iceBoard 7 L

Ice Multi-Sport Scoreboard Software Lite

User Guide



Contents

1. Introduction
- Sports and Disciplines
- Outputs
- System Requirements
- Installation and Activation
- Pro and Lite Editions

2. Quick Start
- Choose the Sport and Discipline
- Your First Hockey Period
- Your First Curling End

3. The Main Window
- Tabs and Side Strips
- On-Air Rows and Bottom Bar
- The Board Output
- Keys and Sounds in the Main Window

4. Starting a Match
- New Match
- Choosing the Sport and Discipline
- Time Settings
- Undo
- Restoring a Match after a Crash

5. The Info Page
- The Rows of the Info Page
- The Player List (▾)
- Score Type, Card and Sanction Lists
- The Info Page of Each Sport
- Info Screens on the Standard Board

6. The Screens Page
- Screen Buttons
- The Screens Page of Each Sport

7. Teams and Players
- Event and Teams
- Teams in the Different Kinds of Sport
- The Teams Page of Each Sport
- Player Photos and Numbers

8. Outputs
- The Output Rows
- Choosing a Design
- Background Video and Picture

9. Sending the Board to the LED Screen
- How Windows Sees the Outputs
- Second Monitor, Projector or TV
- LED Video Processor (Scaler)
- LED Sender Card (Direct Connection)

Several Outputs
Pixels, Monitors and Window Scaling
A One-Time Setting
Troubleshooting the LED Output

10. Media Player
The Media Player Page
While a Clip Plays
Display Modes
Web Pages and Streams (URL)
Media Player from the Remote Control and the Keyboard

11. Board Designs
Preview Design (Design Gallery)
The Design Editor

12. Settings
The Settings Page
Choosing the Language
Restart for the New Language

13. Keyboard Shortcuts
The Shortcut Editor
Default Keys
The Actions of Each Sport

14. Remote Control
Connecting a Phone or Tablet
Signing In
The Remote Panel
Running Penalties on the Remote
Input and Confirmation Sheets

15. Data Exchange

16. Typical Workflows

17. Ice Hockey and Para Ice Hockey
Rules as Implemented
The Game Panel
Menus and Dialogs of the Hockey Panel
Time Settings
The Info Page for Hockey
Hockey Outputs
The Hockey Remote Control
Hockey Scenarios

18. Ringette
Rules as Implemented
The Game Panel
Time Settings
The Info Page for Ringette
Ringette Outputs
The Ringette Remote Control
Ringette Scenarios

19. Broomball

Rules as Implemented
The Game Panel
Time Settings
The Info Page for Broomball
Broomball Outputs
The Broomball Remote Control
Broomball Scenarios

20. Curling

Rules as Implemented
The Game Panel
Entering an End
The More Menu and the Dialogs
Time Settings
Keyboard Shortcuts for Curling
Curling Outputs
The Curling Remote Control
Curling Scenarios

21. Usage Scenarios

Workflows

22. Ice Sports Quick Reference

23. Troubleshooting

24. Files and Folders

1 Introduction

iceBoard 7 L 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 L renders the scoreboard and the information screens live on LED walls, projectors and monitors.

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 L 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 L renders the **St** board (the standard scoreboard) for every sport in a window on any monitor (LED wall, projector, video wall). An info screen (intro, announcements, result, goal, penalty, team list and officials graphics; the curling line score as a result) can replace the scoreboard at any time, and the Media Player shows videos and pictures on the same board. See Outputs, Sending the Board to the LED Screen 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 or the state broadcast to other programs.

Installation and Activation

1. Run the iceBoard 7 L setup as an administrator. The program installs to **C:\iceBoard7L** 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 L.
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:\iceBoard7L\data** . Updates and uninstalls leave this folder in place. To remove everything, delete the folder after you uninstall.

Pro and Lite Editions

iceBoard 7 L is the **Lite** edition of iceBoard 7: the same sports, rules, control panels, info graphics, designs and remote control for one LED board, without the extra outputs and video features of the Pro edition. This guide describes iceBoard 7 L.

	iceBoard 7 (Pro)	iceBoard 7 L (Lite)
Sports, rule presets, control panels, Undo, crash restore	all	the same

	iceBoard 7 (Pro)	iceBoard 7 L (Lite)
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 L 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 L 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 board itself is a separate window without a frame. You open it with the **St** button; where it 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

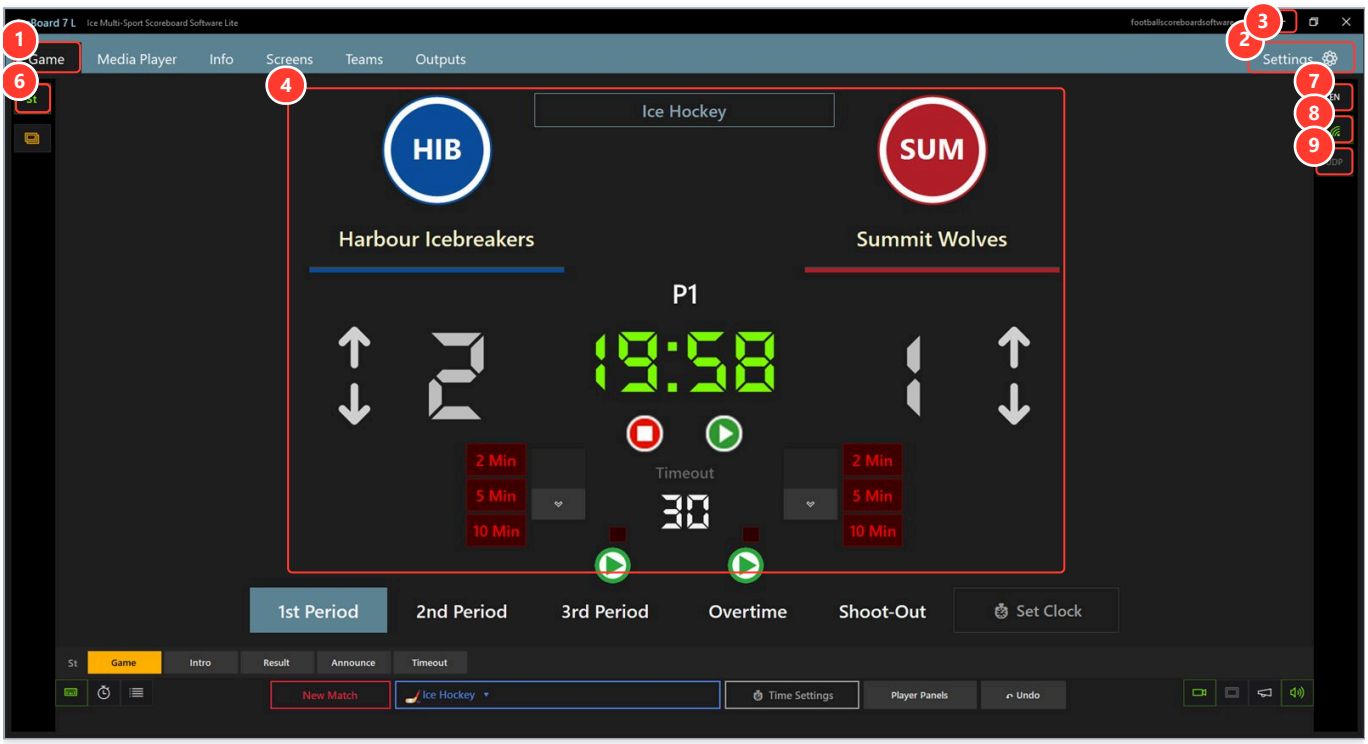


Figure 1. The Game page (Hockey): tabs, output strip (left) and tool strip (right)

#	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 the board shows), **Teams** (names, colours, logos, team lists) and **Outputs** (monitor, window position, design). 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	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*).
7	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*).
8	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.
9	UDP Broadcast	Switches the UDP state broadcast for LED controllers and other listeners on or off. Lit green while it runs.

On-Air Rows and Bottom Bar

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

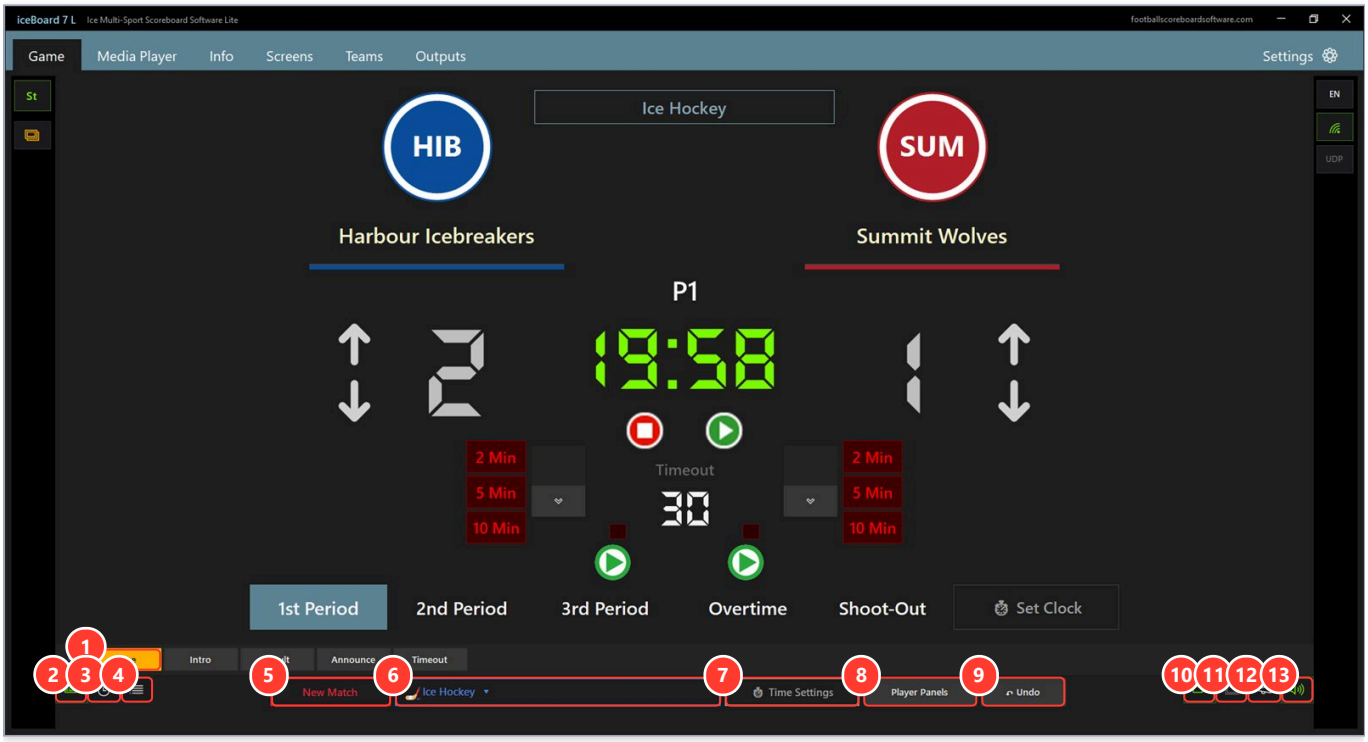


Figure 2. The Game page: on-air screens and bottom bar

#	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	Keyboard Shortcuts	Opens the keyboard shortcut editor. Lit green while the global shortcuts are on.
3	Time Settings (icon)	Opens the Time Settings of the discipline – the same as the **Time Settings** button.
4	Players	Opens the Teams page with the team lists.

#	Control	What it does
5	**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.
6	**Sport · Discipline**	Shows the running sport and discipline (rule set). Click to choose another sport or discipline.
7	**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.
8	**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 "…".
9	**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.
10	**Background Video**	Plays the background video behind the board. Without a video in *data\media\background* a file dialog asks for one first.
11	**Background Picture**	Shows a background picture behind the board. Without a picture in *data\media\background* a file dialog asks for one first.
12	**Horn**	Sounds the horn once on the PC speakers.
13	**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 Board Output

iceBoard 7 L drives one board output, **St – Standard (LED)**: the full scoreboard and the full-screen info screens (Intro, Result, Announce, Timeout, Goal, Card, Substitution, Player Intro, Team List, Officials) for the LED wall, video board, projector or TV in the venue. The Media Player shows its videos and pictures on the same board.

Board elements that only matter at times stay off the board until they have something to show: 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*). The background video and picture (bottom bar) appear behind the board.

The Board

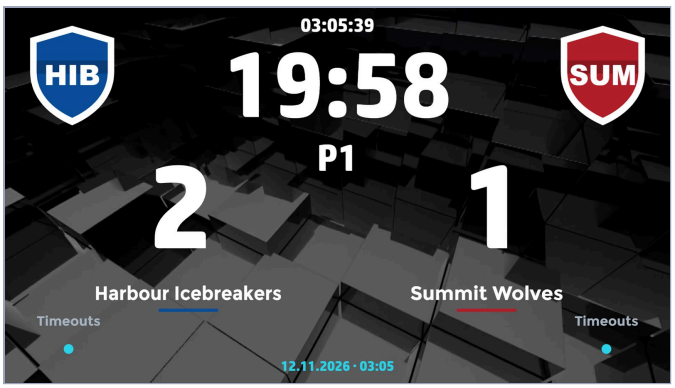


Figure 3. St – Standard (LED) board

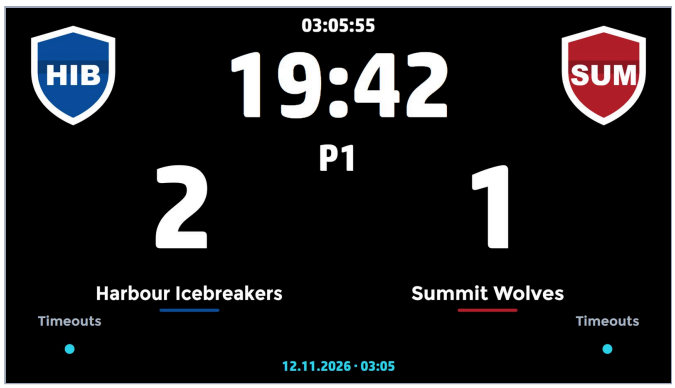


Figure 4. The same board without the background video

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, keyboard shortcuts).

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 L 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:

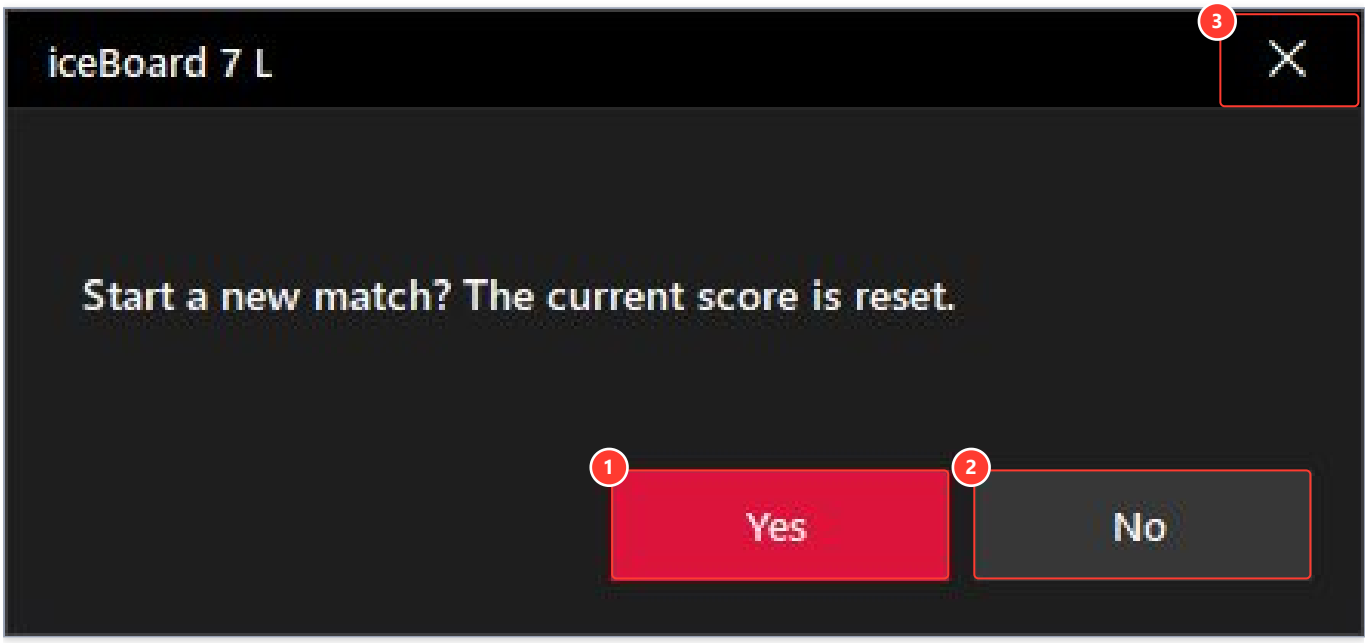


Figure 5. Confirmation of a new match

#	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 L as a tile and, below, the disciplines (rule sets) of the chosen sport.

The Sport Picker

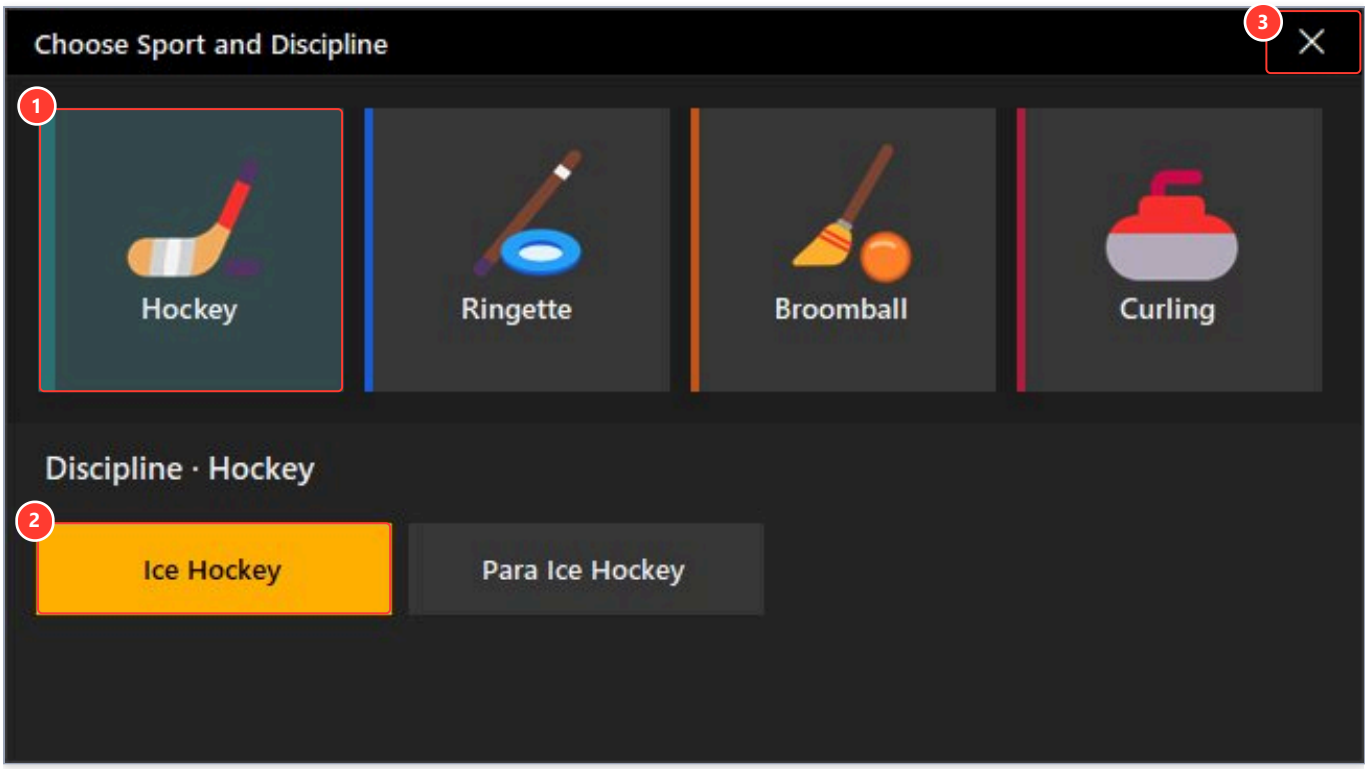


Figure 6. Choose Sport and Discipline

#	Control	What it does
1	**Sport tiles**	Every sport of iceBoard 7 L. 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 L:

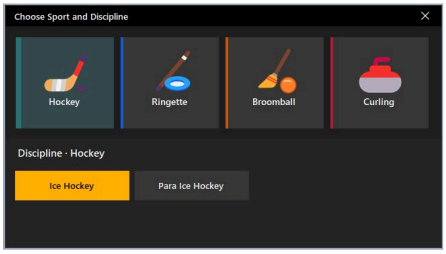


Figure 7. Hockey – its disciplines

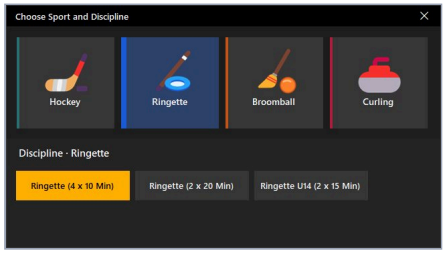


Figure 8. Ringette – its disciplines

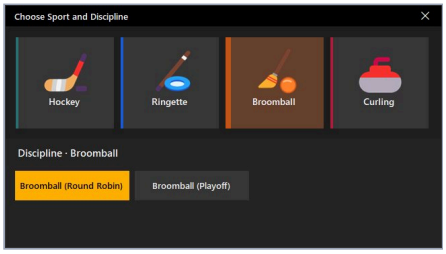


Figure 9. Broomball – its disciplines

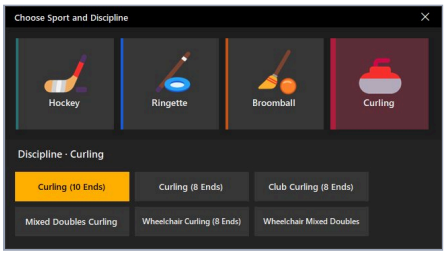


Figure 10. Curling – its disciplines

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

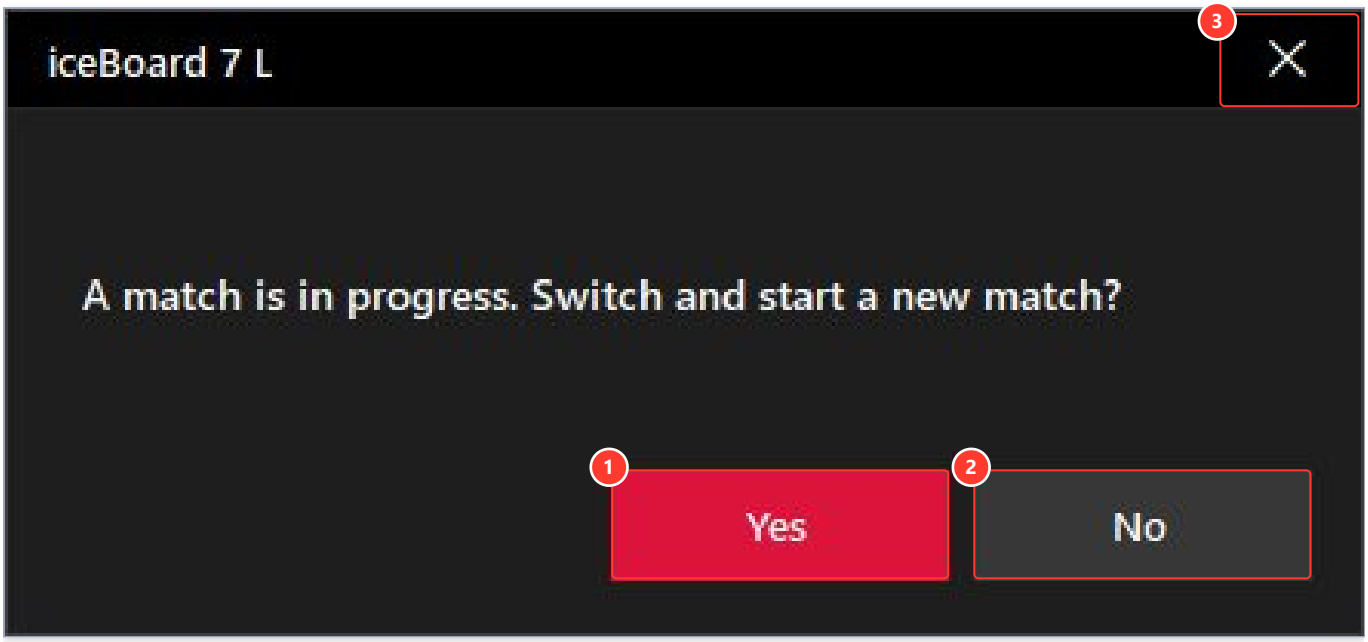


Figure 11. “A match is in progress. Switch and start a new match?”

