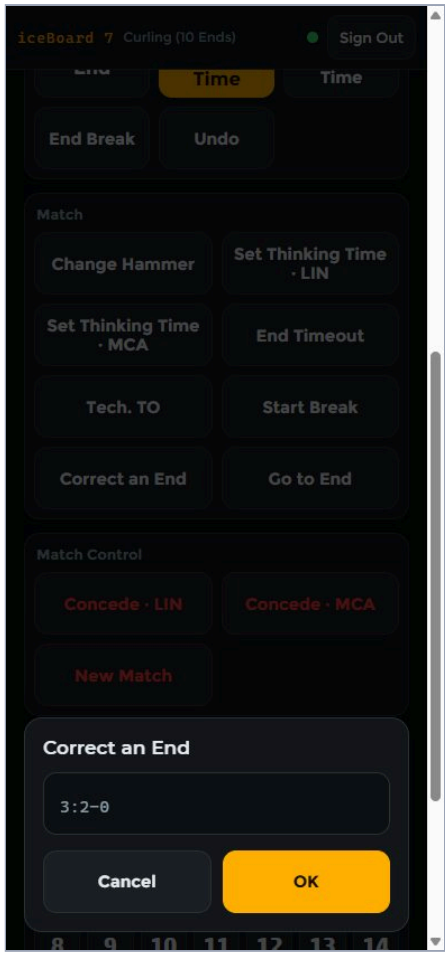


Figure 264. Phone: a sheet that asks for a value (Set Thinking Time).

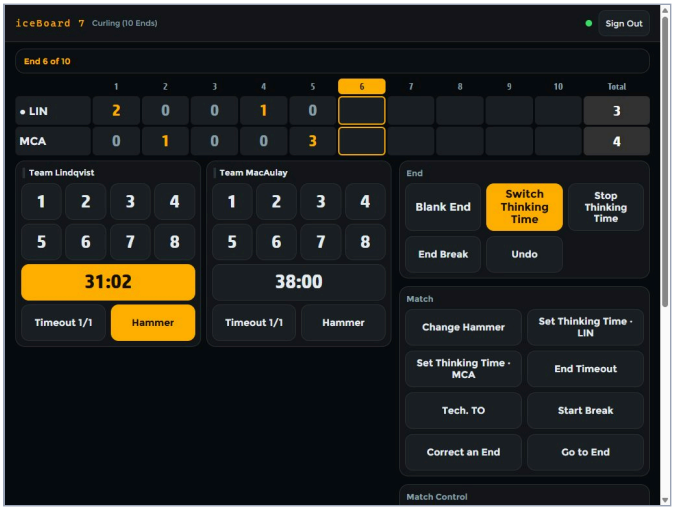


Figure 265. Tablet: the line score, both teams, End and Match side by side.

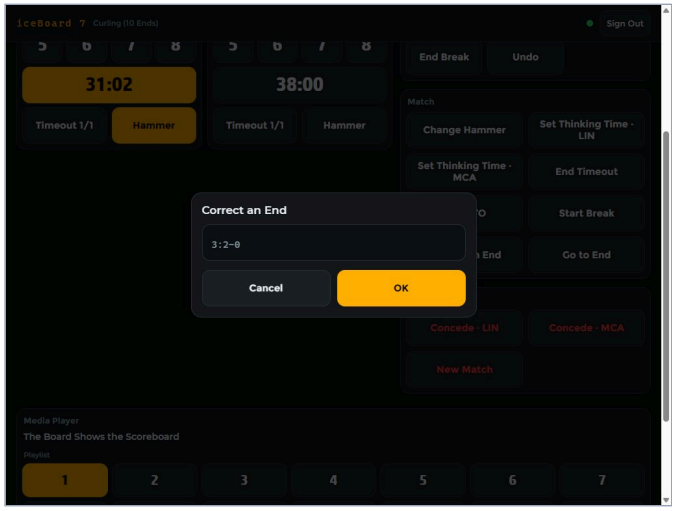


Figure 266. Tablet: a value sheet.

Remote button	Where	What it does
1 … 8	Team block	The team scored that many points in the end.
Thinking time	Team block	Runs that team's thinking time (the other stops).
Timeout / Hammer	Team block	The team's timeout; the hammer to that team.
Blank End	End	The end ends without a score.

Remote button	Where	What it does
Switch / Stop Thinking Time	End	As on the Game panel.
Correct an End / Go to End	Match	A sheet asks for the value (e.g. 3:2-0, or the end number).
Concede · team	Match Control	The team concedes after the confirmation.

Curling Scenarios

1. Choose **Curling** ▸ **Curling (10 Ends)**. Both thinking times show 38:00.
2. The guest team won the Last Stone Draw and takes the hammer: click **Hammer** under the guest team.
3. When the home team's lead slides the first stone, click **Switch Thinking Time** (home clock runs). After each stone has come to rest, click it again (or press `F1`).
4. The home skip calls a timeout while the home clock runs: click **Timeout** under the home team. Both clocks stop for the travel time and 60 seconds.
5. The home team steals one: click **1** under the home team. The line score shows 1 – 0, the guest team keeps the hammer, the 1-minute break starts.
6. After end 5 the 5-minute mid-game break starts by itself.
7. Tied after 10 ends? The extra end starts: both clocks are reset to 4:30 and each team has one timeout. The first team to score wins.