#	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

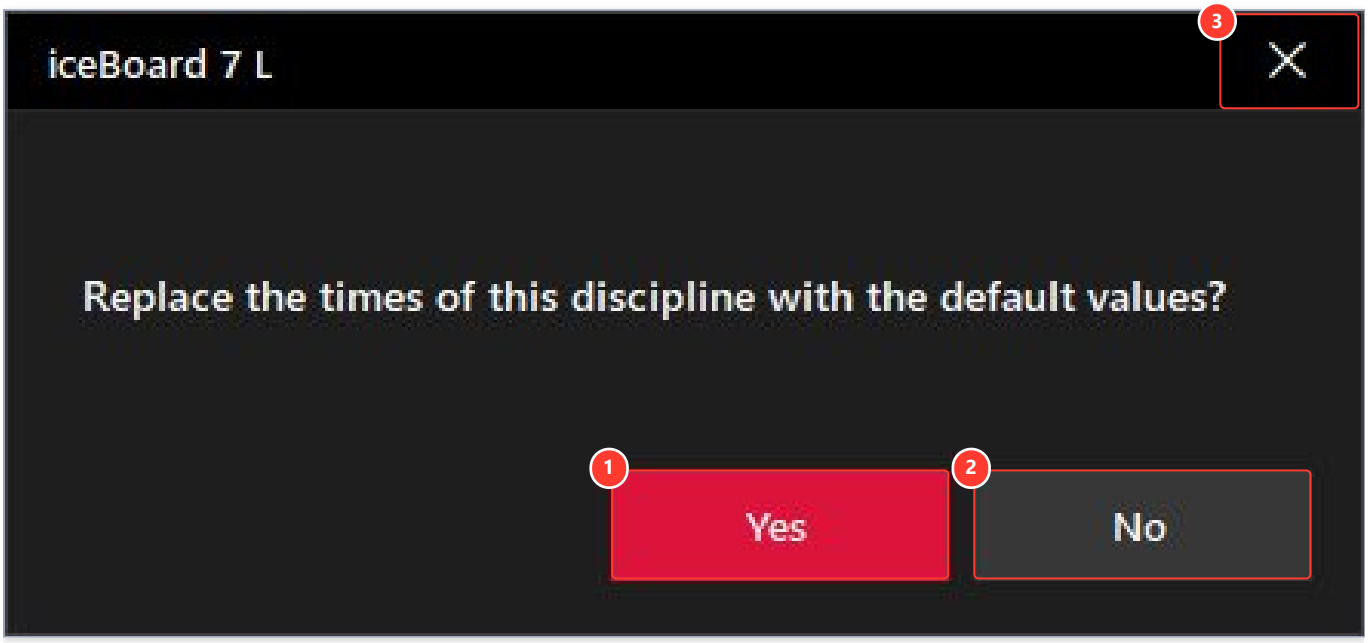


Figure 12. "Replace the times of this discipline with the default values?" (Default Values)

#	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 13. “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.

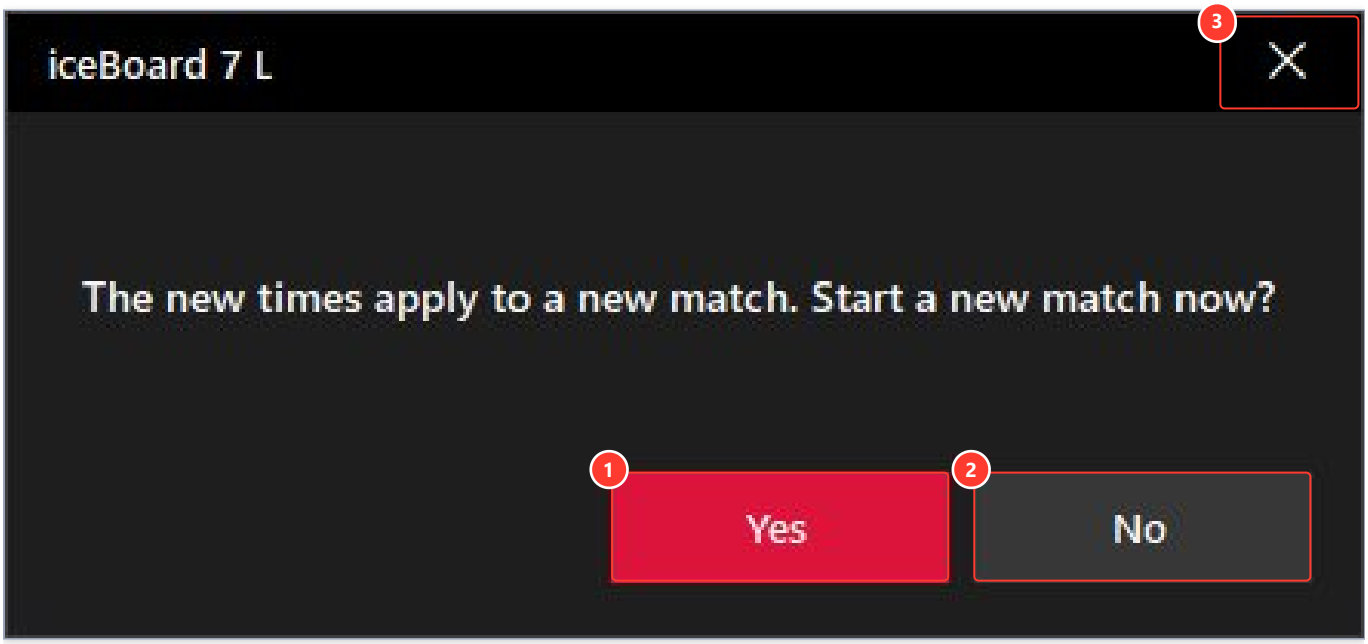


Figure 14. “The new times apply to a new match. Start a new match now?” (Save during a match)

#	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 L 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

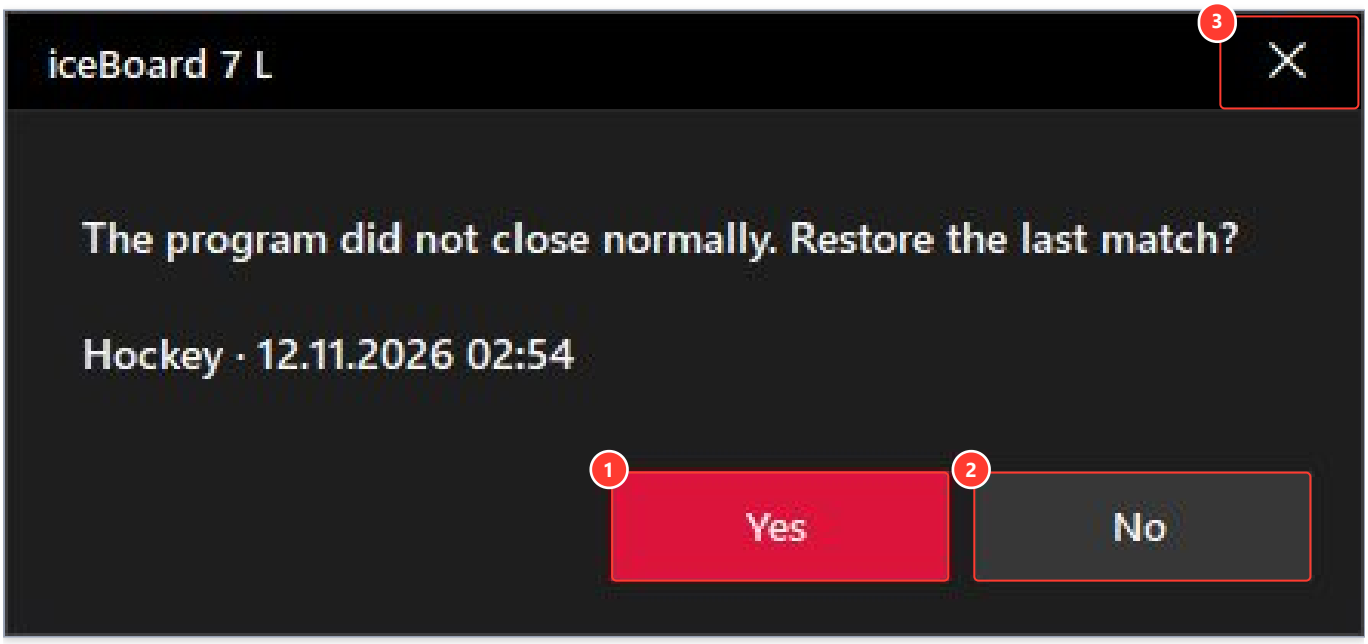


Figure 15. “The program did not close normally. Restore the last match?”

#	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 board is open (St – it opens again by itself at its place when it was on) 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 and the info screens.

The Rows of the Info Page

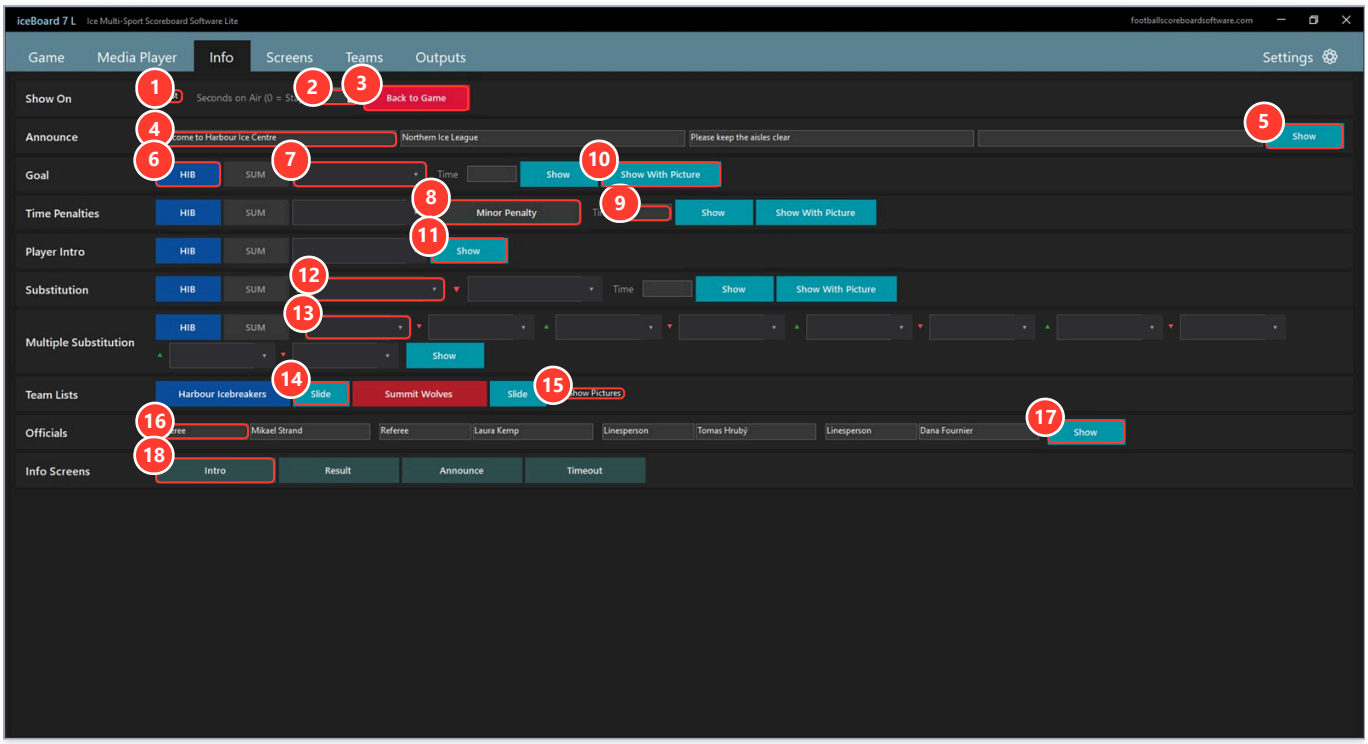


Figure 16. The Info page

#	Control	What it does
1	**Show On: St**	The graphics of this page go to the Standard board as full-screen info screens. Untick it to prepare a row without putting anything on air.
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 the board to the game screen (it also stops a running team slide). A board 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 the board.
6	**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.
7	**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).

#	Control	What it does
8	**Goal: score type**	Where the sport has several score types (goal or behind, try or conversion …), this list chooses the title of the goal graphic.
9	**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.
10	**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).
11	**Player Intro: Show**	Shows one player (number, name, photo when there is one) on St.
12	**Substitution: In ▲ / Out ▼**	The player coming in (green ▲) and the player going out (red ▼). Show / Show With Picture put both on one graphic.
13	**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*).
14	**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.
15	**Show Pictures**	Team lists with the player photos (from the **Photo** column of the Teams page).
16	**Officials**	Four pairs of role and name (referee, umpire, table official, commissioner …). Rows with an empty name are left out.
17	**Officials: Show**	Saves the officials with the team setup and shows the officials graphic on the board.
18	**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. Keep **St** ticked under Show On 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 board returns 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 design has a screen for it. 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.

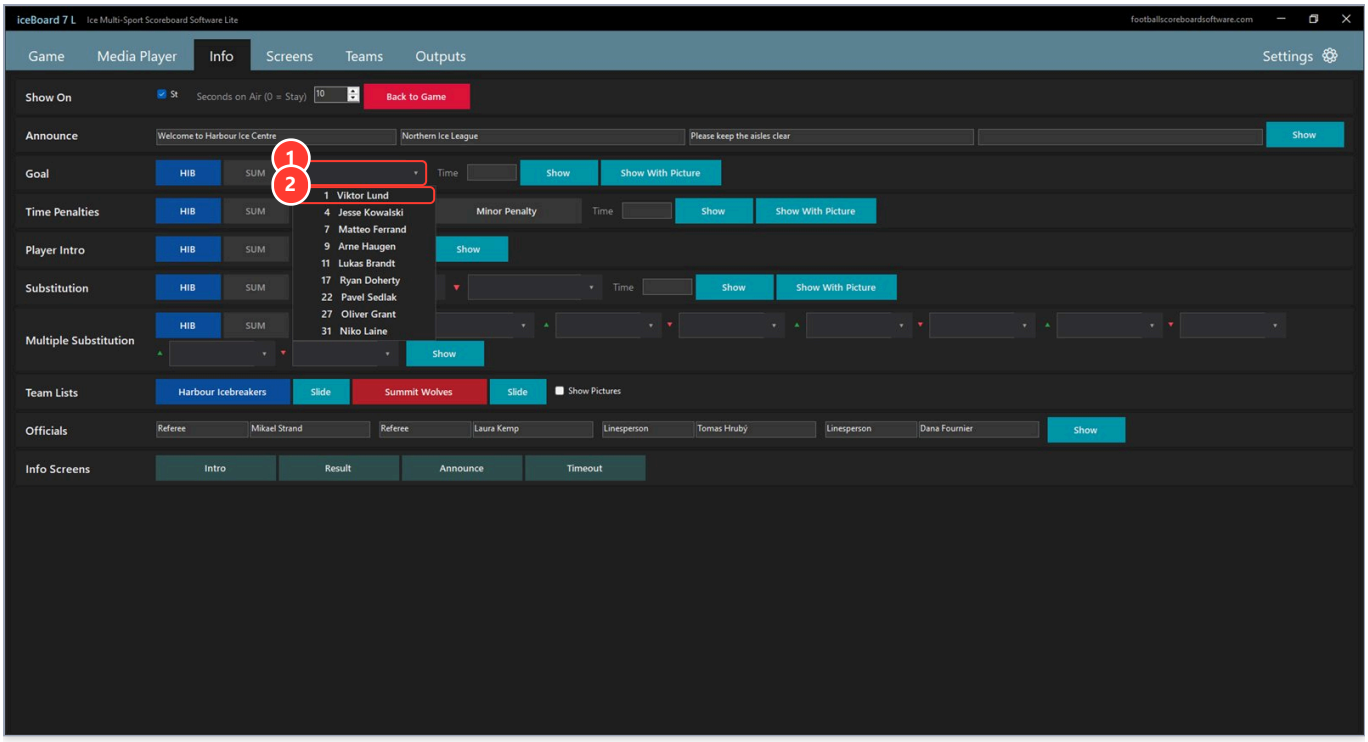


Figure 17. The player list of a player field (Hockey)

#	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

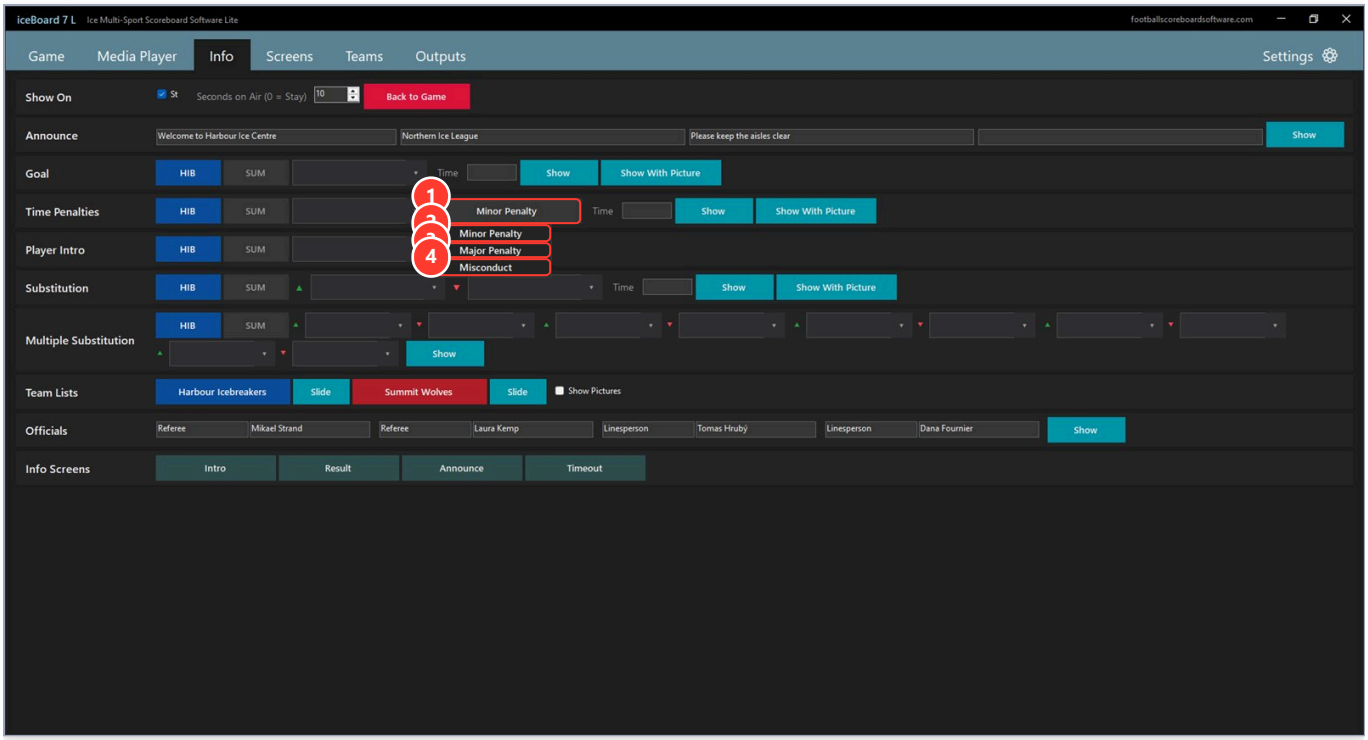


Figure 18. Hockey: the score types of the Goal row

#	Control	What it does
1	**Score type list**	Click to open the list; the chosen entry is the title of the graphic. Goals themselves are counted 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

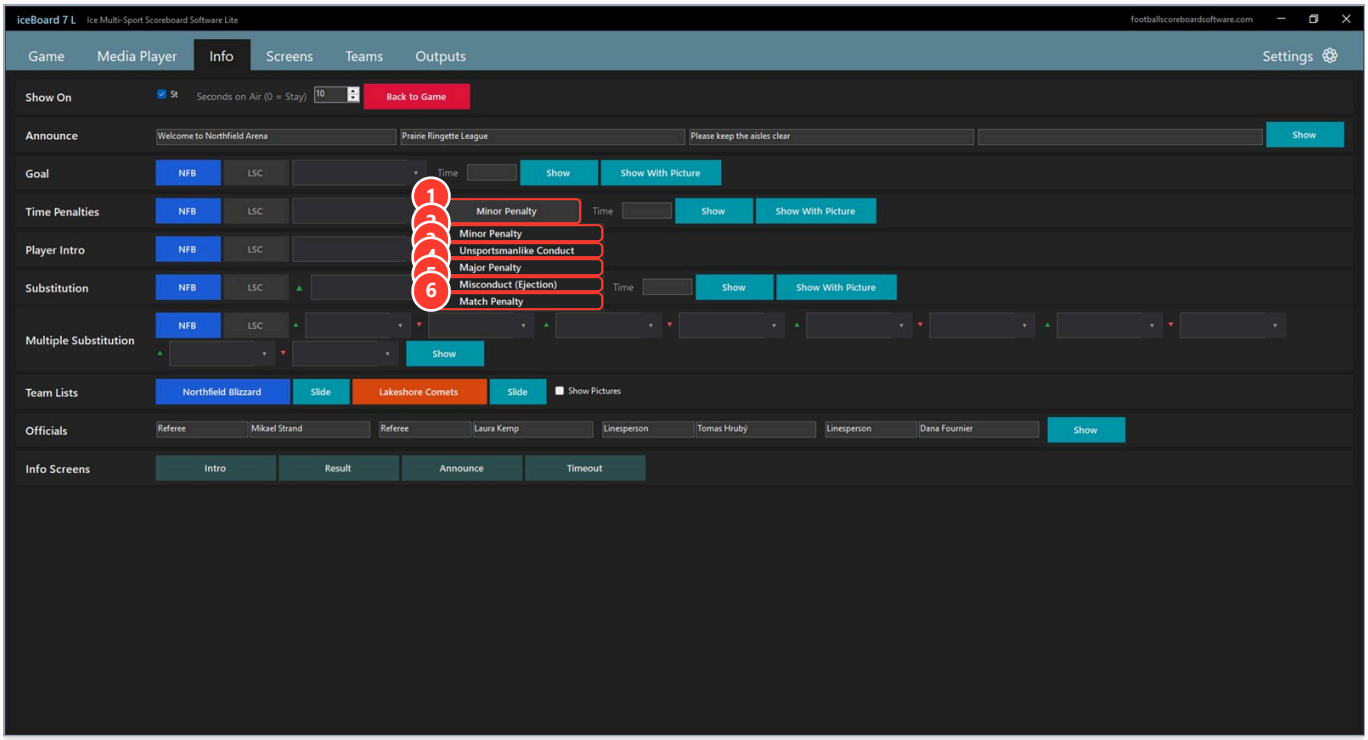


Figure 19. Ringette: the score types of the Goal row

#	Control	What it does
1	**Score type list**	Click to open the list; the chosen entry is the title of the graphic. Goals themselves are counted 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

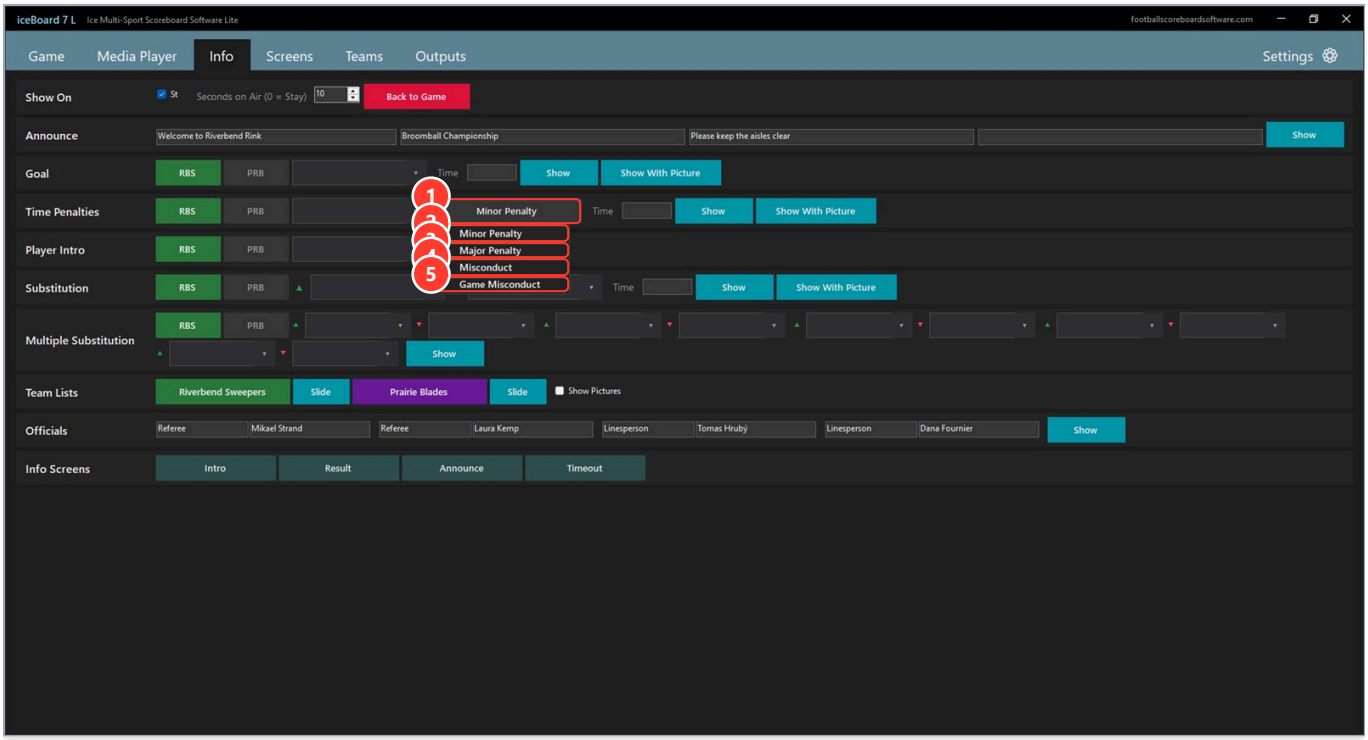


Figure 20. Broomball: the score types of the Goal row

#	Control	What it does
1	**Score type list**	Click to open the list; the chosen entry is the title of the graphic. Goals themselves are counted 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 L:

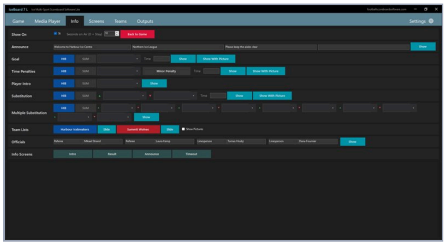


Figure 21. Hockey: Goal row with score types (Minor Penalty ...), Timeout screen

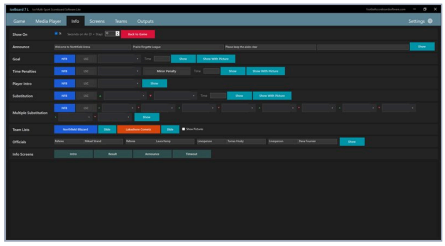


Figure 22. Ringette: Goal row with score types (Minor Penalty ...), Timeout screen

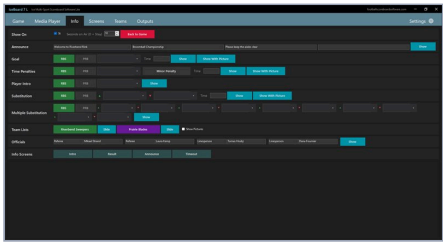


Figure 23. Broomball: Goal row with score types (Minor Penalty ...), Timeout screen

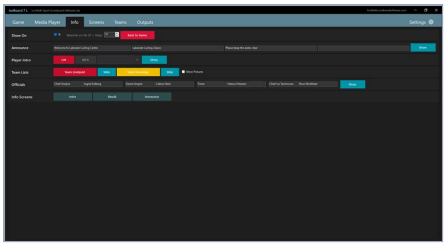


Figure 24. Curling: Goal row

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

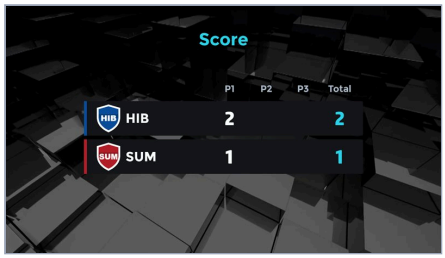


Figure 26. Result

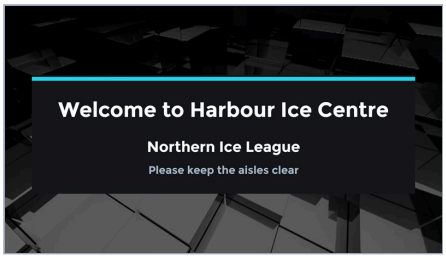


Figure 27. Announce – title and announcement lines

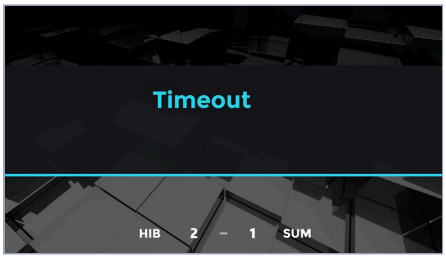


Figure 28. Timeout



Figure 29. Goal – scorer with number, name, photo, team and score



Figure 30. Card / penalty – player, team, type and game time

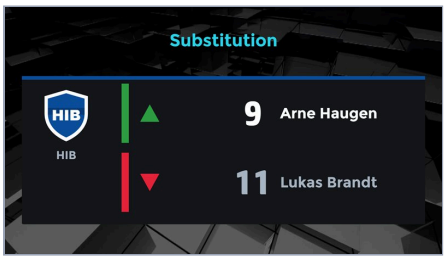


Figure 31. Substitution – player in (▲) and out (▼)

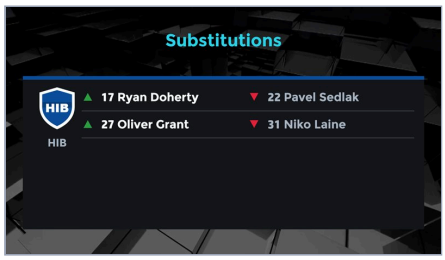


Figure 32. Multiple Substitution – several pairs of one team



Figure 33. Player Intro



Figure 34. Team List



Figure 35. Officials

6 The Screens Page

The Screens page has two columns: the screens of the St board 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.

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

Screen Buttons

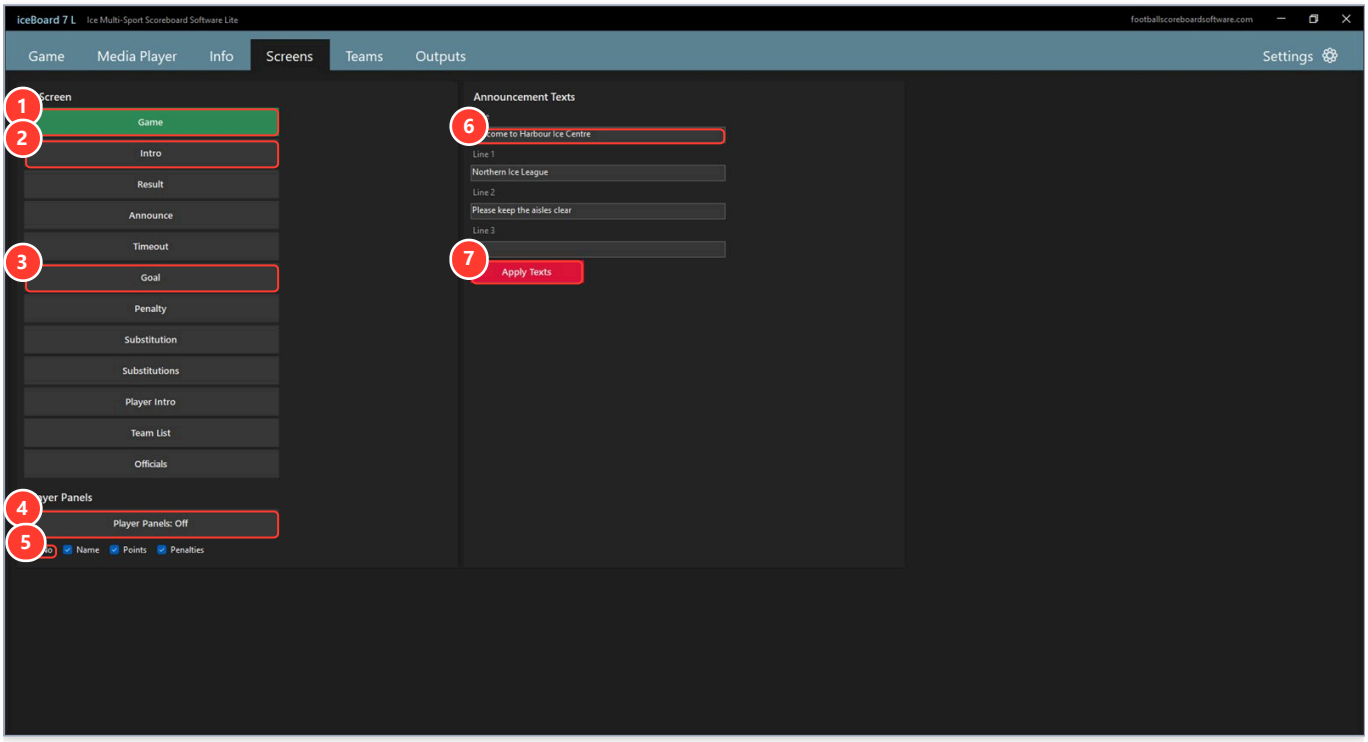


Figure 36. The Screens page

#	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	**Announcement Texts**	**Title** and **Line 1** – **Line 3** of the announcement screens: St Announce shows the title and all three lines. The same texts as in the Announce row of the Info page.
7	**Apply Texts**	Puts the title and the three lines on the board.

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):

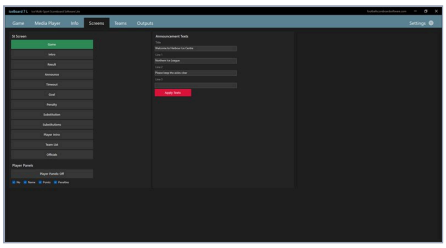


Figure 37. Hockey

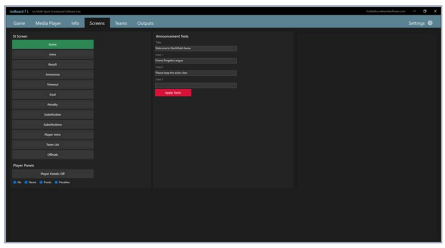


Figure 38. Ringette

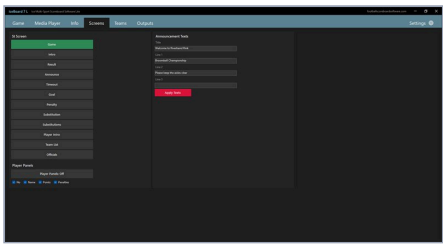


Figure 39. Broomball

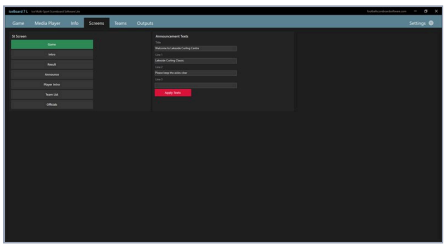


Figure 40. Curling

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

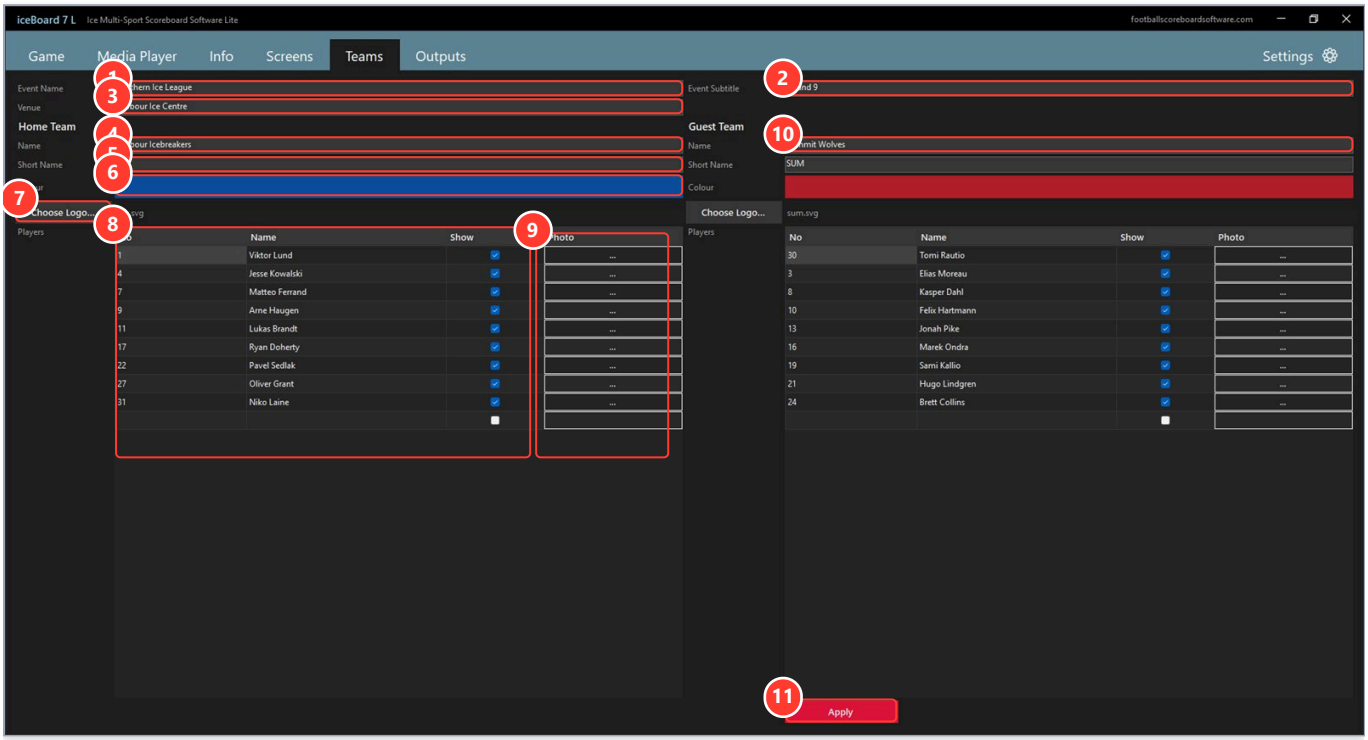


Figure 41. The Teams page

#	Control	What it does
1	**Event Name**	The competition or event (league, cup, tournament). Shown on the Intro screen.
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 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

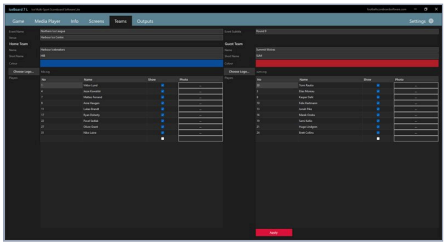


Figure 42. Hockey

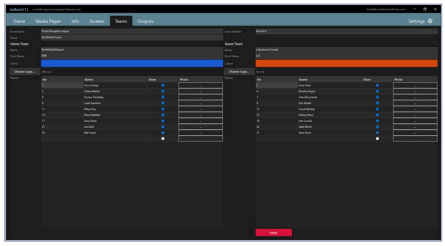


Figure 43. Ringette

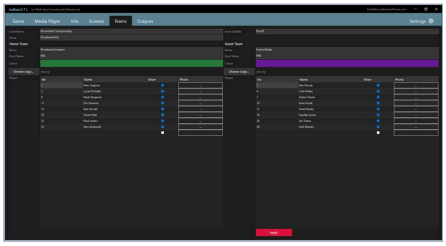


Figure 44. Broomball

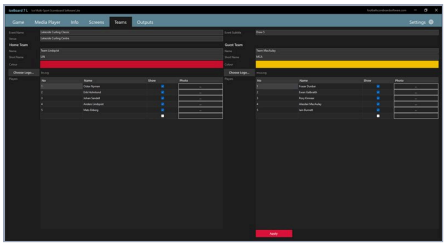


Figure 45. Curling

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 L 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 board window. 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

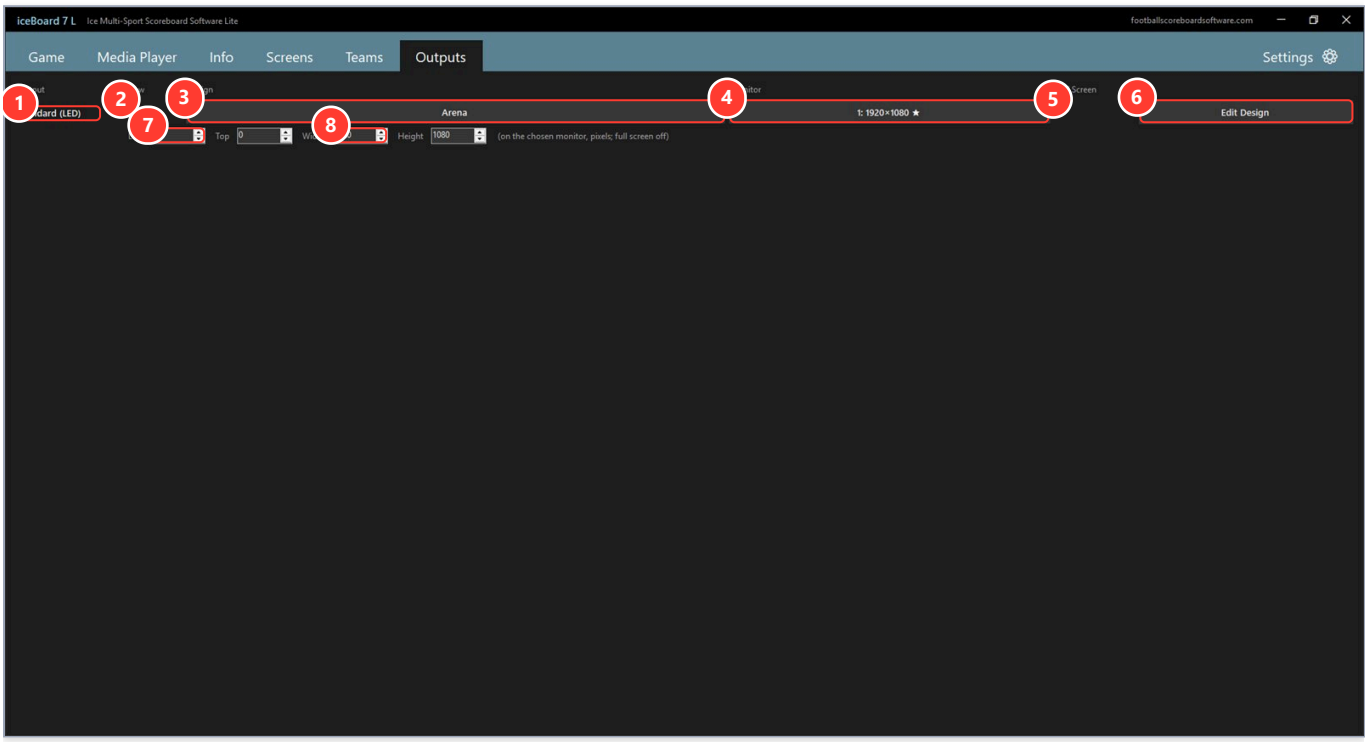


Figure 46. The Outputs page

#	Control	What it does
1	Output	**Standard (LED)** = St, the board output of iceBoard 7 L.
2	Show	Opens or closes the output window – the same as the St button 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	Edit Design	Opens the design editor with the design and the current screen of this output.
7	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*.
8	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.

Choosing a Design

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

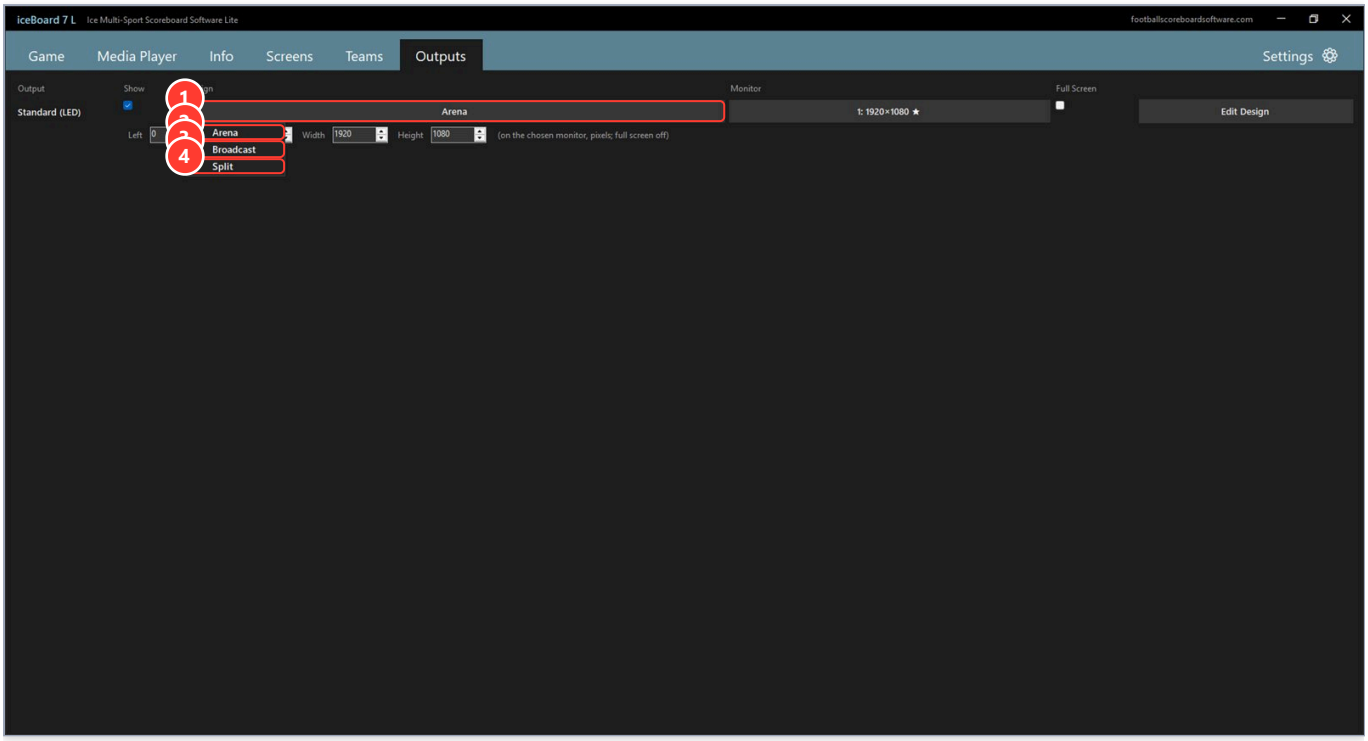


Figure 47. The design list of the Standard (LED) output

#	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.
3	**Broadcast**	Master design: header strip and team rows.
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 board. 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.

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

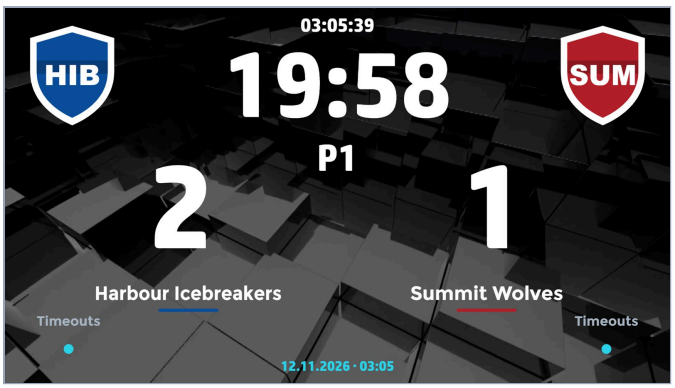


Figure 48. St board with the background video

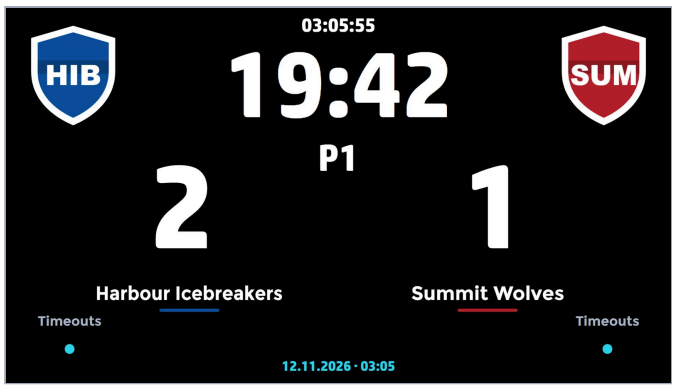
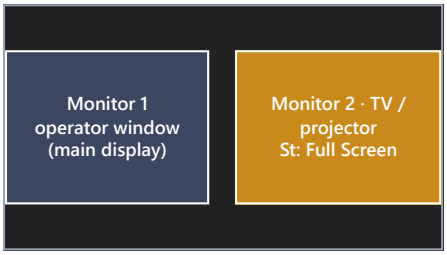


Figure 49. The same board without background (the design's own black)

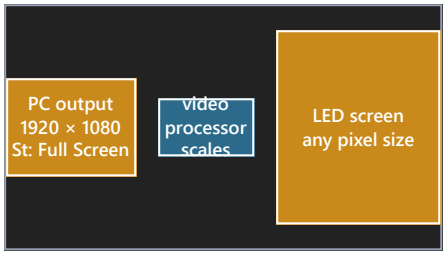
9 Sending the Board to the LED Screen

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 L puts the board window on that monitor – either filling it (**Full Screen**) or on an exact pixel area (**Left / Top / Width / Height**).

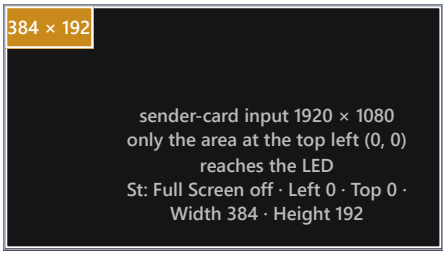
> **Note** **This is a one-time setting.** Everything on the Outputs page is saved at once. At every later start iceBoard 7 L opens the board again by itself on the same monitor at the same place. You do not have to repeat it before each match – only when the LED, the processor, the sender card or the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

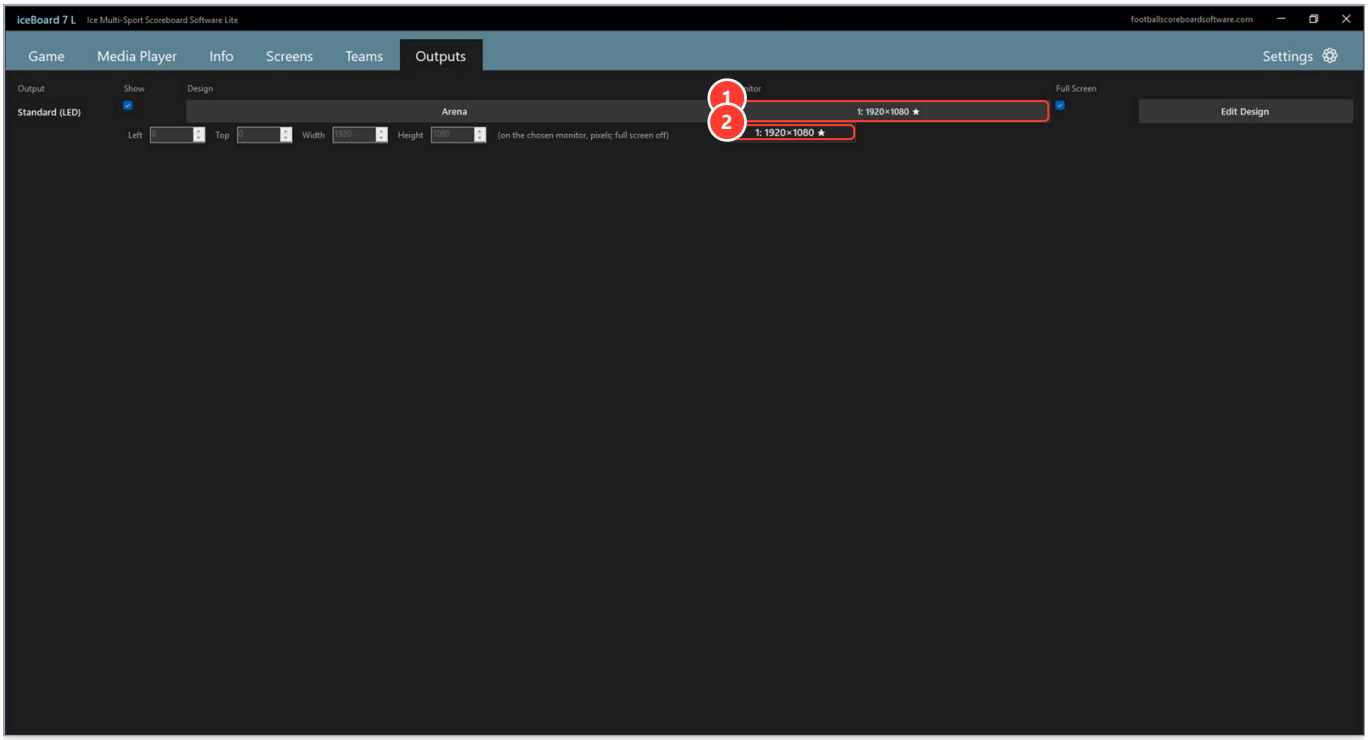


Figure 50. The Monitor list of the Standard (LED) row (this PC has one monitor; with more monitors each one is listed)

#	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

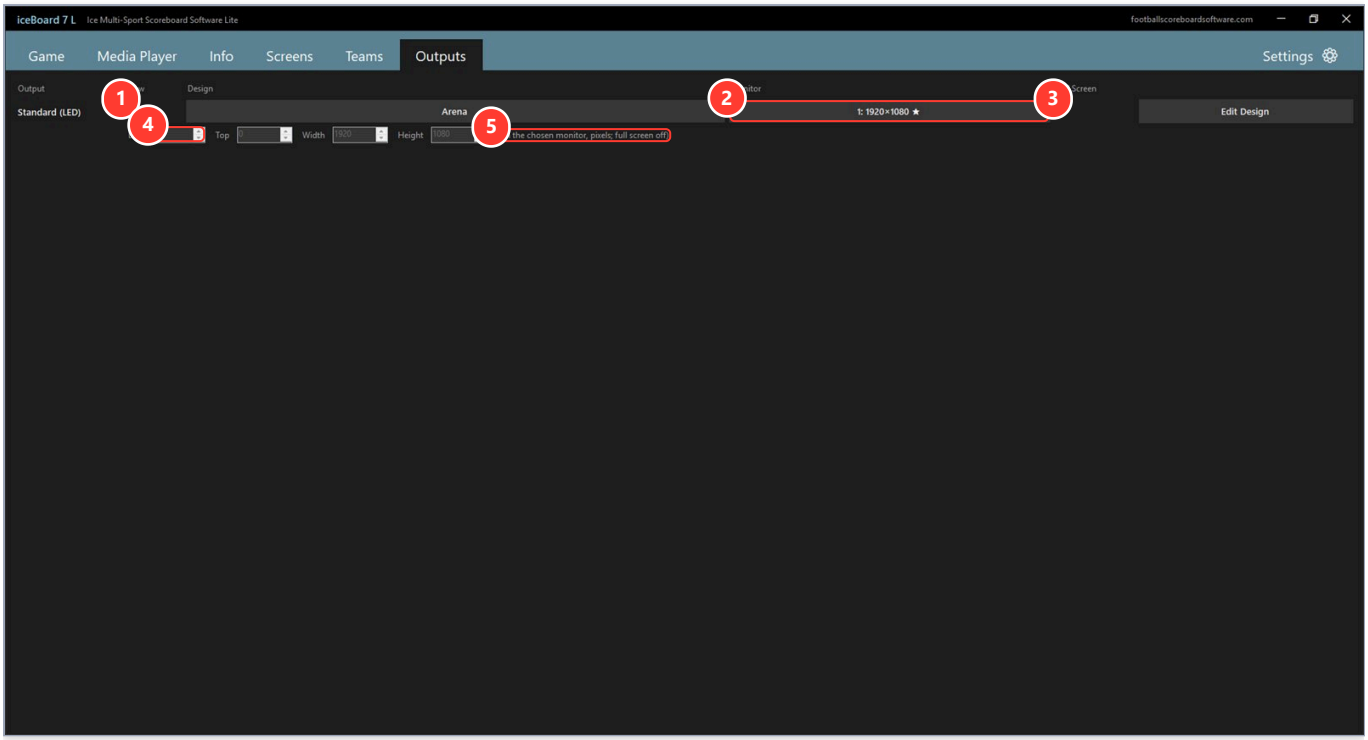


Figure 51. Standard (LED) on the whole monitor (Full Screen ticked)

#	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

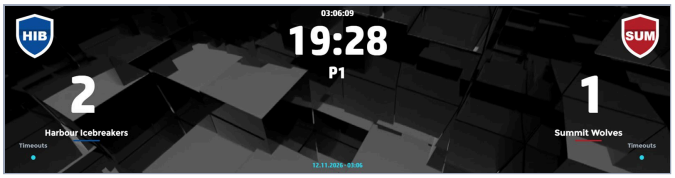


Figure 52. The St board in a 1920 × 480 area (Full Screen off, Left 0, Top 0, Width 1920, Height 480)

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

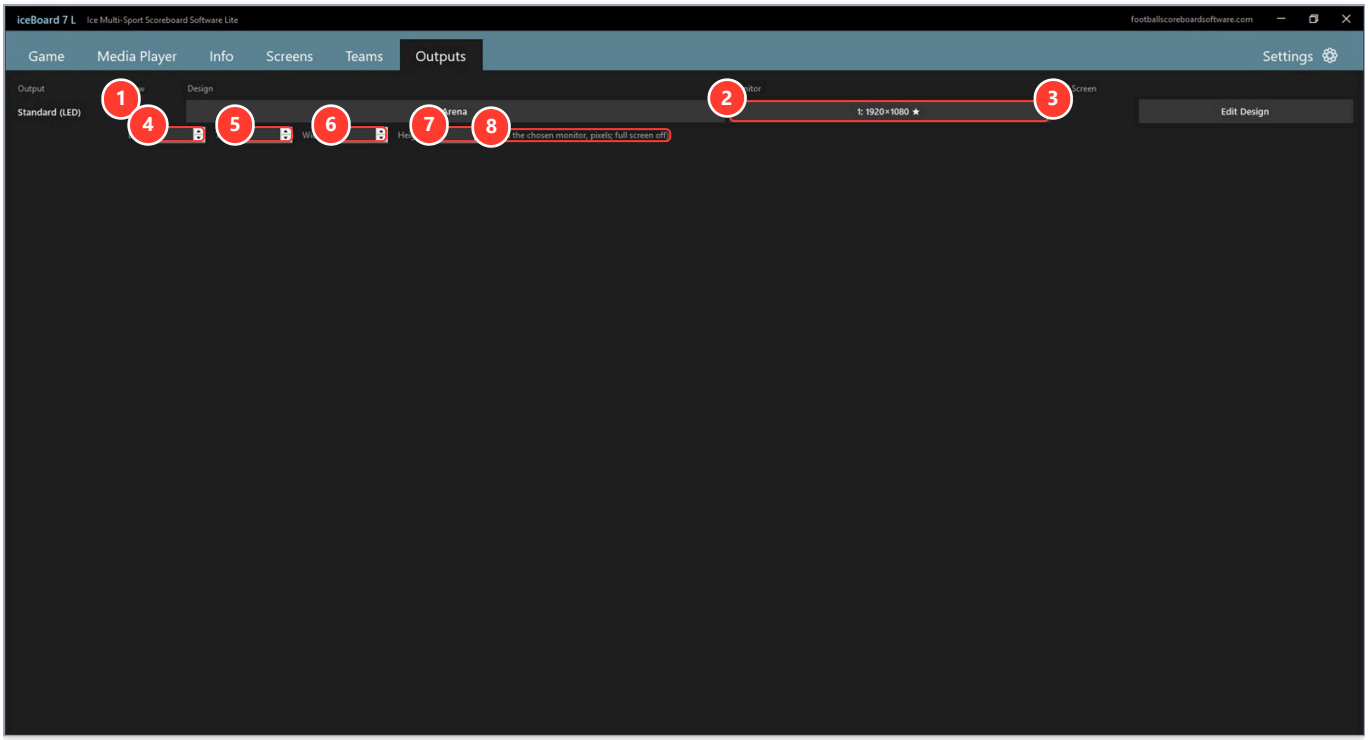


Figure 53. Standard (LED) on a 384 × 192 area at the top left of the sender card's monitor

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

Several Outputs

iceBoard 7 L has one board output, **St**. Choose the monitor and area of your LED screen for it as described above. The Pro edition of the program adds further outputs for more screens (see *Pro and Lite Editions* in the introduction).