1. Right after the mistake, click ↶ and enter the end again.
2. Noticed later? Click the end in the line score (or More ▾ ▸ Correct an End…), type *0-2* and click OK. The totals change; the hammer of the running end does not – correct it with **Hammer** if needed.

1. Choose **Mixed Doubles Curling**. The points buttons go up to 6.
2. Click **More** ▾ ▸ **Power Play** · *home*. The status shows Power Play.
3. After the end, the power play is used up for the home team; in an extra end iceBoard 7 refuses it.
4. A blank end gives the decision to the team that delivered the first stone: iceBoard 7 moves the hammer marker by itself.

1. Choose **Club Curling (8 Ends)**: no thinking time, timeouts or breaks.
2. Enter each end with the points buttons or Blank End; the line score and the hammer follow.
3. A team that is far behind concedes after end 6: More ▾ ▸ Concede ▸ team.

24 Usage Scenarios

Complete workflows for ice rinks. The pages and dialogs named here are described in their own chapters.

Workflows

1. Each sport keeps its own team lists, designs and Time Settings. Choose the sport with the sport button; nothing of the other sports changes.
2. Set up each league once: the teams on the Teams page, the period lengths in Time Settings, the board design on the Outputs page.
3. On the day, choose the sport and discipline, check the teams, put the St board on the LED screen and start.

1. Choose Hockey ▸ Ice Hockey, open Time Settings, set the periods to 12:00 and the overtime to 3:00, and click Save.
2. For each game, enter the two teams on the Teams page and click New Match.
3. After the tournament, click Default Values in Time Settings to go back to the IIHF times.

1. On the Outputs page, send the CK board to NDI (or to a window your mixer captures) and key out the green.
2. Keep CK · Game on air: the line score with the end being played, the hammer and both thinking times.
3. Between ends, show the full line score with St · Result on the big screen and CK · Result in the stream.
4. Run the St board on the arena screen at the same time; both follow the same scoring.

1. Switch on the remote control on the PC and sign in on the phone (see Remote Control).
2. The timer taps the thinking time of the delivering team on the phone and the points at the end of each end.
3. The PC operator keeps the boards and the info screens; both see the same line score.

1. The main operator runs the game clock, the goals and the penalties on the PC.
2. The shot clock operator uses the remote on a tablet and taps Reset Shot Clock after every shot on goal and change of control.

25 Ice Sports Quick Reference

Hockey, ringette, broomball: to…	Do this
Start / stop the clock	Start / Stop under the clock, F1
Score a goal	Number box (▾), then ↑ of the team (Num 7 / Num 9)
Take a goal back	↓ of the team (Num 0 / Num ,)
Give a penalty	Number box, then the penalty button (2 Min, 5 Min, 10 Min; ringette 2 Min, US 2, 4 Min, Misc, MP)
Remove a running penalty	✕ beside the penalty
Timeout	Green button under the timeout countdown, F5 / F6
Next period / overtime	Period button, Overtime, F2
Shootout (hockey)	Shoot-Out, then goal / miss per shot
Reset the shot clock (ringette)	30 above the clock
Set the clock	Double-click the clock or Set Clock
Undo the last action	↶ Undo, F12

Curling: to…	Do this
Give the first hammer	Hammer under the team (F4 changes it)
Run the delivering team's thinking time	Switch Thinking Time (F1) or ▶ under the team
Stop both clocks	Stop Thinking Time (F3)
Record the end	The points under the scoring team, or Blank End
Team timeout	Timeout under the team (F5 / F6)
End a break or timeout early	End Break / End Timeout
Technical timeout	More ▾ ▸ Tech. TO
Correct an end	Click the end in the line score
Mixed doubles power play	More ▾ ▸ Power Play · team
Concede	More ▾ ▸ Concede ▸ team
Undo	↶, F12

> **Note** The keys shown are the defaults of a new installation. You can change them in Keyboard Shortcuts.