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 L 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 L.

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 one playlist. A clip plays on the St board.

- 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 are hidden or blocked).

The Media Player Page

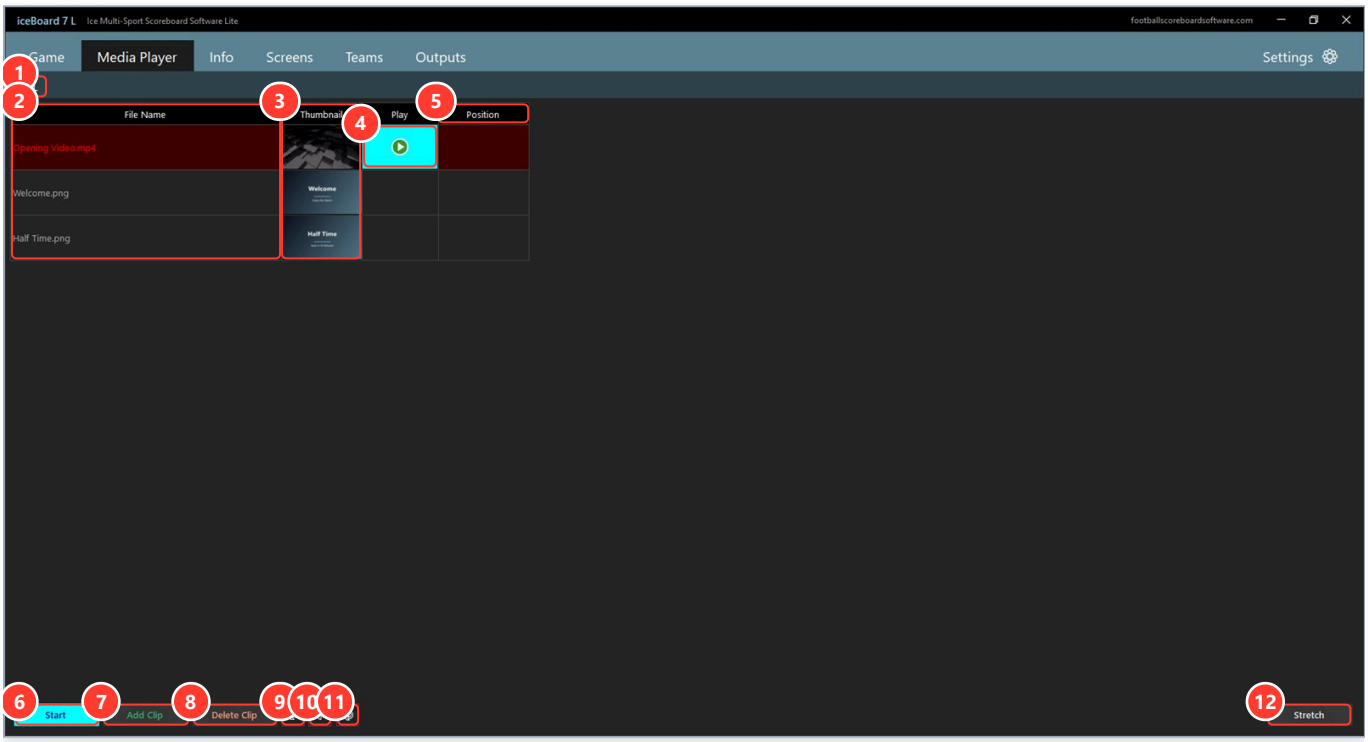


Figure 55. The Media Player page with three clips

#	Control	What it does
1	**URL**	Opens the list of web addresses (web pages, streams, YouTube links) to show on the board (below).
2	**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.
3	**Thumbnail**	A small picture of the clip (videos: the Windows thumbnail).
4	**Play**	The selected row has a turquoise ▶ button: it plays this one clip on the board (with Repeat on: again and again).

#	Control	What it does
5	**Position**	While a clip plays: the time left (m:ss).
6	**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.
7	**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.
8	**Delete Clip**	Removes the selected row from the playlist (the file stays).
9	**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.
10	**Sound On / Off**	Green frame = the sound of the clips plays. Off by default.
11	**Auto Repeat**	Green frame = the playing clip starts again when it ends (Play of one clip).
12	**Display Mode**	How a clip fills the board (list below).

While a Clip Plays

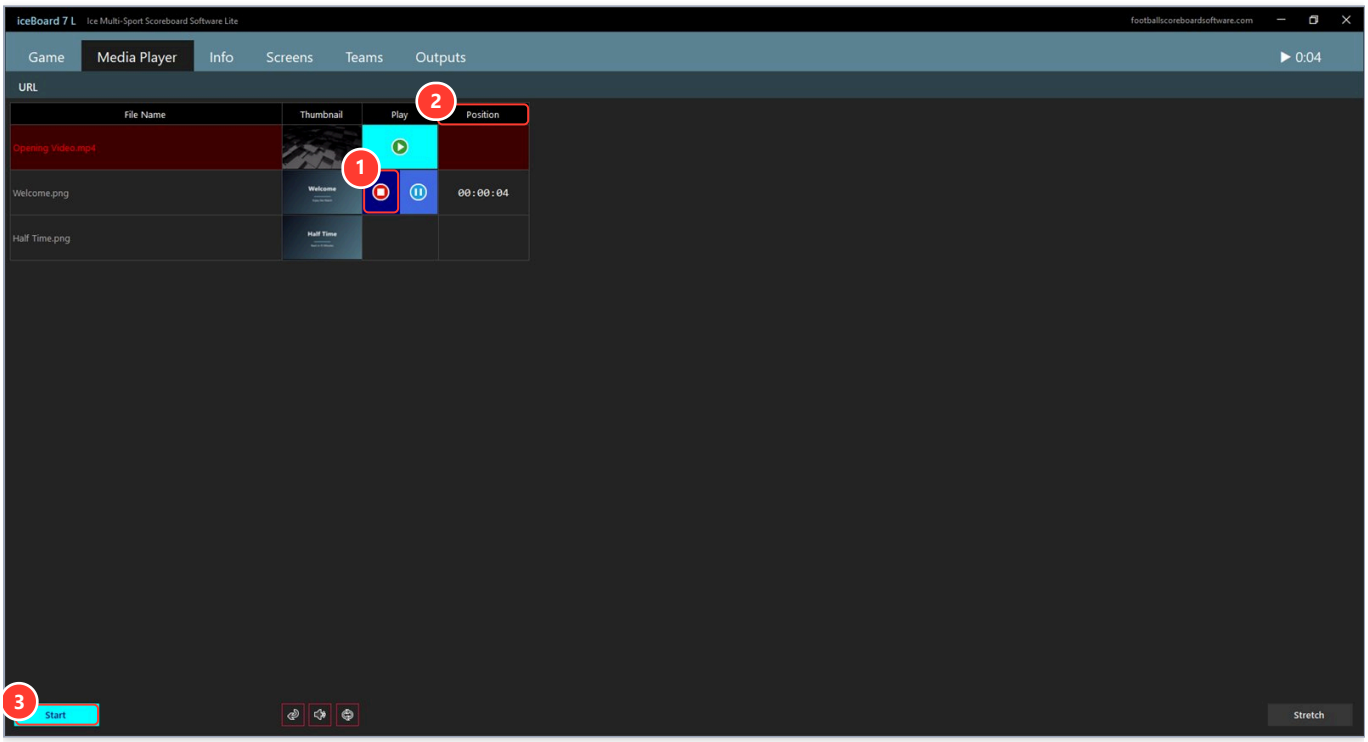


Figure 56. A slide of the playlist on the board

#	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).

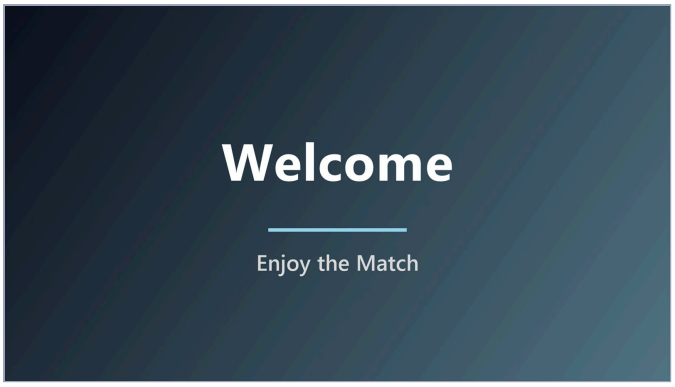


Figure 57. The St board showing the slide “Welcome” of the Media Player

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

Display Modes

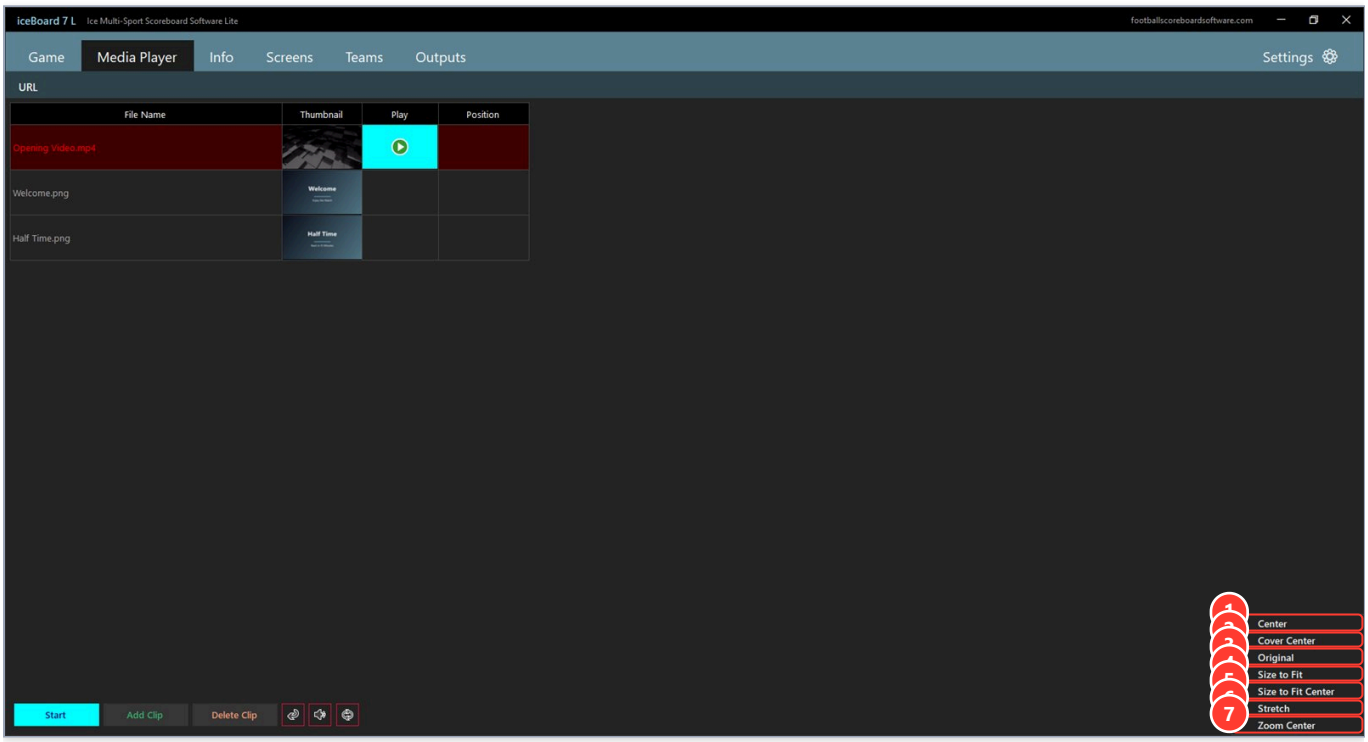


Figure 58. The display modes of the Media Player

#	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.
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).

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.

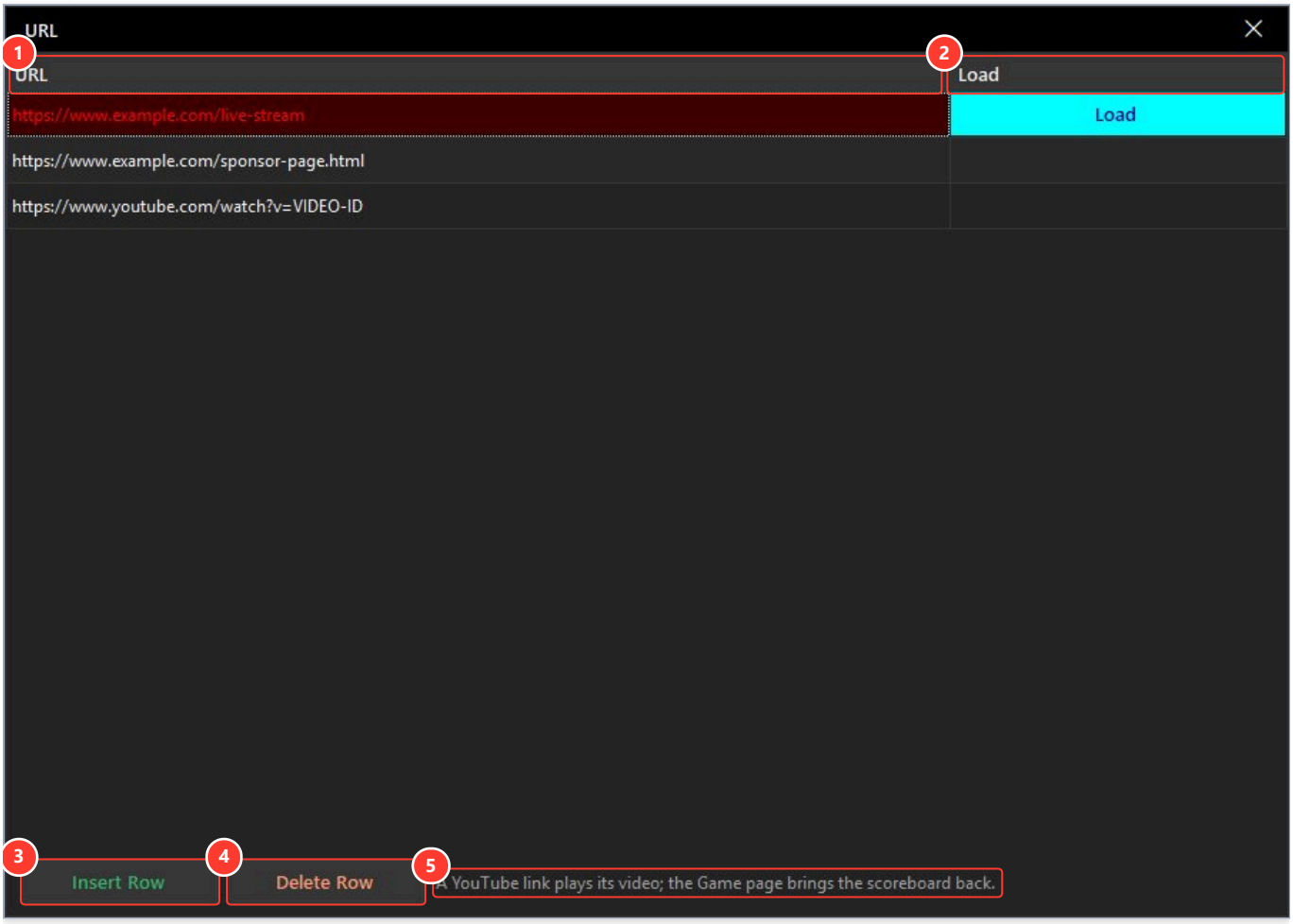


Figure 59. The URL list

#	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: **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	Plays the playlist from the first clip.
media.stop	Back to the scoreboard.

Command (POST /api/command)	What it does
media.pause	Pause / continue.
media.next	The next clip of the running playlist.
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

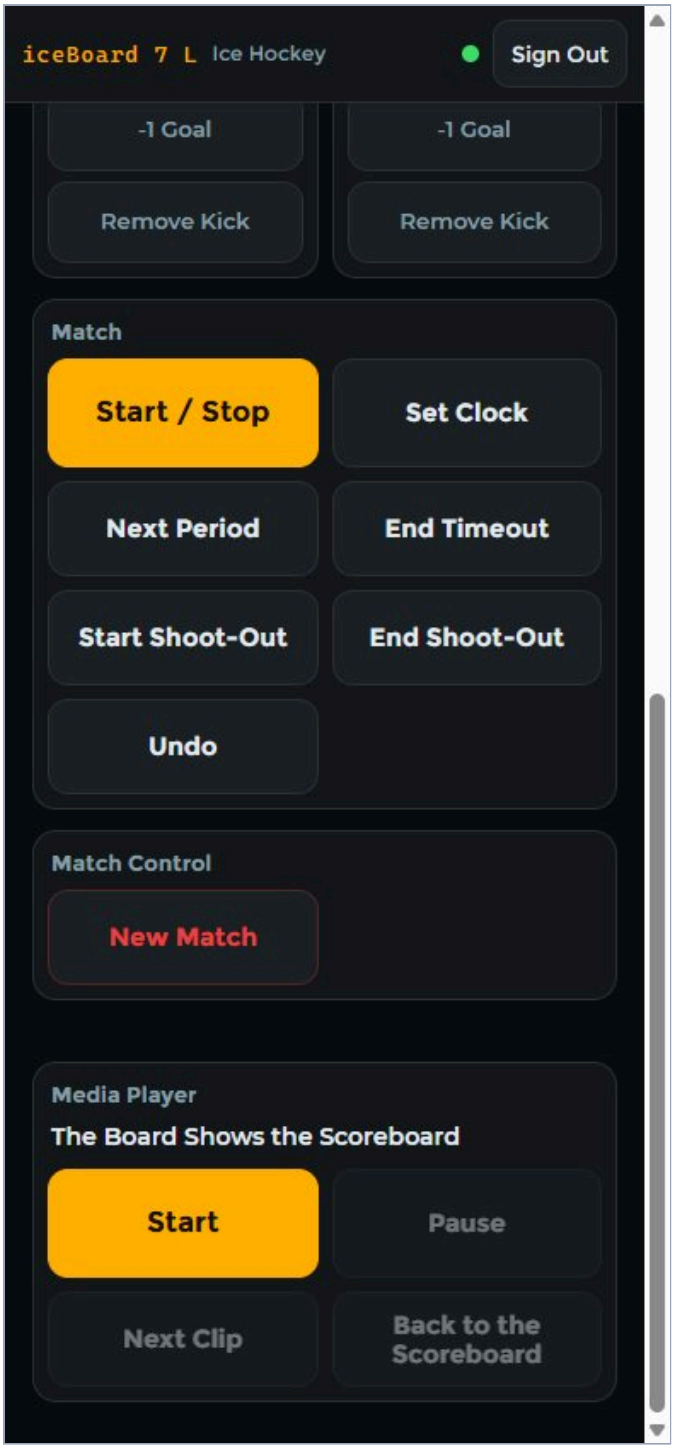


Figure 60. The Media Player block at the end of the remote panel (phone)

11 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) and **Split** (team panels left and right of a centre column). A design contains all screens of the St board.

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

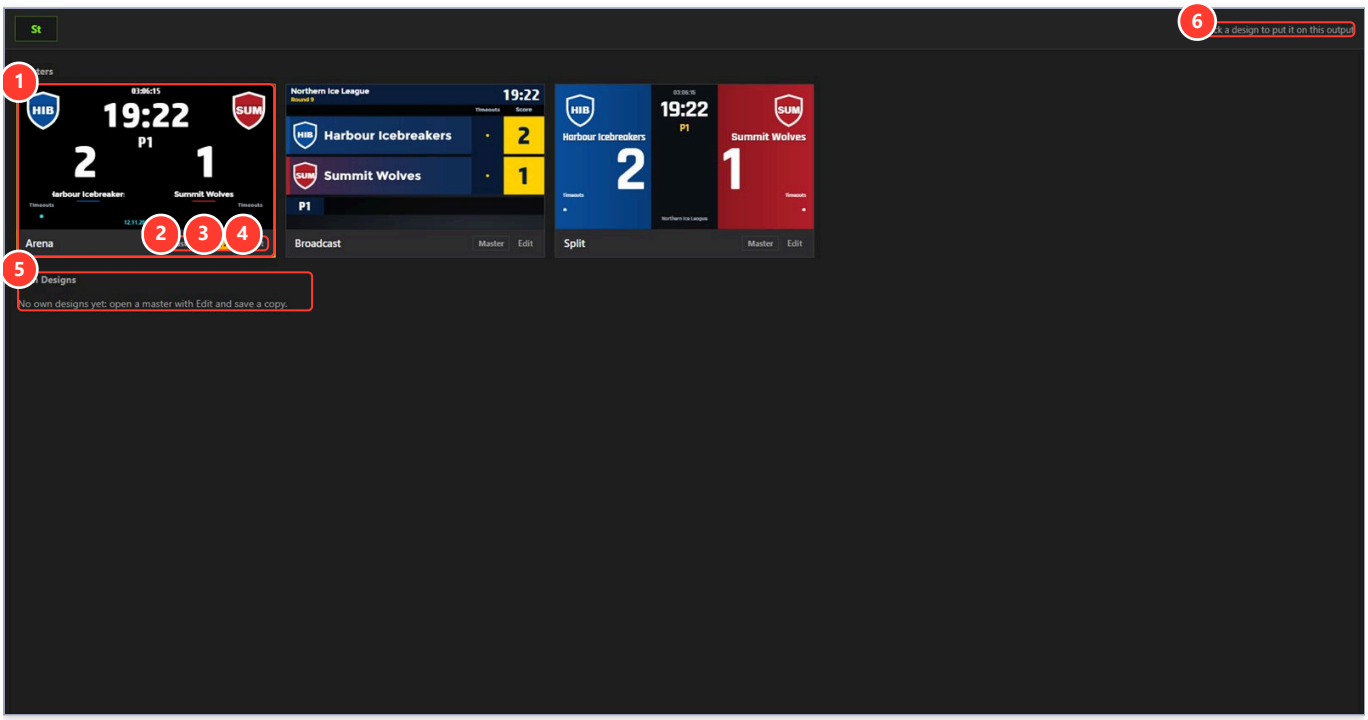


Figure 61. The design gallery

#	Control	What it does
1	**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.
2	**Master / Own**	Whether the design is a factory master or one of your own designs.
3	**On Air**	Marks the design the output uses now (the card also has an amber frame).
4	**Edit**	Opens this design in the design editor.
5	**Own Designs**	Your own copies. Until you save a copy of a master, this part says that there are no own designs yet.
6	**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.

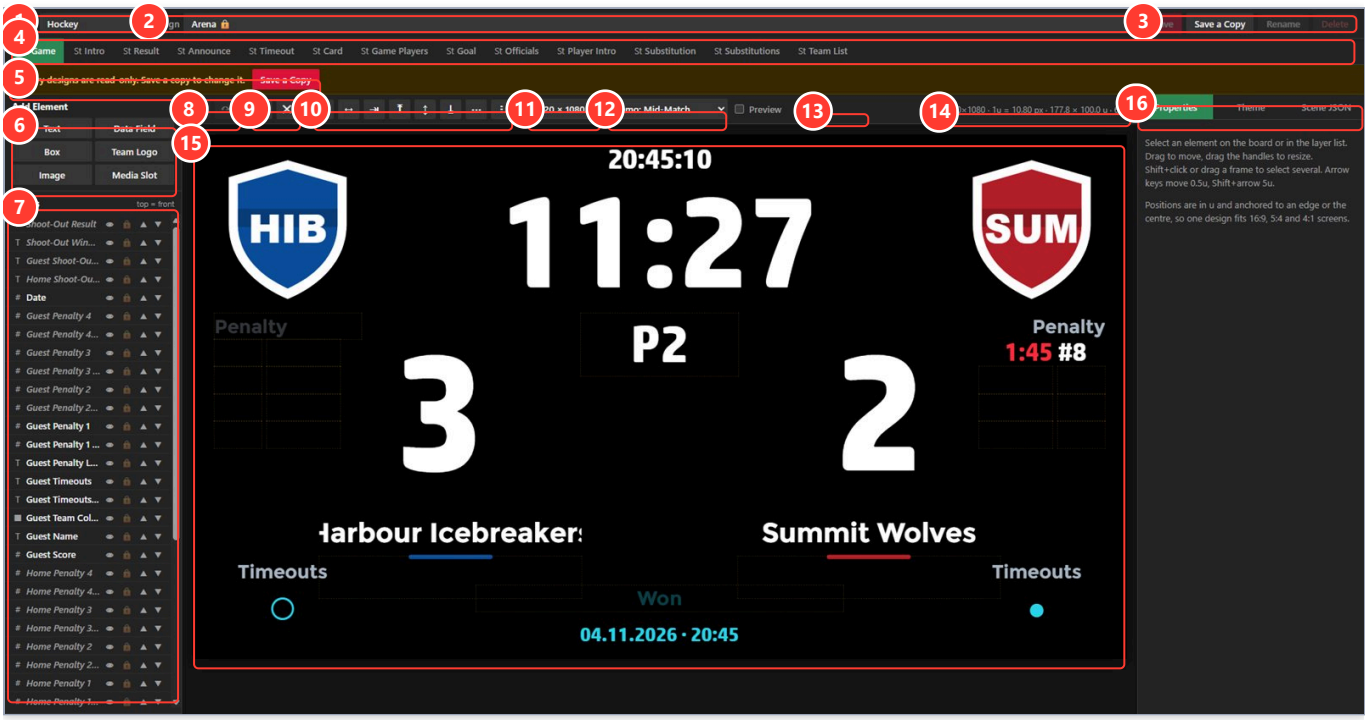


Figure 62. The design editor

#	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 St screens of the design: St Game, the info screens, St Game Players and the event screens. 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).
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`).
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.

#	Control	What it does
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	**Preview**	Hides the selection frames and handles to see the screen as on air.
14	**Scale**	The preview size, the editor unit (1 u = 1 % of the smaller side), the screen in units and the zoom of the canvas.
15	**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.
16	**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. **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.

12 Settings

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

The Settings Page

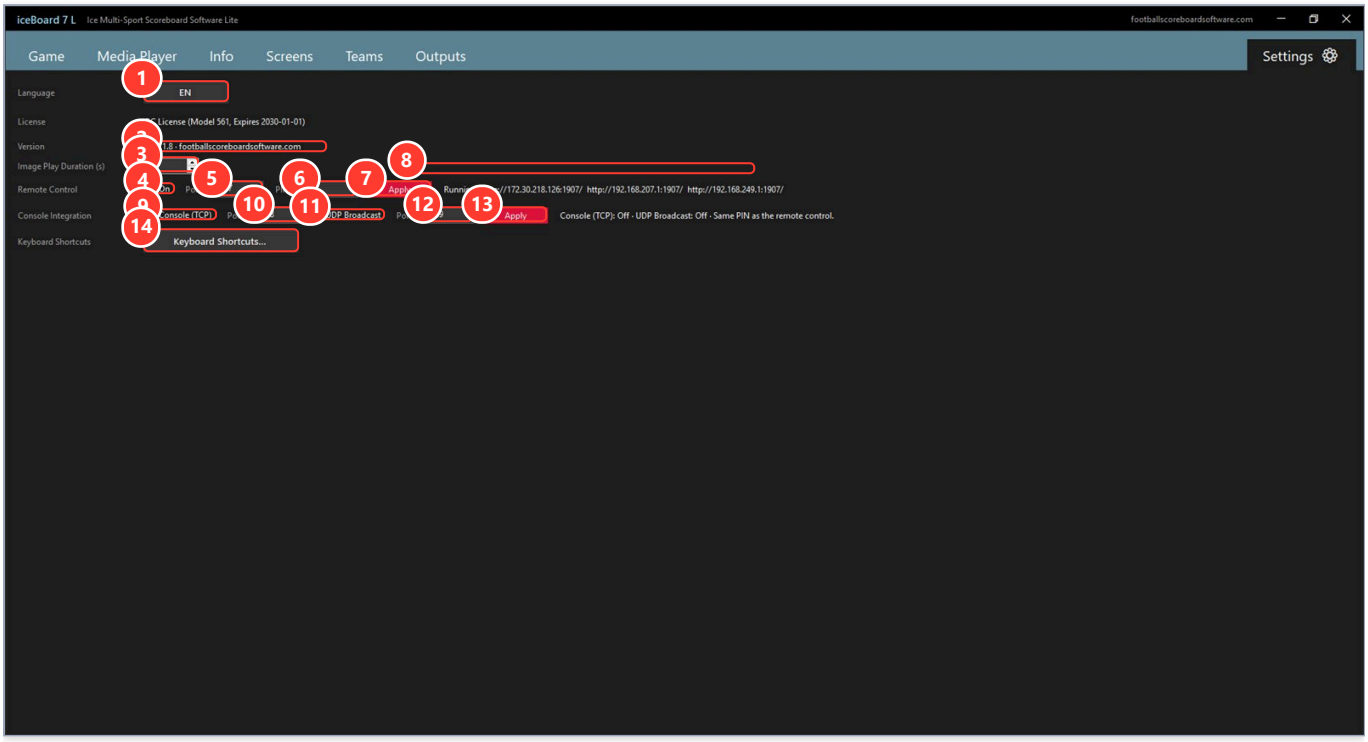


Figure 63. The Settings page

#	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.

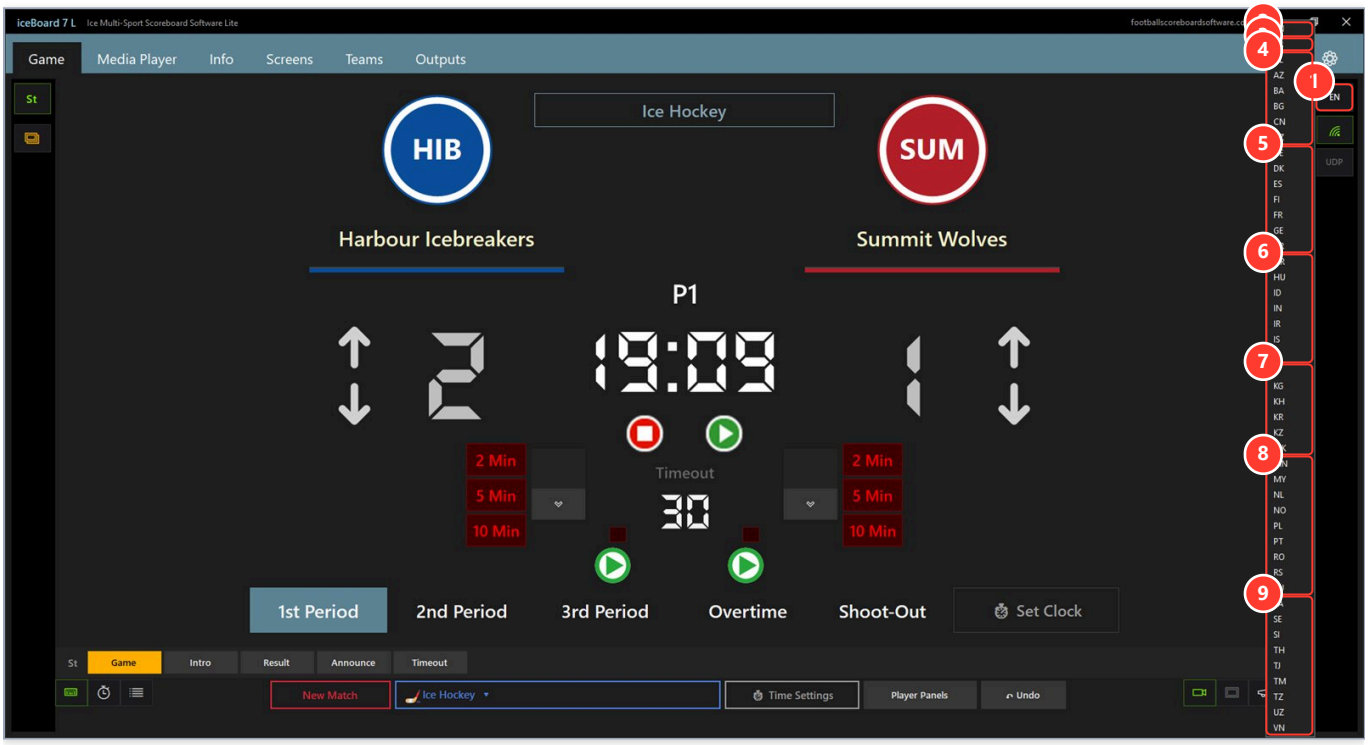


Figure 64. The language menu on the right strip

#	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

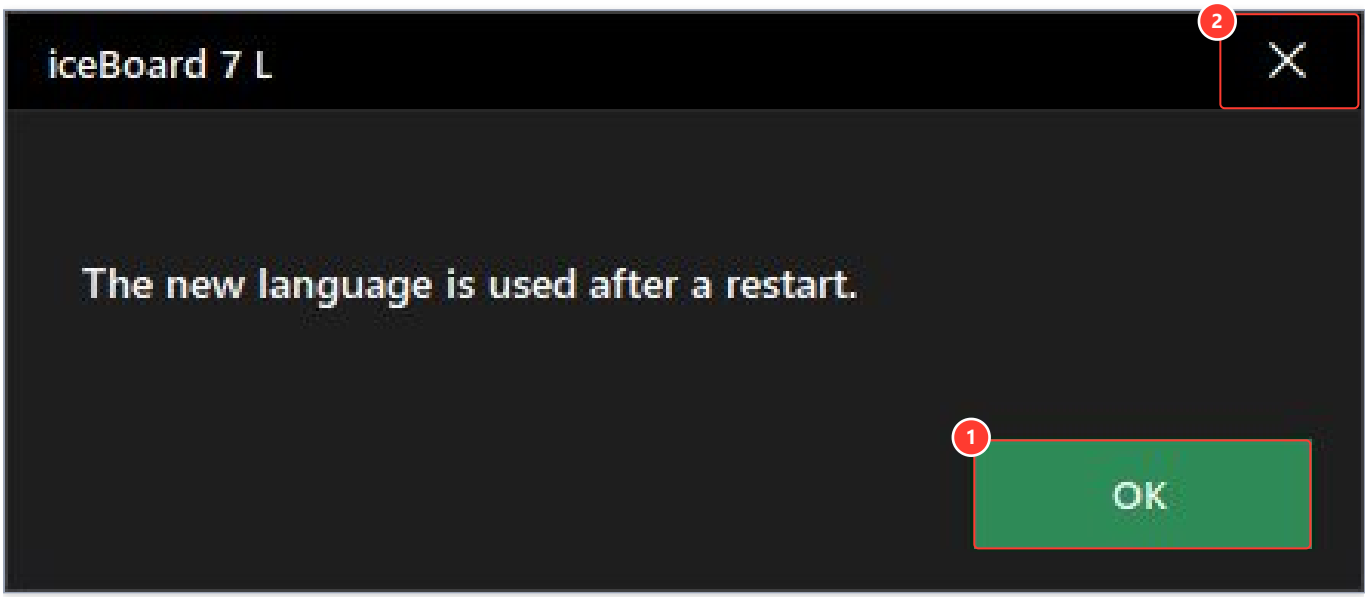


Figure 65. “The new language is used after a restart.”

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

13 Keyboard Shortcuts

iceBoard 7 L 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

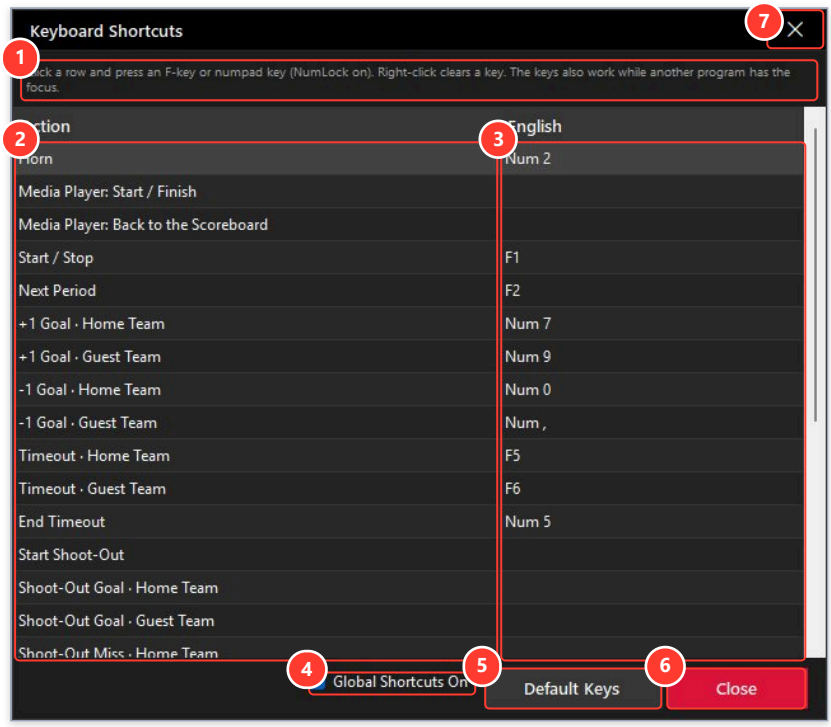


Figure 66. The keyboard shortcut editor

#	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.

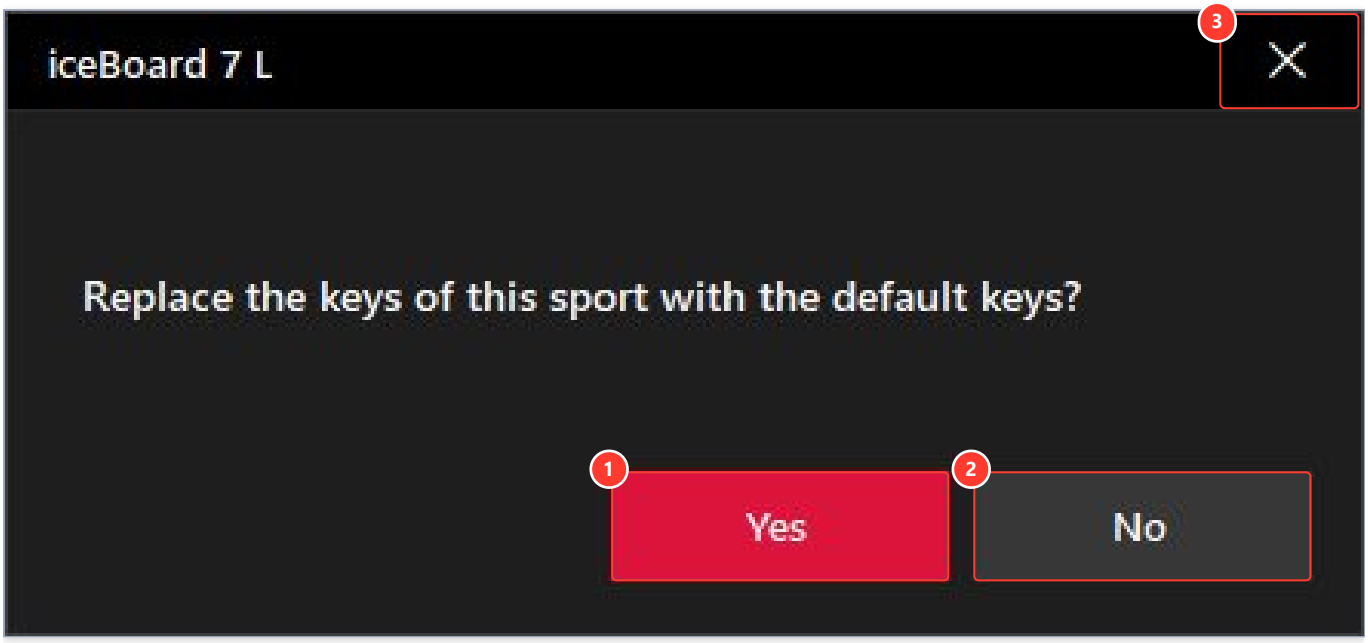


Figure 67. "Replace the keys of this sport with the default keys?"

#	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 L (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:

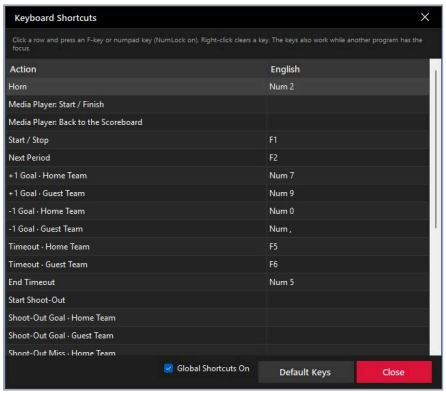


Figure 68. Hockey

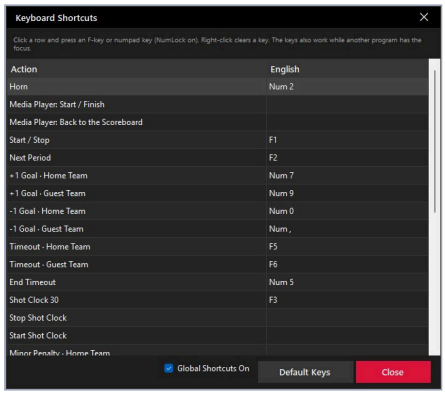


Figure 69. Ringette

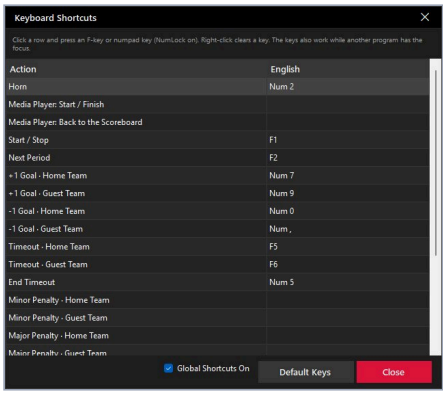


Figure 70. Broomball

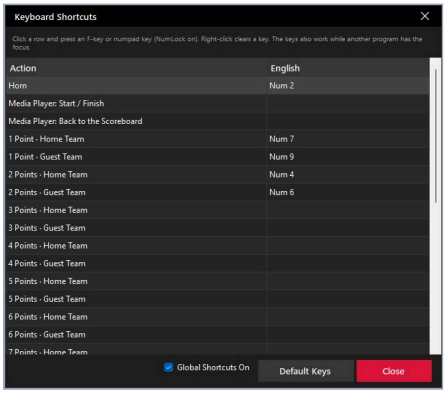


Figure 71. Curling

14 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

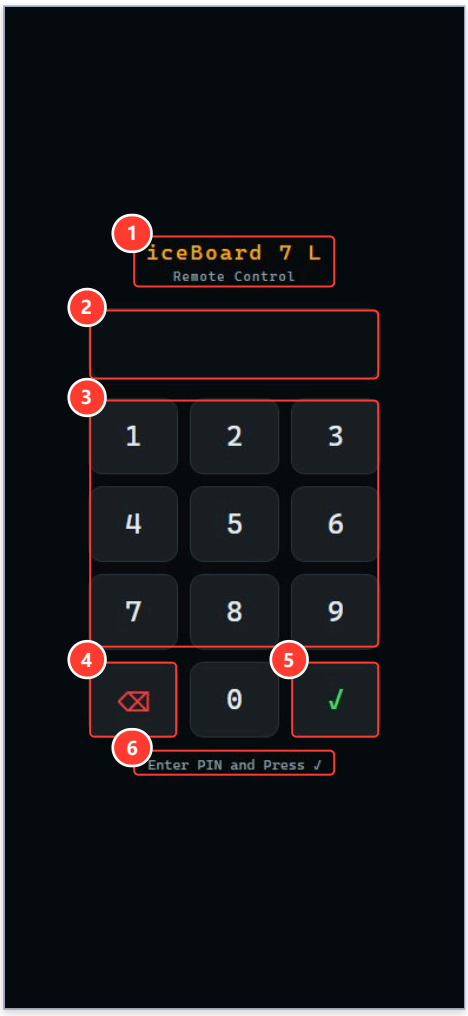


Figure 72. The sign-in page on a phone

#	Control	What it does
1	**Title**	The product name (iceBoard 7 L) 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*).

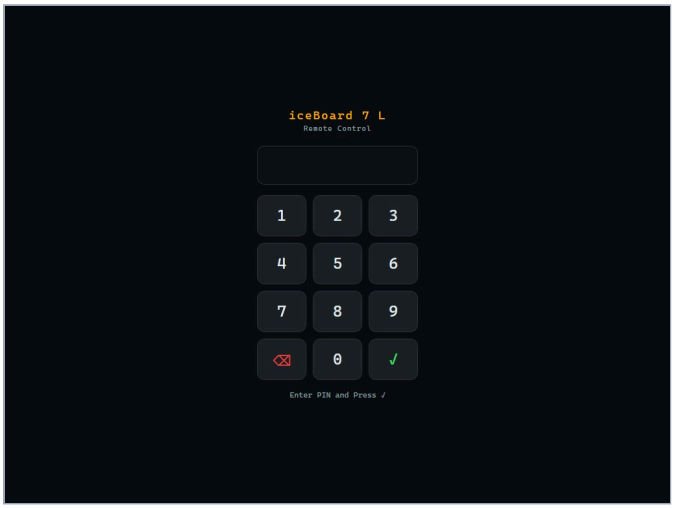


Figure 73. The same page on a tablet

- 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:

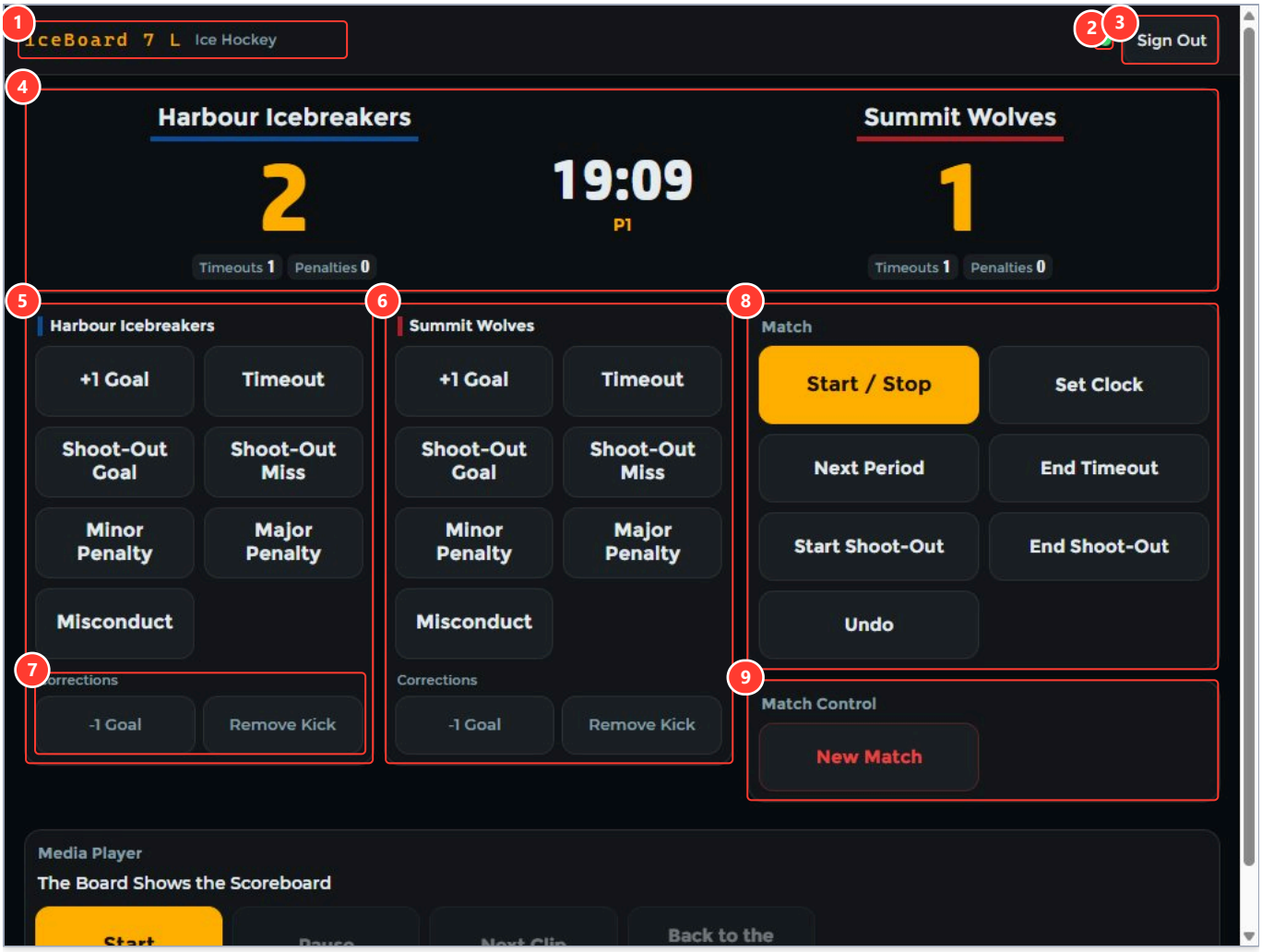


Figure 74. The remote panel on a tablet (Hockey)

#	Control	What it does
1	Title and sport	The product name (iceBoard 7 L), 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.