26 Troubleshooting

Problem	What to do
A board does not appear on the second monitor.	Check that Windows uses *Extend* (not Duplicate), then choose the monitor on the Outputs page and tick **Show**. More in *Sending the Board to the LED Screen → Troubleshooting the LED Output*.
The board is too small or cut off on an LED wall.	Untick **Full Screen** and enter the exact Left / Top / Width / Height of the LED controller's area on that monitor (see *LED Sender Card*).
I have to place the board again at every start.	No: the Outputs page saves everything at once and the board opens at its place by itself. If it does not, check that the LED device is switched on before or soon after the program starts, and that Windows still uses *Extend*.
A clip of the Media Player does not play.	The St output must be open. A red file name means the file was moved or deleted: add it again. Some video formats need the matching Windows codec; MP4 (H.264) always works.
A keyboard shortcut does nothing.	Check **Global Shortcuts On** in the keyboard shortcut editor (the keyboard icon at the bottom left is green when on), switch `NumLock` on, and make sure the key is assigned for the **current sport**. Numpad keys do not score while you type in a text box of the program.
The phone cannot open the remote page.	Same network as the PC (not mobile data, not a guest Wi-Fi)? Settings shows **Running**? Allow TCP 1907 in the Windows firewall. If the status says *Not running*, the port is used by another program: choose another port and click Apply.
The PIN is refused or the pad is locked.	After five wrong PINs the device is locked for 30 s, then longer (up to 15 minutes). Wait for the countdown; check the PIN on the Settings page.
The remote shows a red dot or "No Connection to the Scoreboard".	The phone lost the Wi-Fi or the PC's server stopped. It reconnects by itself; check the Wi-Fi and the remote button on the right strip (green = running).
NDI source is missing in vMix / OBS.	The output must be open (**Show**) and **NDI** ticked. The NDI column shows the frame rate or an error. PC and receiver must be in the same network; allow the program in the firewall.
CK shows green in the vision mixer.	Use a chroma keyer on the green, or use the NDI source, which already carries transparency.
The Sp or Ad board still shows sample pictures.	Add your own files on the strip's tab of the Sp / Ad Media dialog (or copy them into *data\media\sponsor*, *ad*, *banner1*, *banner2* and click **Reload**).
A video does not appear in a scrolling strip.	Scroll Images and Images + Text use pictures only. Use Slide (or Playlist in the main area) for videos.
The scrolling text of the Info page does not appear.	Click **Apply** after typing. Look in the right place: with *Band Above the Strip* it runs in the design's band, with *Inside the Strip* it replaces the strip content. The Sp board must be open.
The Ad main area is black in Camera mode.	Windows must see a camera or capture device that is not used by another program. Choose Playlist to go back to the adverts.
The Ad banners do not appear.	Tick **Visible** for the banner on the Ad Layout tab; check its size (5–50 %).
The Info page Show button does nothing on CK.	Tick **CK** under Show On, and open the CK output. A graphic is only shown when the output's design has that screen.

Problem	What to do
The camera, NDI or capture picture stays black.	Video Sources: click **Start**, check the Preview, then **Show**; the CK or Ad board must be open. A camera used by another program cannot be opened; for NDI click ↺ to search again.
The new times are not used.	Times apply to a new match. After saving, answer **Yes** to start a new match, or start one with **New Match**.
Team names or the team list changes do not appear.	Click **Apply** on the Teams page – nothing is saved before.
The language did not change.	The language is used after a restart of the program.
The program closed unexpectedly.	Start it again and answer **Yes** to *Restore the last match?*. The match continues with the clock stopped; check the clock and start it again.

Every start, error and network event is written to the log file of the day in *data\logs*; send it with a problem report.

27 Files and Folders

All your data lives in the *data* folder inside the program folder. To move iceBoard 7 to another PC, or to keep a backup, copy the whole *data* folder.

Folder / file	Content
data\config\settings.json	Language, remote control (port, PIN), console and UDP settings, sound on / off, last sport and discipline.
data\config\outputs.json	Per output: shown, monitor (number and Windows name), full screen, window position, NDI, player panels; the design of each output per sport; player panel columns; background video / picture on or off; the Sp / Ad Media settings (strip modes, Ad layout, banners, scroll texts).
data\config\inputs.json	The Video Sources settings of the CK and Ad boards (camera, format, NDI source, capture area, display mode).
data\media\playlists	The Media Player: playlist01.json … playlist20.json (the clips are referenced where they are), urls.json (the URL list) and player.json (display mode, sound, return, image play duration).
data\config\hotkeys.json	Keyboard shortcuts per sport and the Global Shortcuts On switch.
data\config\<sport>\setup.json	Event, venue, teams, colours, logos, team lists, officials of a sport (the competition for swimming and diving).
data\config\<sport>\rules\<discipline>.json	Your own Time Settings of a discipline (only the values that differ from the factory values).
data\config\running.json	Points to the journal of the running match; used to offer the restore after an unexpected end.
data\designs	Your own board designs, per sport. The factory masters are in the program folder and are never changed.
data\logos	Team logos chosen on the Teams page.
data\media\sponsor	Pictures and videos of the Sp sponsor strip.
data\media\ad	Pictures and videos of the main area of the Ad board.
data\media\banner1, *data\media\banner2*	Pictures of the two Ad banners (empty: the sponsor pictures are used).
data\media\background	Background video and picture of the St, Sp and Ad boards.
data\media\players	Player photos chosen in the Photo column of the Teams page (copies of your files).
data\sounds	Your own sounds (01.wav … 05.wav) replace the shipped ones.
data\matches	One journal file per match (every command with its time); used to restore a match after an unexpected end.
data\logs	One log file per day.
data\webview2	Working files of the board windows (browser cache). Safe to delete while the program is closed.

> **Note** Edit the files only while the program is closed. If a settings file cannot be read, the program starts with default values and keeps the damaged file as *.bad*.