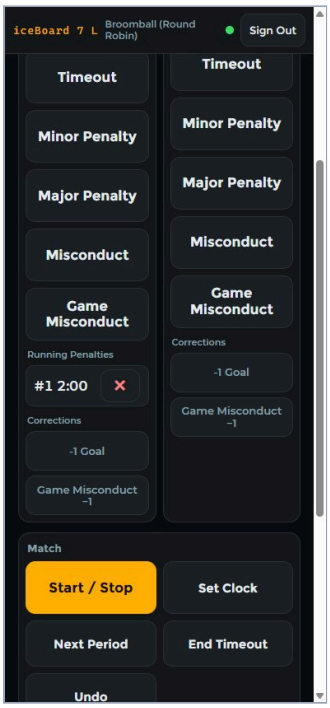


Figure 75. Broomball: a running penalty on the phone

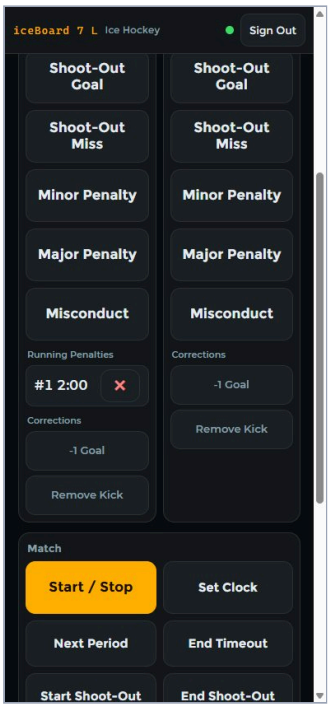


Figure 76. Hockey: a running penalty on the phone

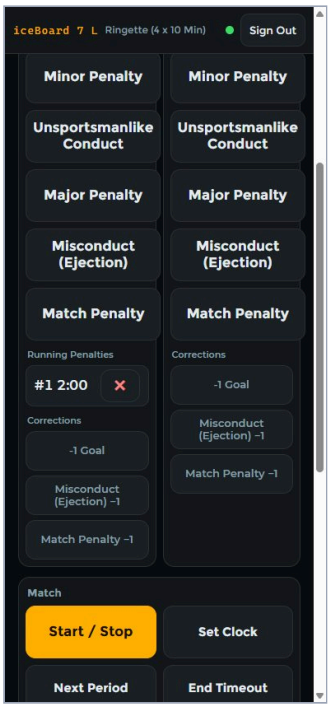


Figure 77. Ringette: a running penalty on the phone

Input and Confirmation Sheets

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

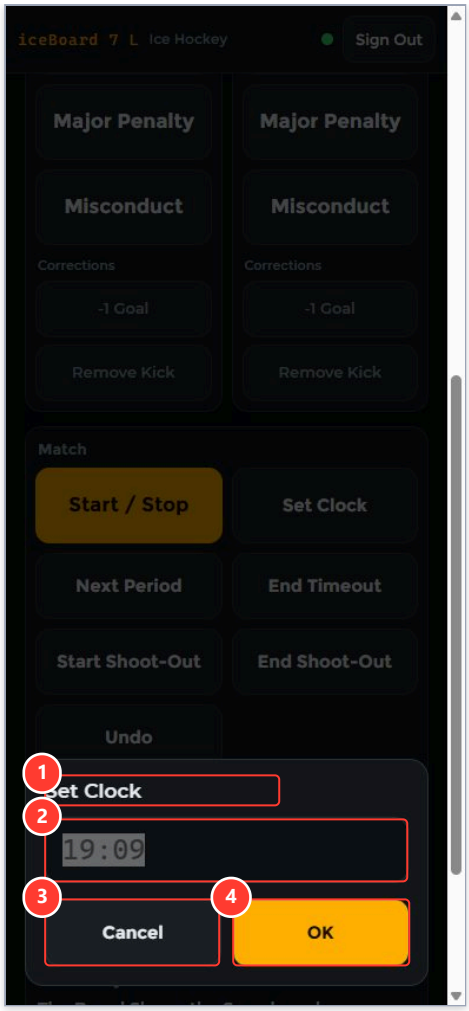


Figure 78. An input sheet (Set Clock) on a phone

#	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`).

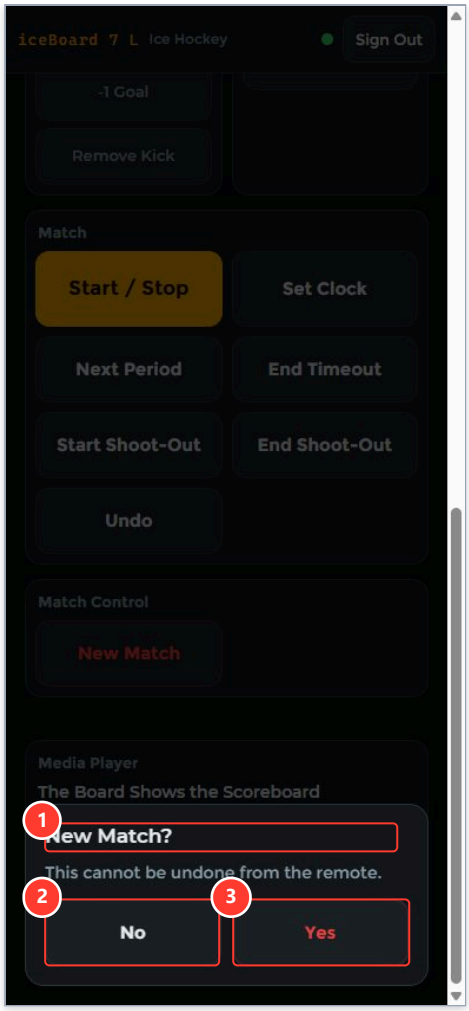


Figure 79. The confirm sheet of a Match Control action on a phone

#	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).

15 Data Exchange

iceBoard 7 L 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.

16 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 L, 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. 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 L.
5. On match day just start iceBoard 7 L: 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 L 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 board is open (it opens again by itself at its place) 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 on the Outputs page or in the gallery.

17 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

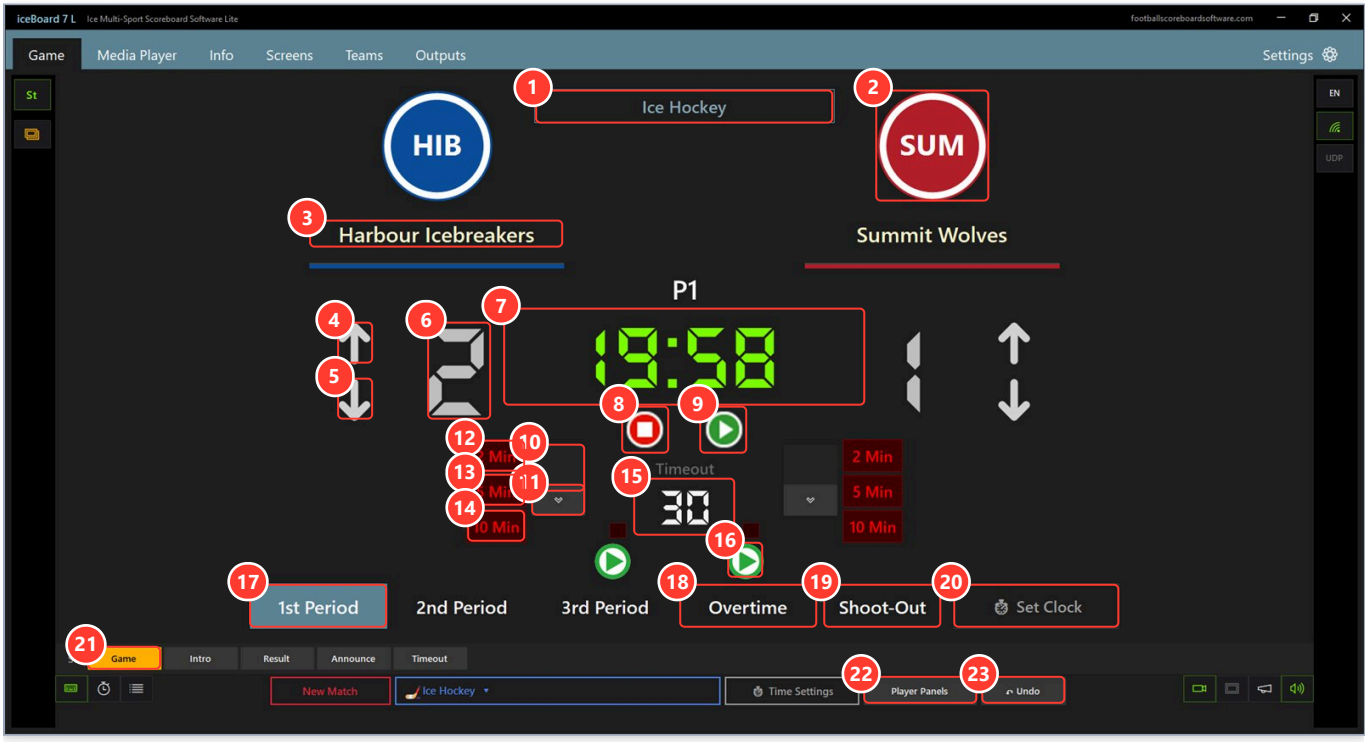


Figure 80. The ice hockey Game panel (the para ice hockey panel is the same with 15-minute periods).

#	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	**Player Panels**	Shows or hides the team lists with each player's goals and penalty minutes on the St board.
23	**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

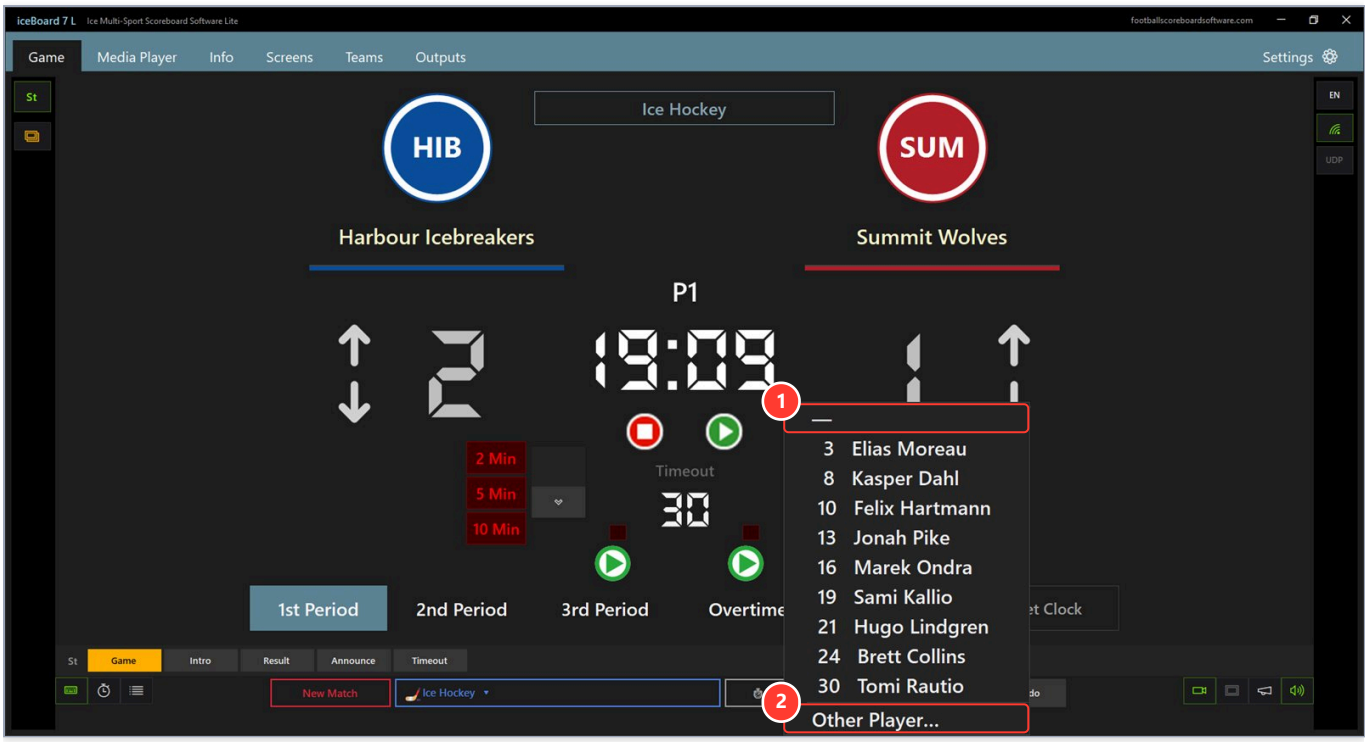


Figure 81. The player list (▾) under the home number box (hockey).

#	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.

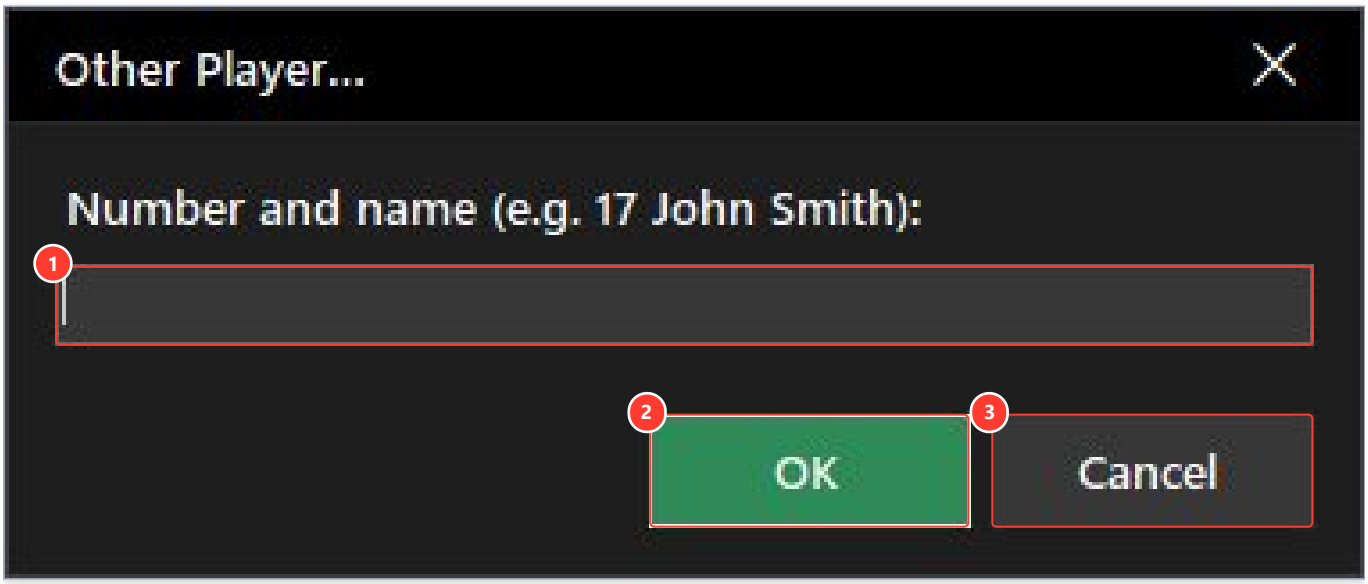


Figure 82. Other Player... asks for the number and the name of a player who is not in the list (hockey).

#	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.

#	Control	What it does
3	**Cancel**	Closes the dialog without a change.

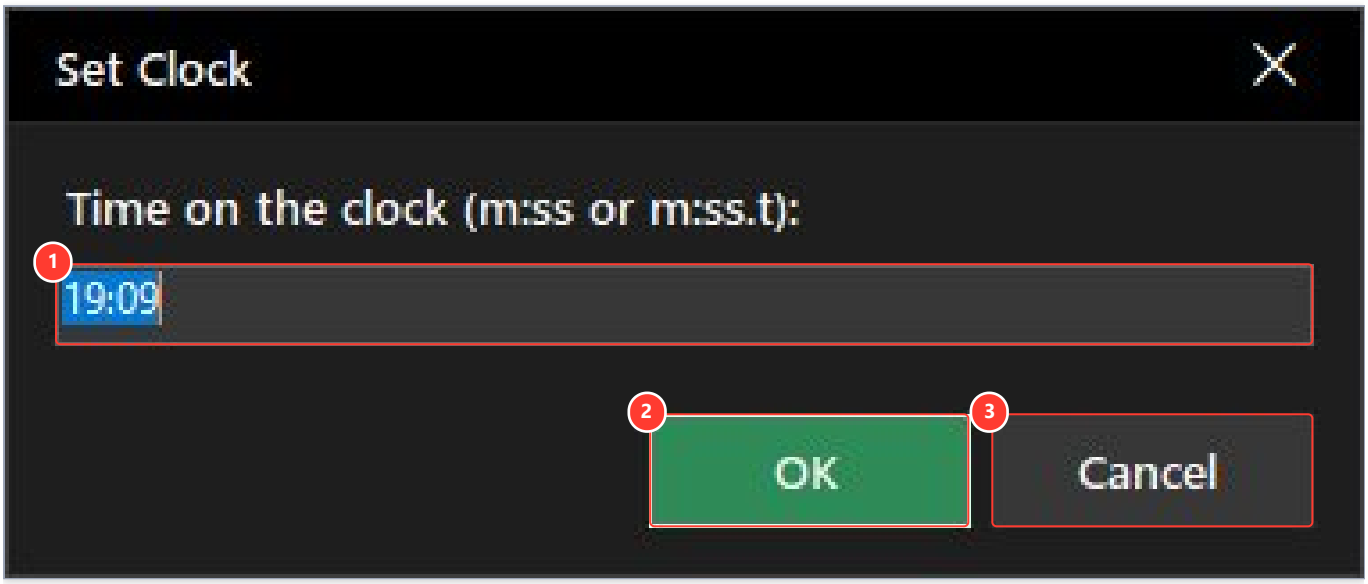


Figure 83. Set Clock: type the time the clock shall show.

#	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.

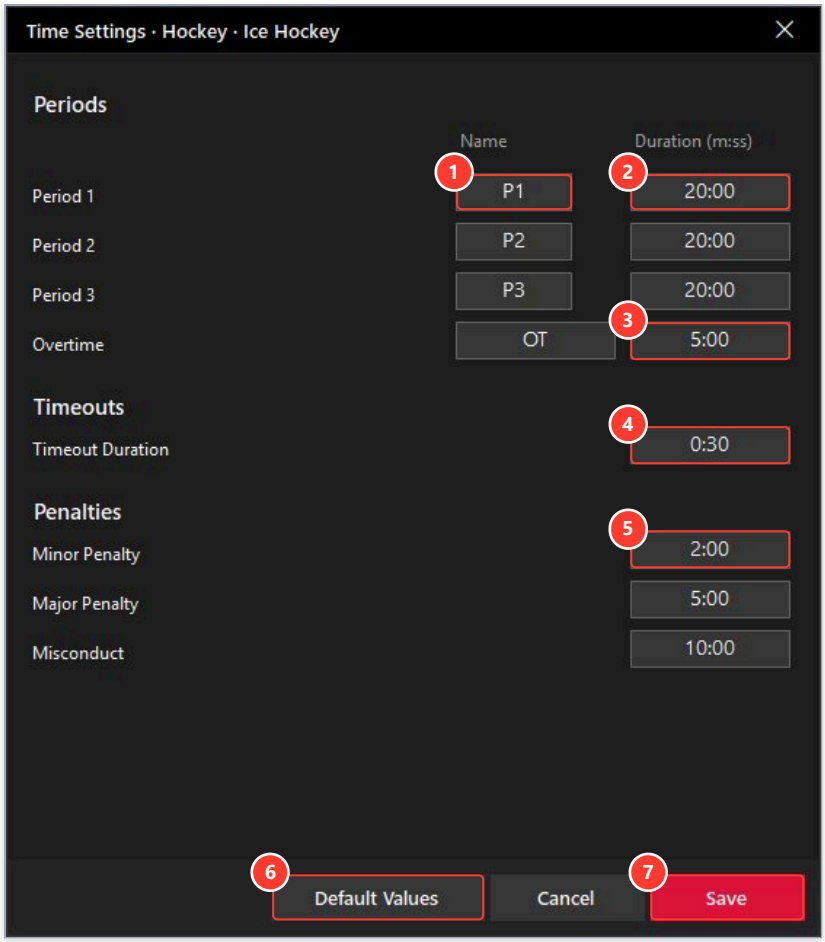


Figure 84. Time Settings for ice hockey.

#	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).

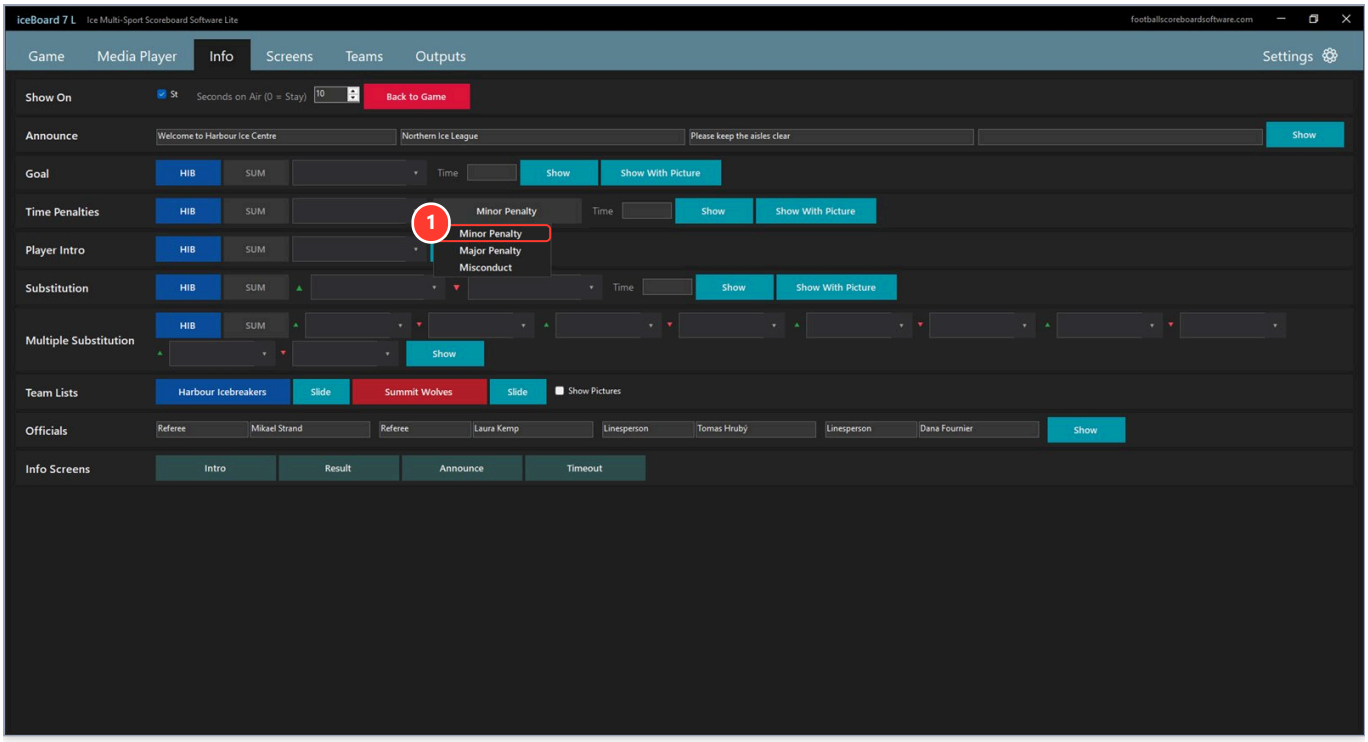


Figure 85. The choice list of the Cards / Penalties row (hockey): the penalty types of the discipline.

#	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.

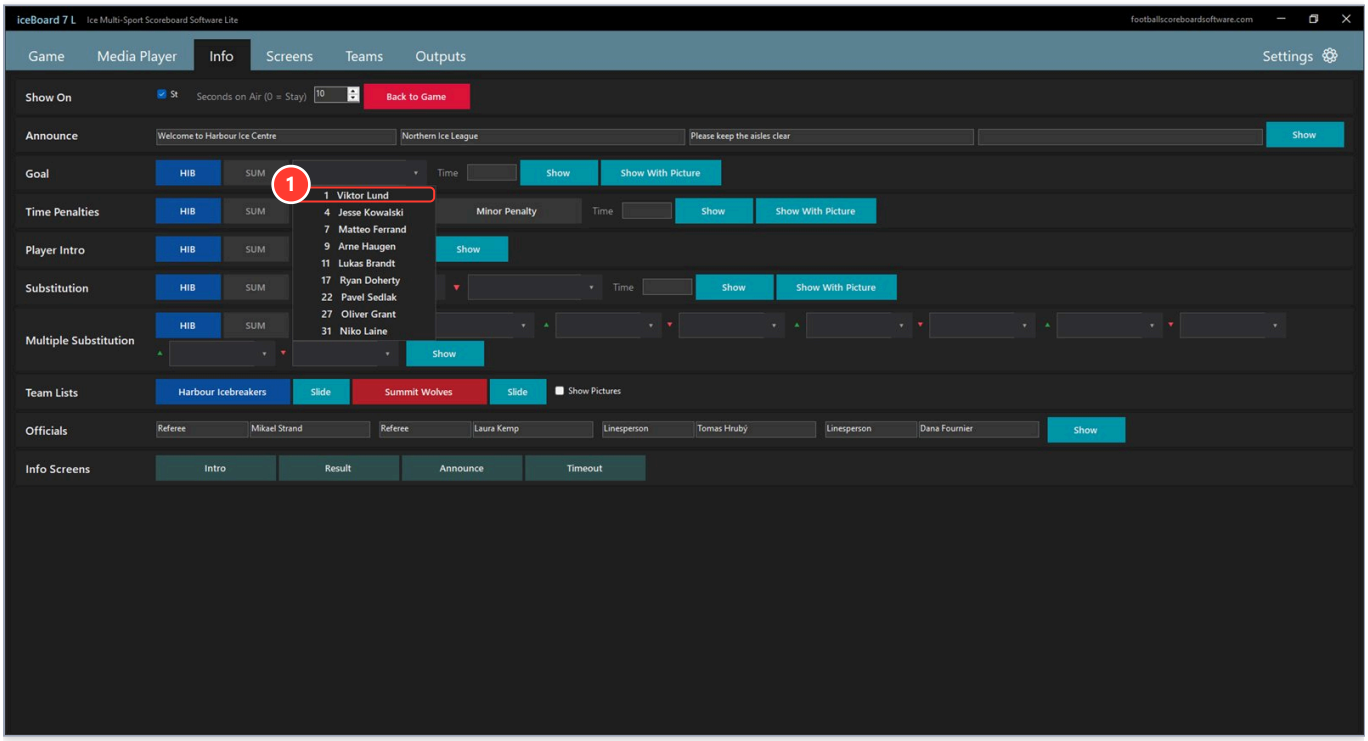


Figure 86. The player list (▾) of an Info page row: the team list with numbers.

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

Hockey Outputs

The Game Screens

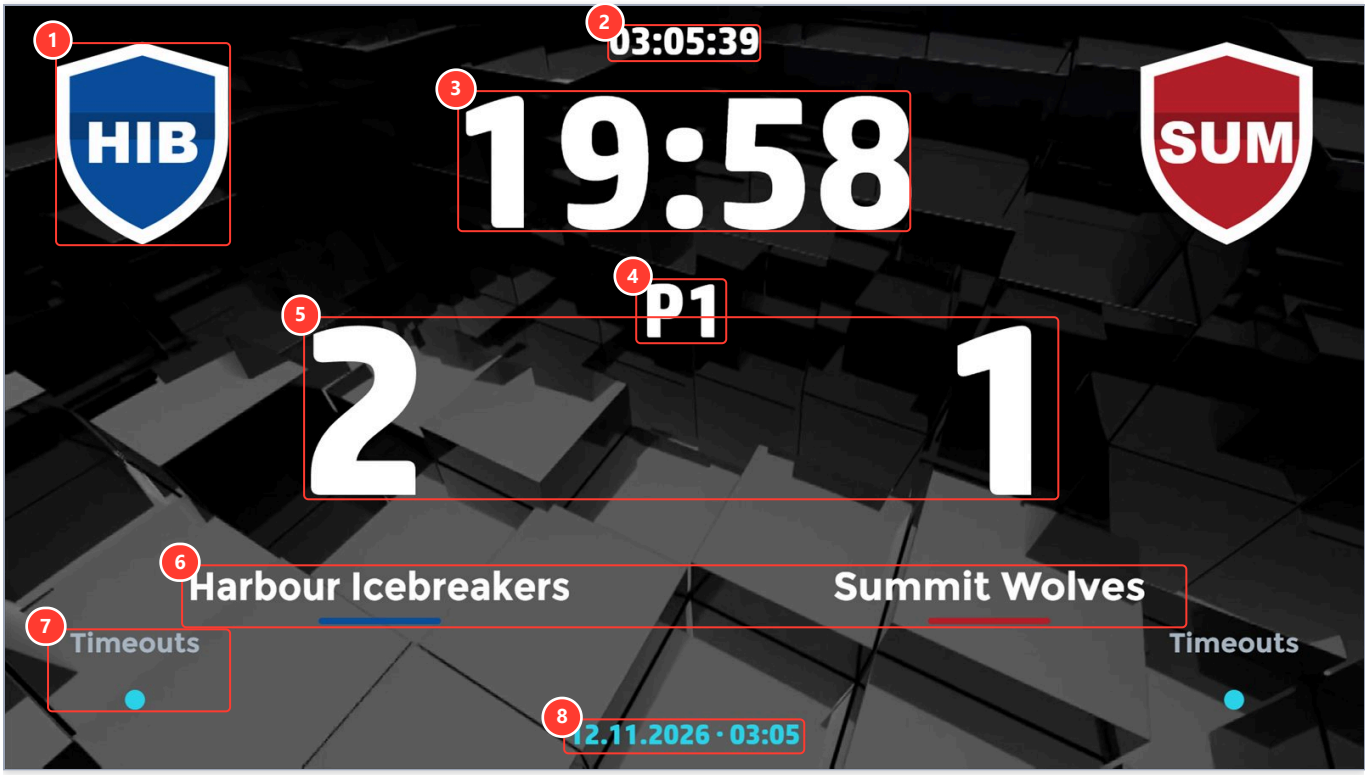


Figure 87. The hockey St board (Arena design).

#	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.

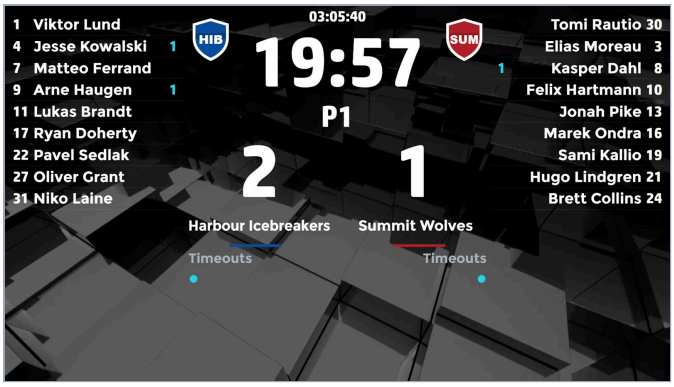


Figure 88. St with Player Panels on: both team lists with goals and penalty minutes. Player Panels in the bottom bar.

Info Screens and Broadcast Graphics

The St info screens replace the scoreboard. 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 89. St Intro: event, teams with logos, venue, date and time. St · Intro before the face-off.

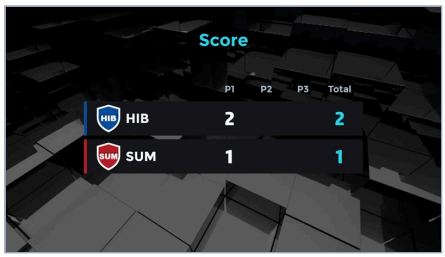


Figure 90. St Result (Score): goals of each period and the total. St · Result at the intermissions and after the game.

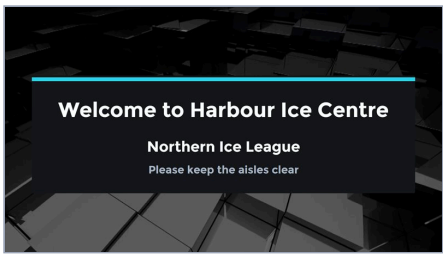


Figure 91. St Announce: title and lines of the announcement. St · Announce or Info ▸ Announce ▸ Show.



Figure 92. St Timeout: the team, its logo and the timeout countdown (30 s in ice hockey, 60 s in para ice hockey). St · Timeout.



Figure 93. St Goal: number, name, photo and team of the scorer with the score. Info ▸ Goal ▸ Show (With Picture).



Figure 94. St Penalty: the penalised player, the penalty and the time. Info ▸ Cards / Penalties ▸ Show.

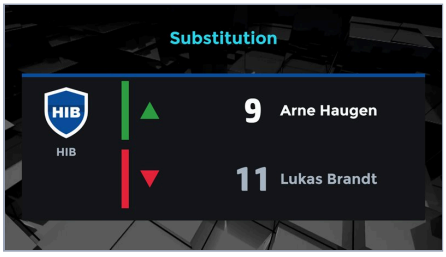


Figure 95. St Substitution: player in (▲) and player out (▼). Info ▸ Substitution ▸ Show.

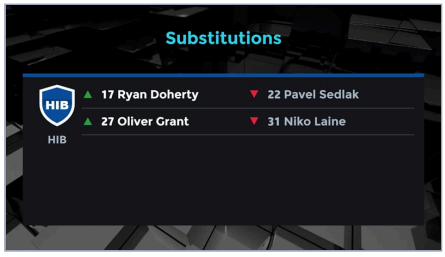


Figure 96. St Substitutions: up to five in / out pairs of one team (line changes). Info ▸ Multiple Substitution ▸ Show.



Figure 97. St Player Intro: one player with number, name and photo. Info ▸ Player Intro ▸ Show.

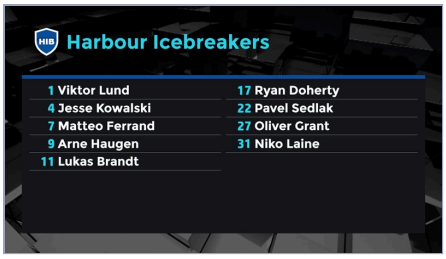


Figure 98. St Team List: the whole team list with the coach. Info ▸ Team Lists ▸ team button.



Figure 99. St Officials: referees and linespersons. 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.

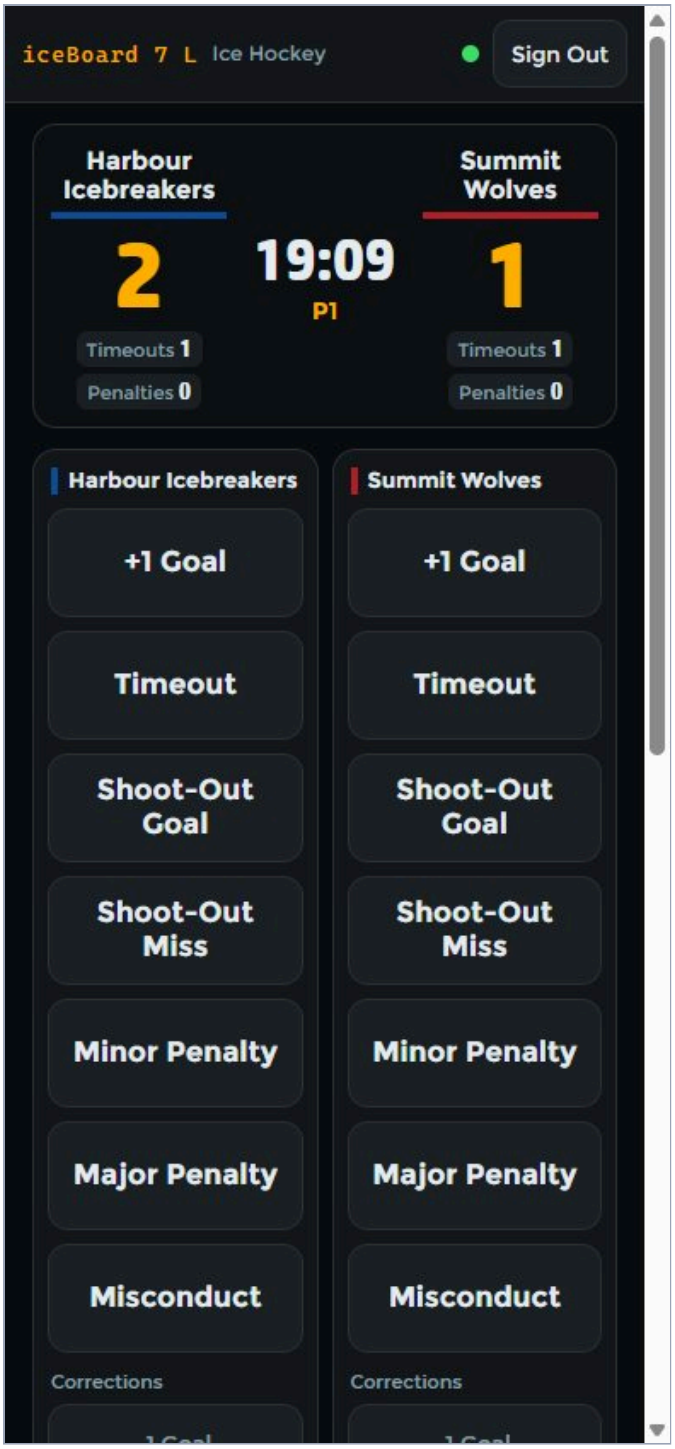


Figure 100. Phone: scores, clock and period, both team blocks.

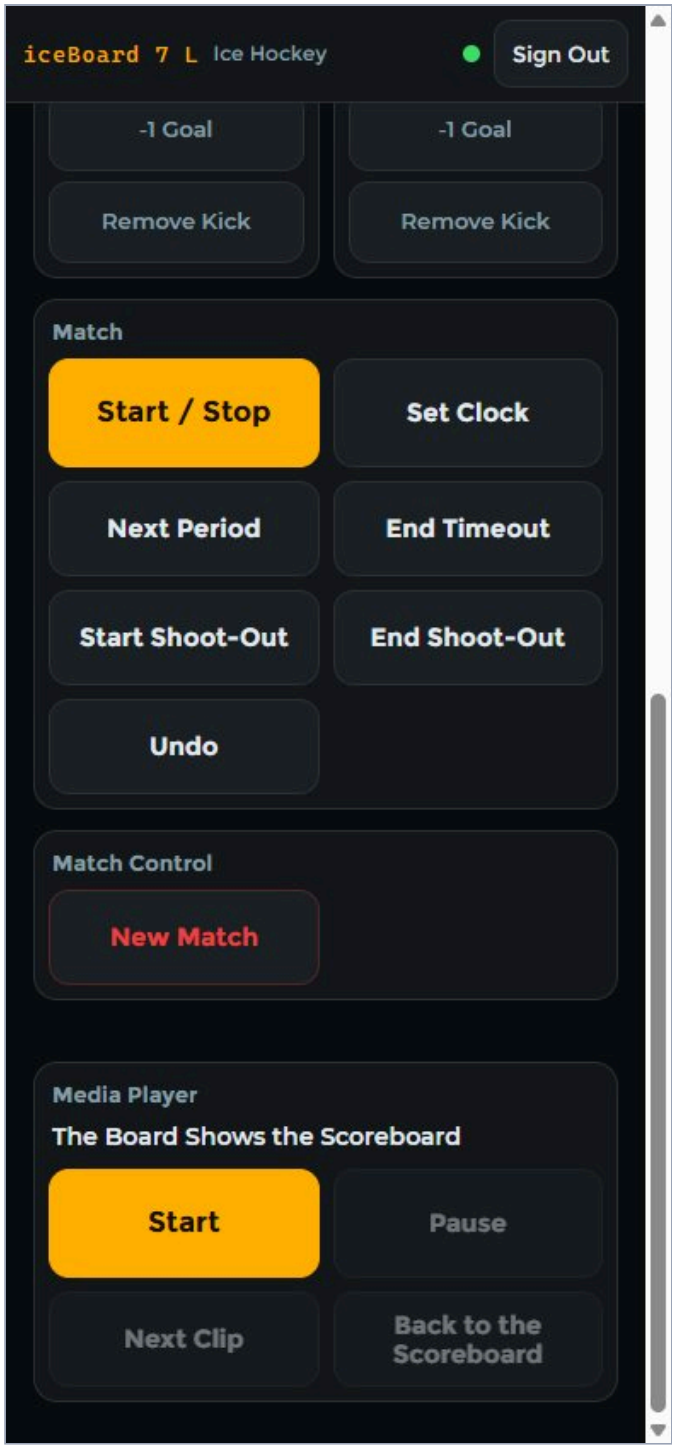


Figure 101. Phone, scrolled down: Corrections, Match and Match Control.

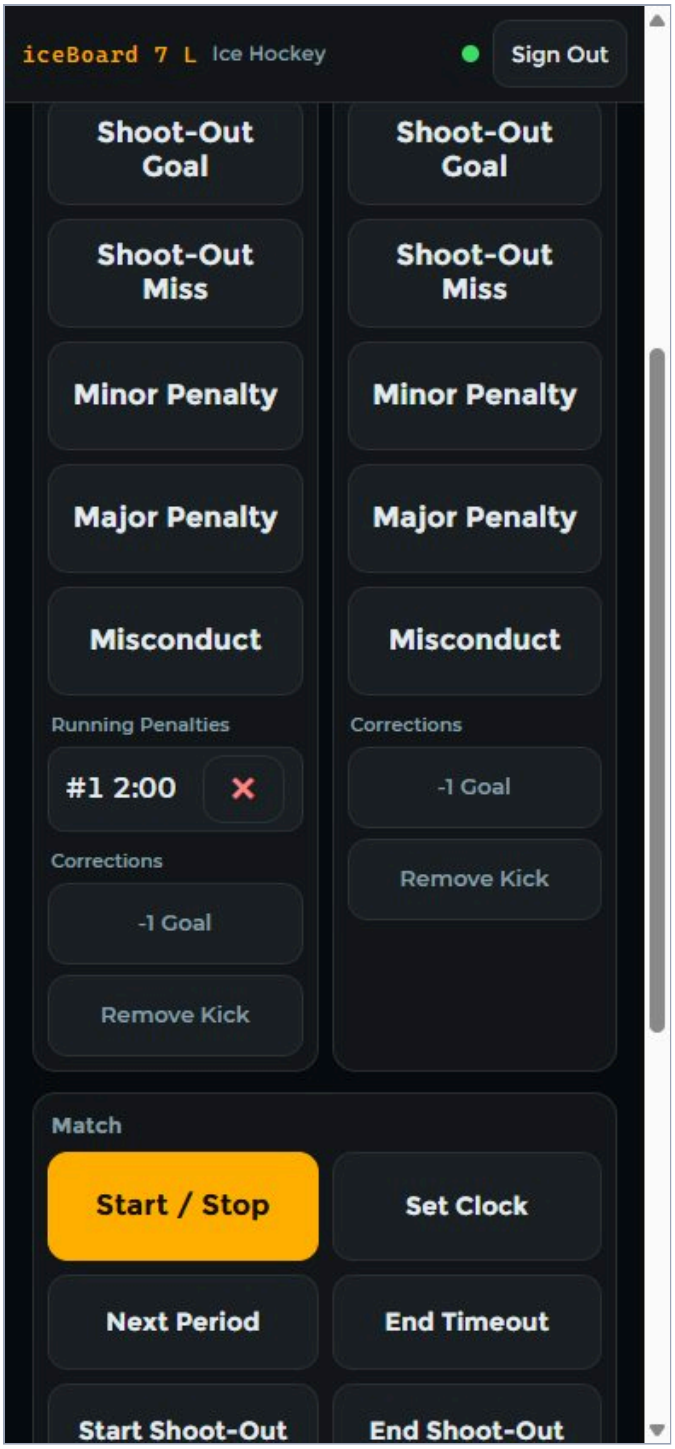


Figure 102. Phone: the running penalties under the team blocks, each with ✕ to remove it.

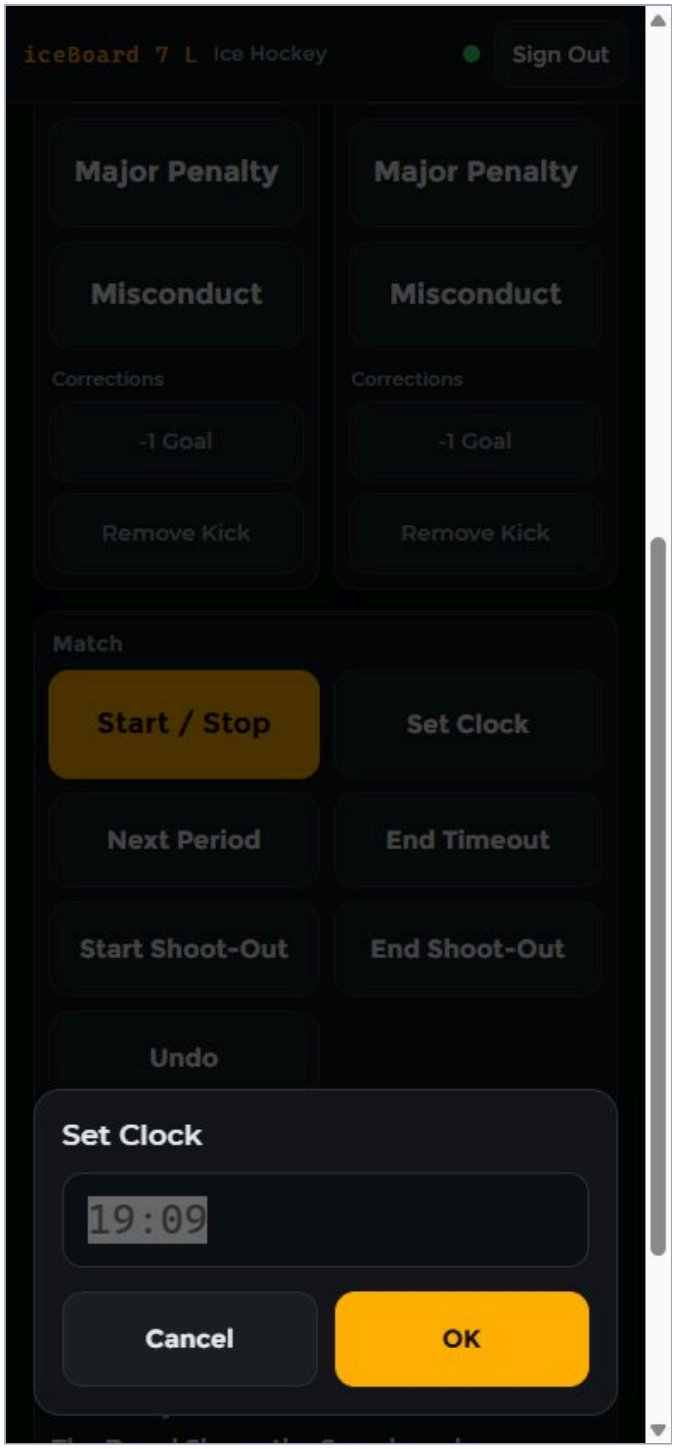


Figure 103. Phone: the Set Clock sheet.

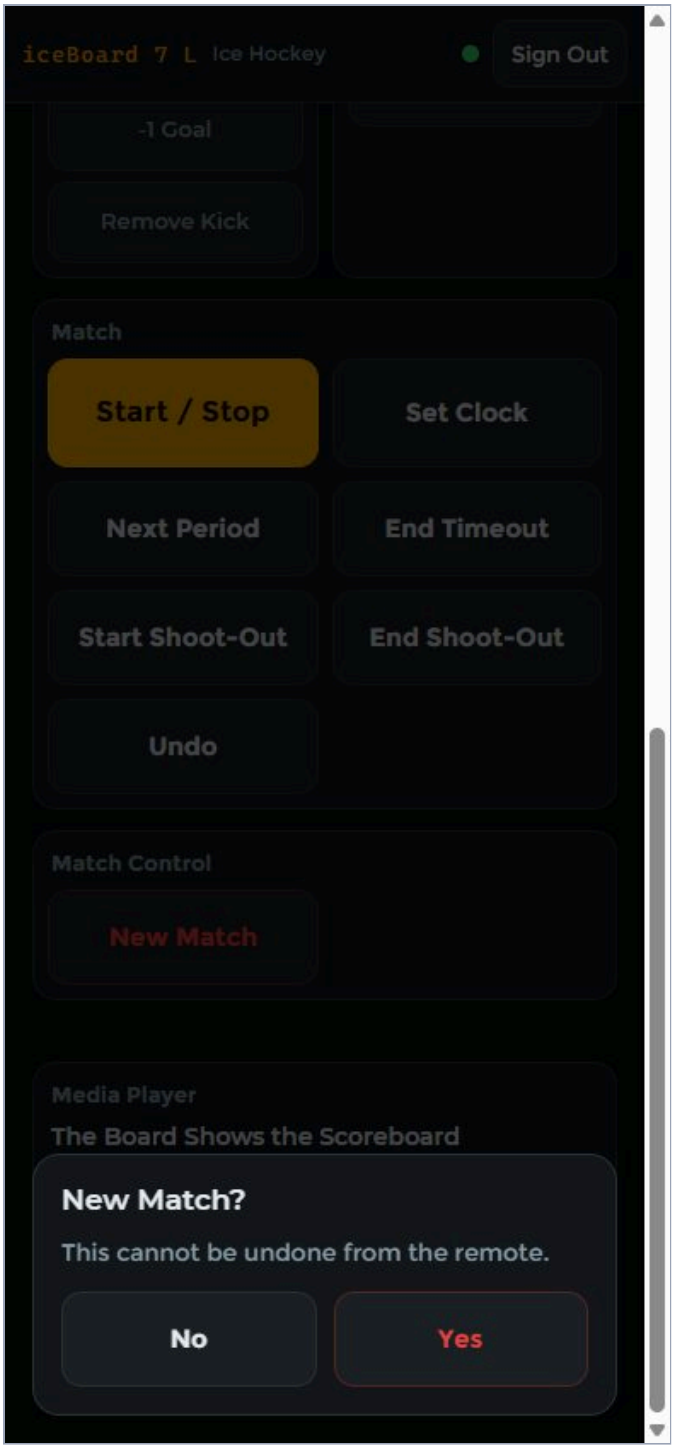


Figure 104. Phone: the confirmation sheet of New Match.

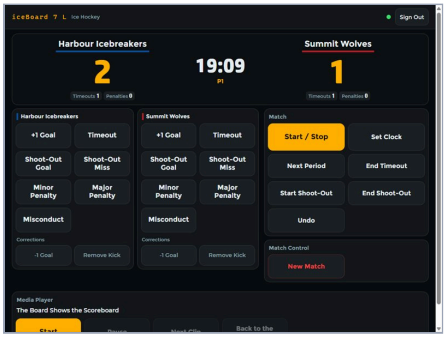


Figure 105. Tablet: the same blocks side by side.

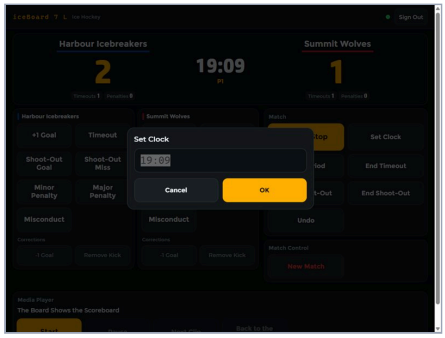


Figure 106. Tablet: the Set Clock sheet.

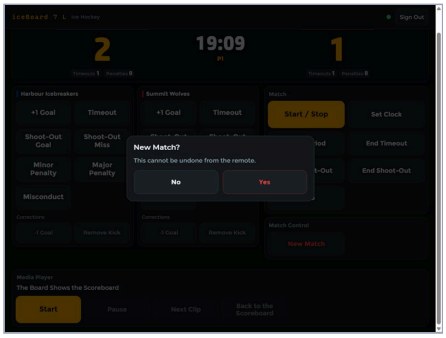


Figure 107. Tablet: the confirmation sheet.

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.
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.

18 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 L 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

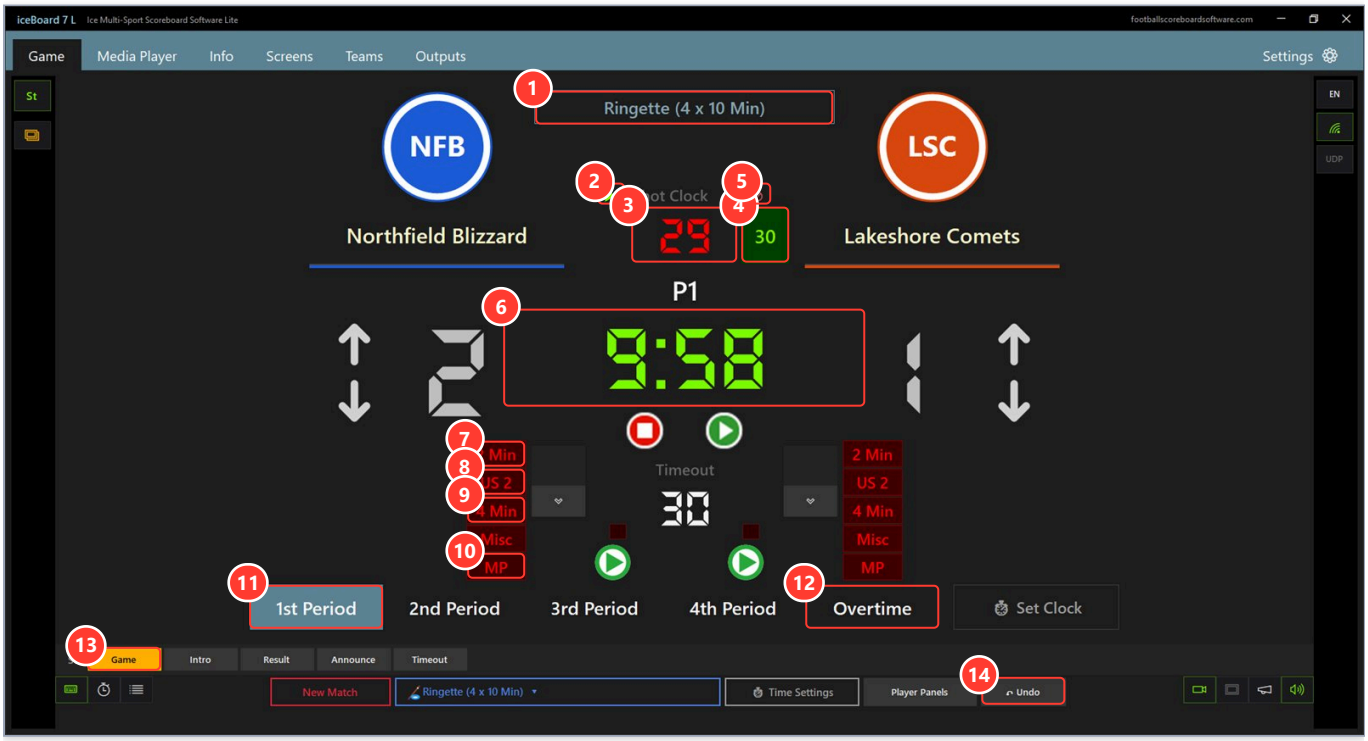


Figure 108. The ringette Game panel with the 30-second shot clock.

#	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	**Undo**	Takes back the last change (`F12`).

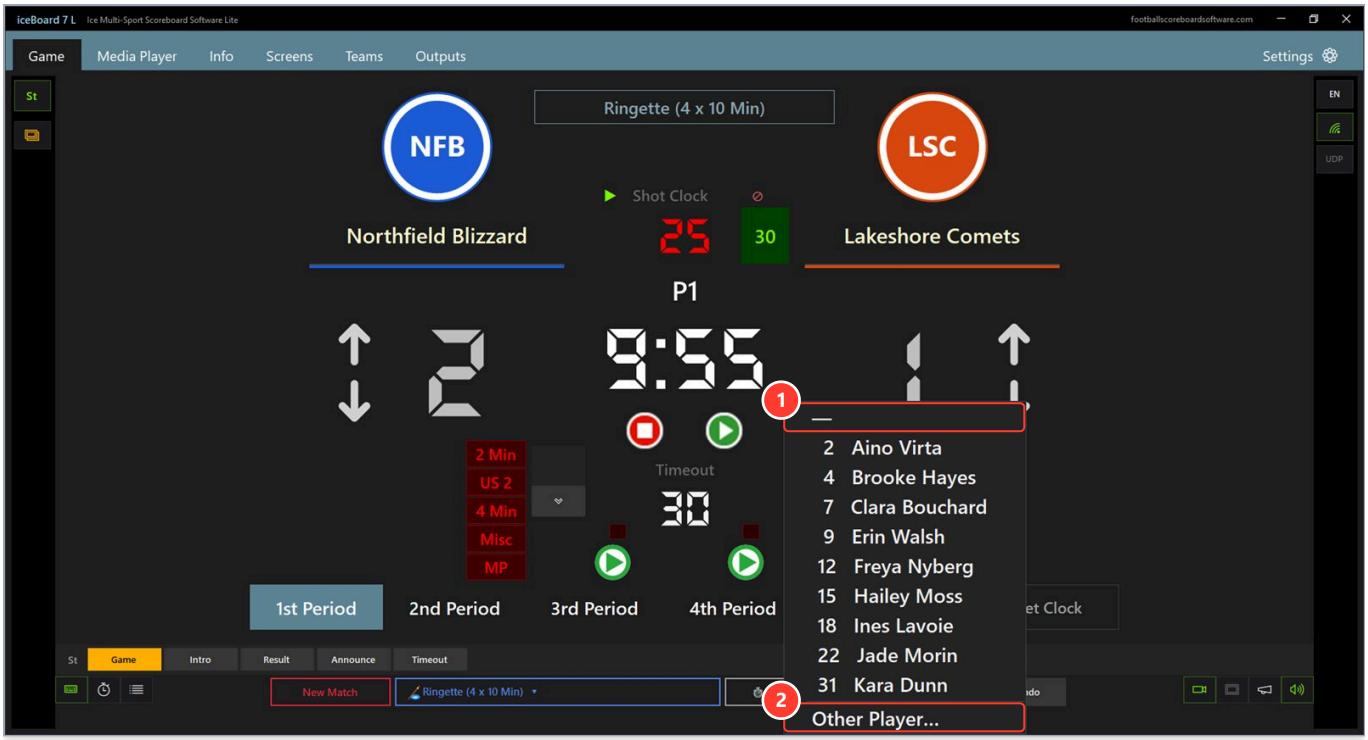


Figure 109. The player list (▾) under the home number box (ringette).

#	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.

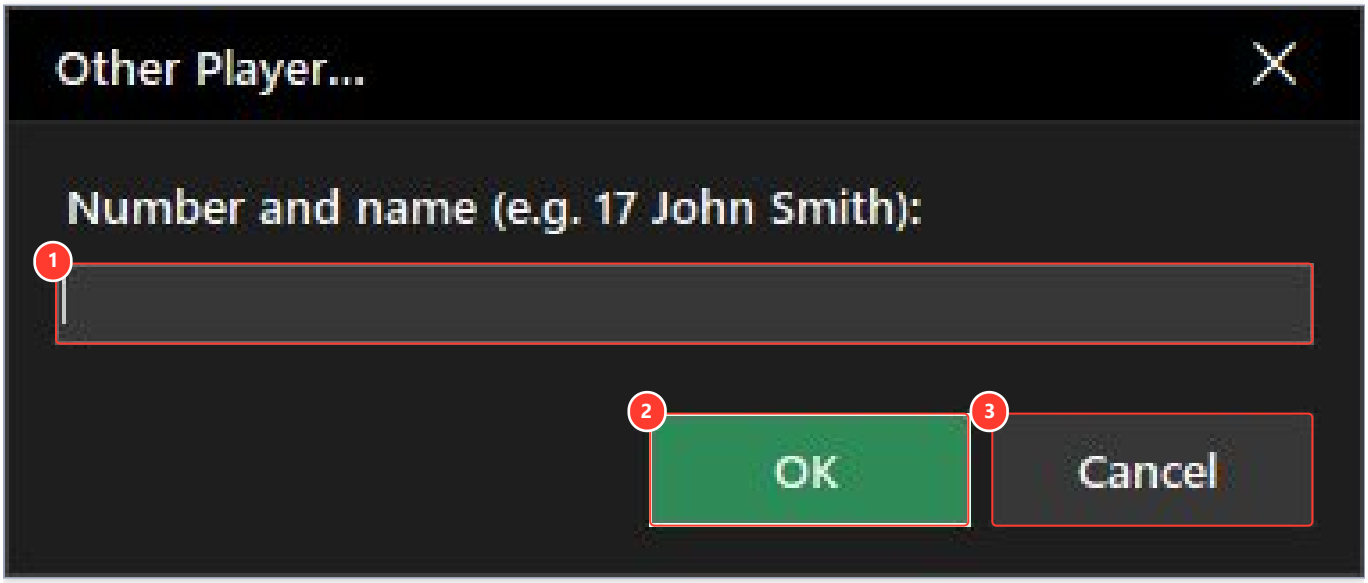


Figure 110. Other Player... asks for the number and the name of a player who is not in the list (ringette).

#	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.

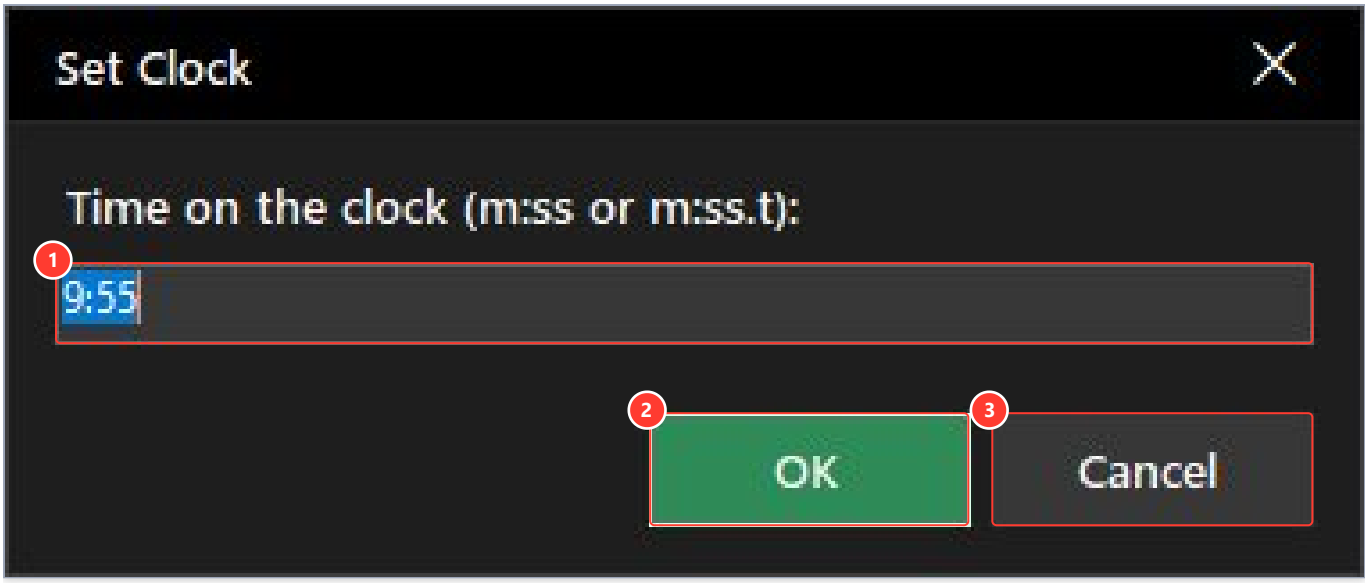


Figure 111. Set Clock: type the time the clock shall show.

#	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

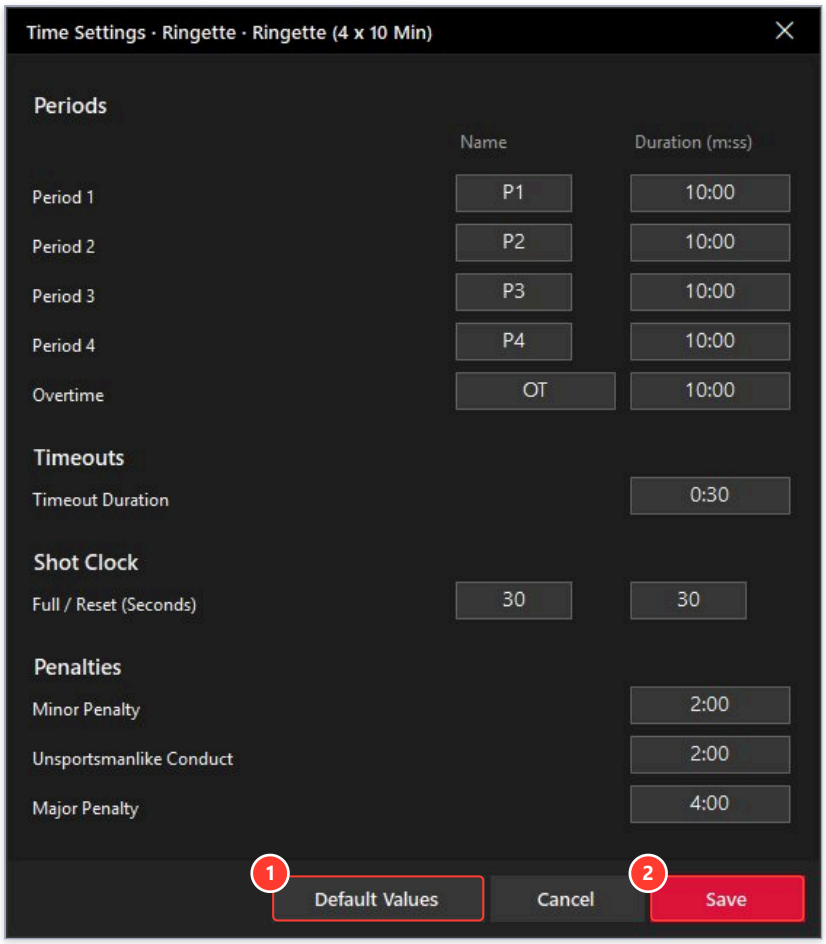


Figure 112. Time Settings for ringette.

#	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.

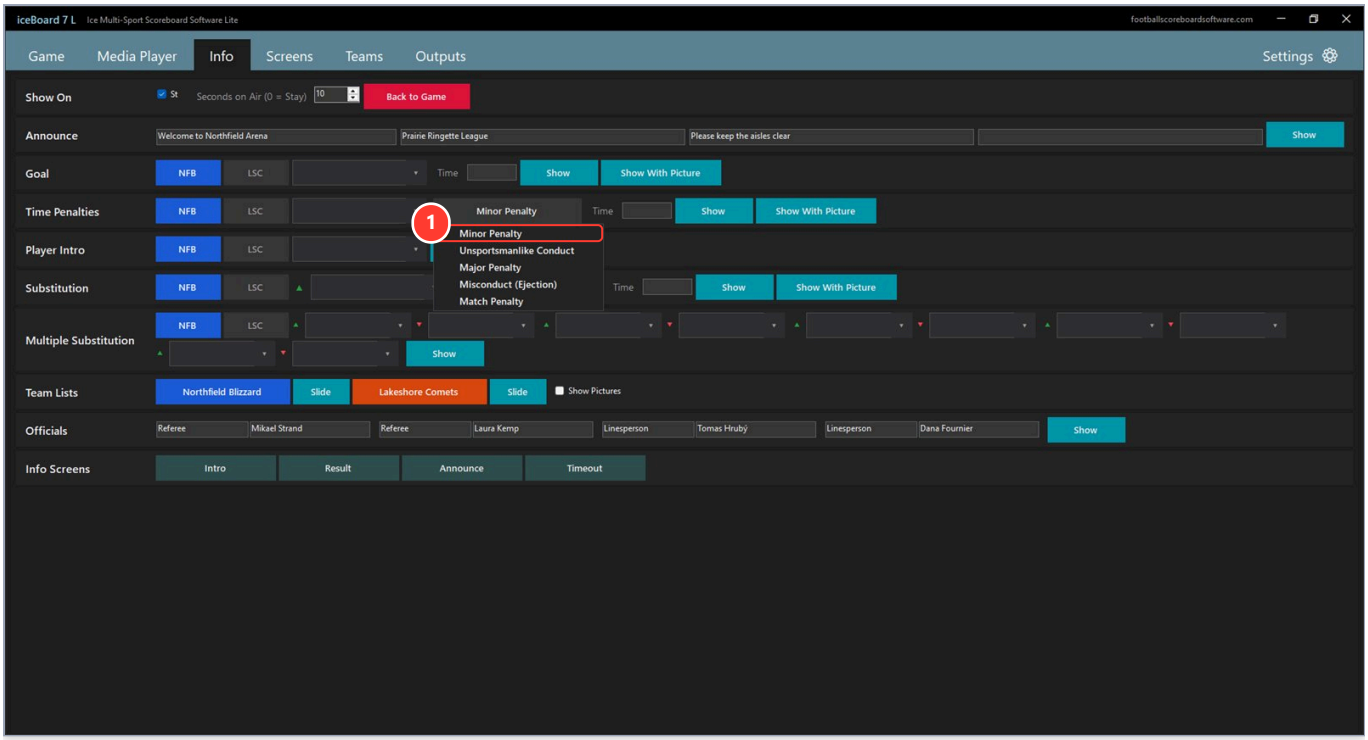


Figure 113. The penalty types in the choice list of the Info page (ringette).

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

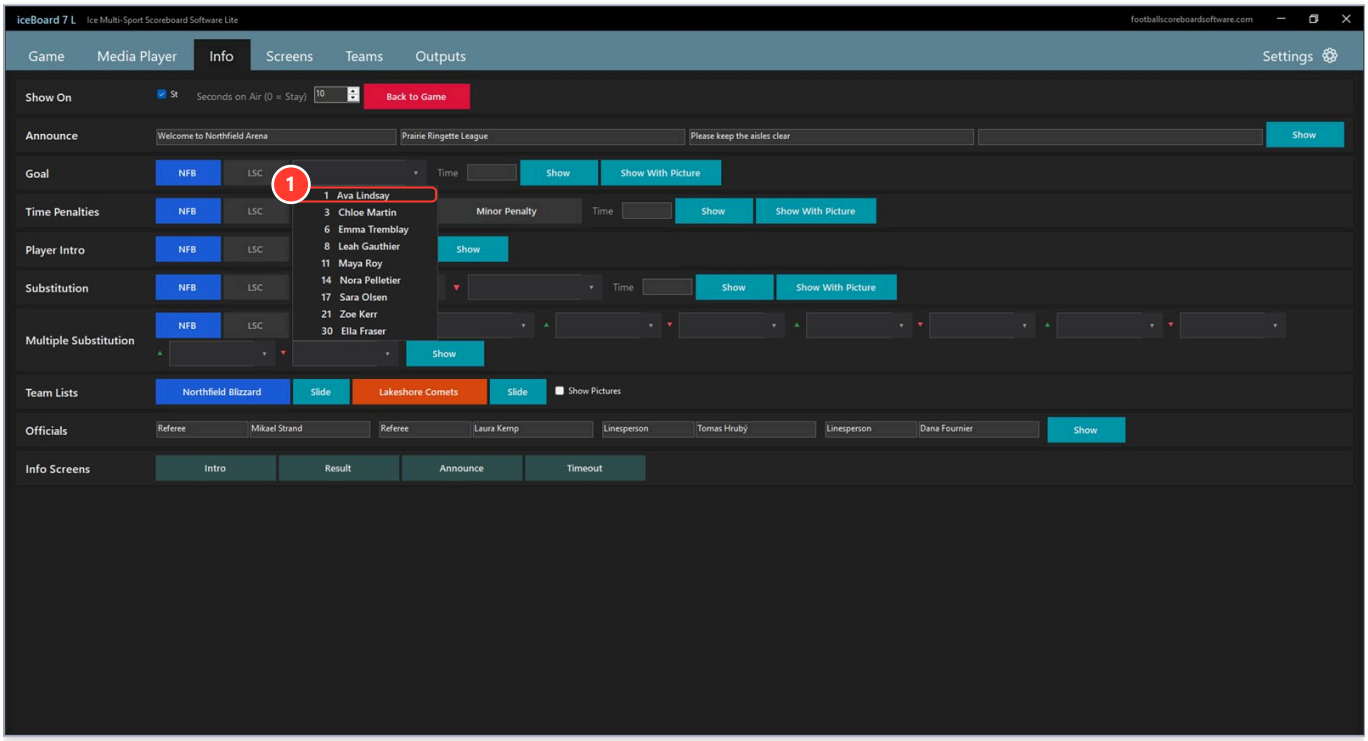


Figure 114. The player list of an Info page row (ringette).

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

Ringette Outputs

The Game Screens

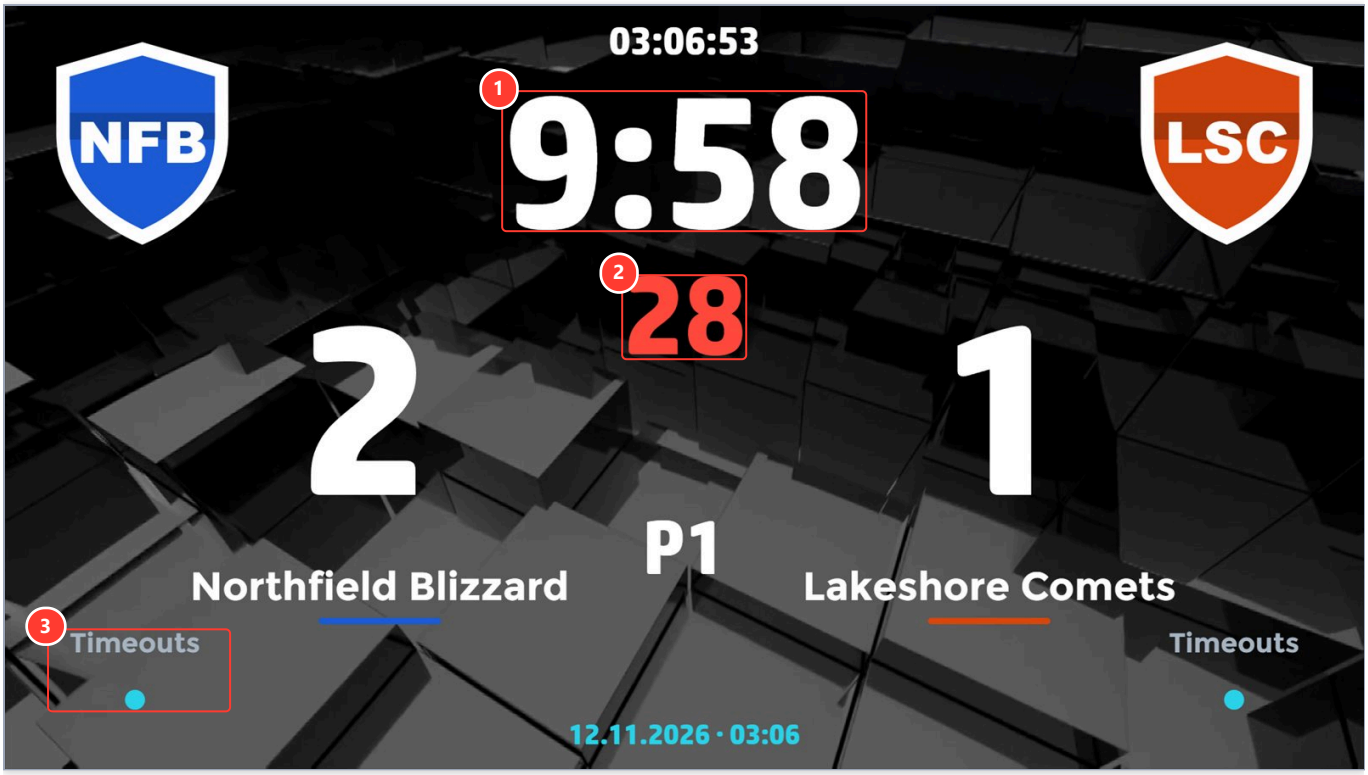


Figure 115. The ringette St board with the shot clock (red) under the game clock.

#	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.

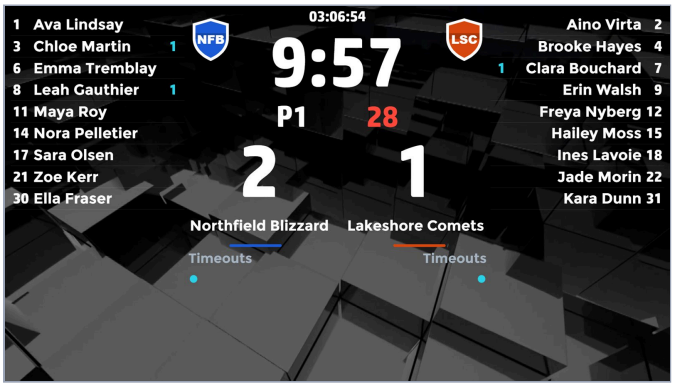


Figure 116. St with Player Panels on.

Info Screens and Broadcast Graphics

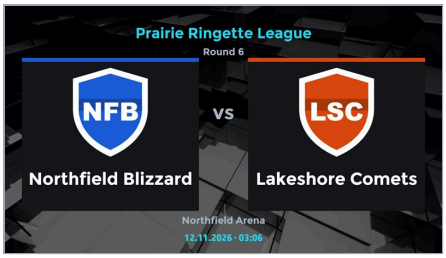


Figure 117. St Intro: event, teams with logos, venue, date and time. St · Intro before the face-off.

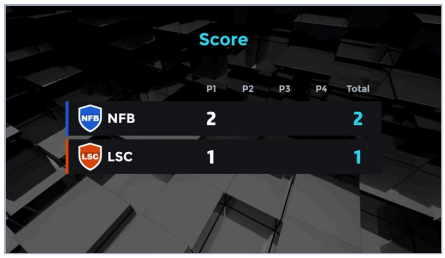


Figure 118. St Result (Score): goals of each period and the total. St · Result at the intermissions and after the game.

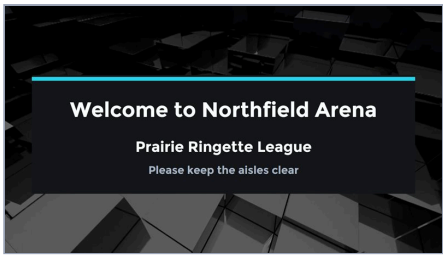


Figure 119. St Announce: title and lines of the announcement. St · Announce or Info ▸ Announce ▸ Show.

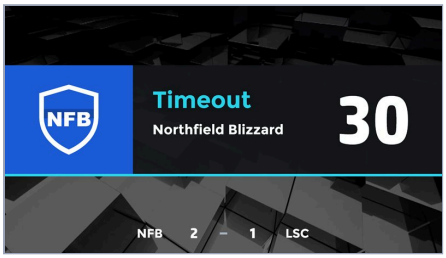


Figure 120. St Timeout: the team, its logo and the timeout countdown. St · Timeout.



Figure 121. St Goal: number, name, photo and team of the scorer with the score. Info ▸ Goal ▸ Show (With Picture).

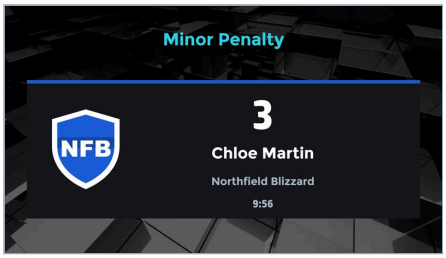


Figure 122. St Penalty: the penalised player, the penalty and the time. Info ▸ Cards / Penalties ▸ Show.

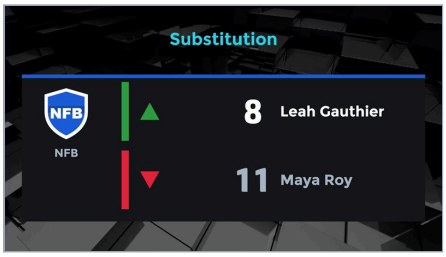


Figure 123. St Substitution: player in (▲) and player out (▼). Info ▸ Substitution ▸ Show.

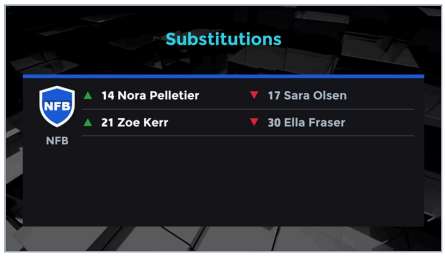


Figure 124. St Substitutions: up to five in / out pairs of one team (line changes). Info ▸ Multiple Substitution ▸ Show.



Figure 125. St Player Intro: one player with number, name and photo. Info ▸ Player Intro ▸ Show.

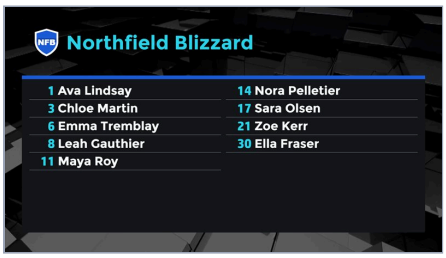


Figure 126. St Team List: the whole team list with the coach. Info ▸ Team Lists ▸ team button.



Figure 127. St Officials: referees and linespersons. 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.

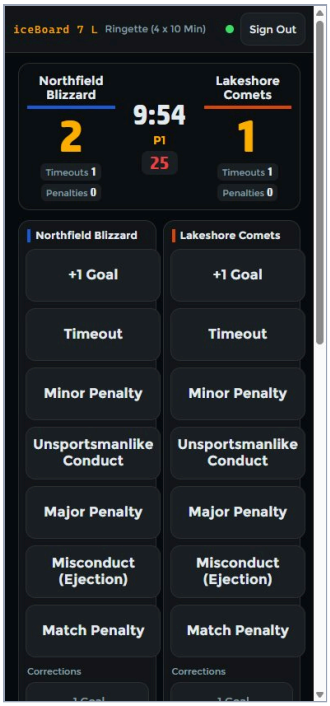


Figure 128. Phone: scores, clock and period, both team blocks.

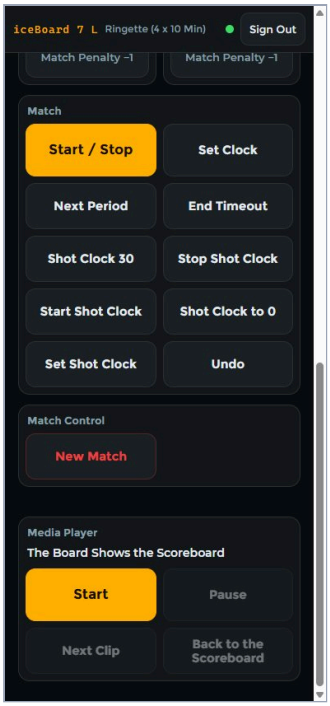


Figure 129. Phone, scrolled down: Corrections, Match and Match Control.

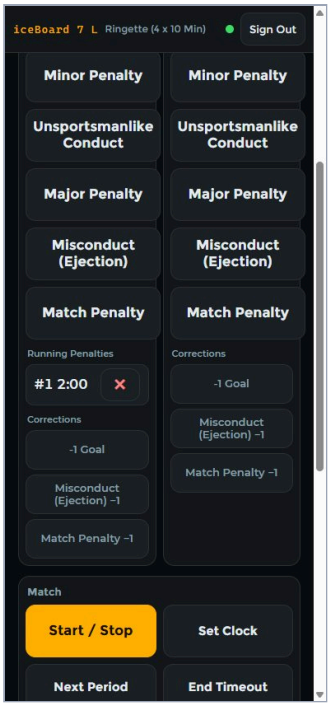


Figure 130. Phone: the running penalties under the team blocks, each with ✕ to remove it.

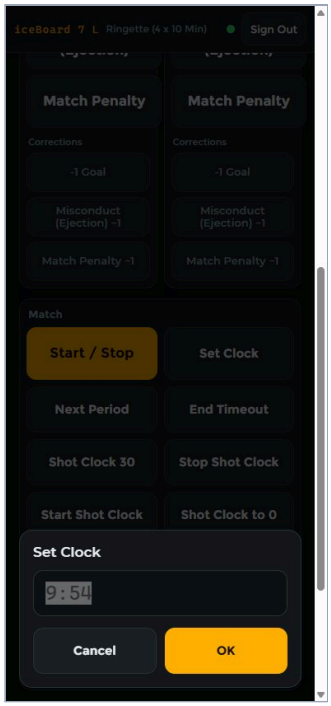


Figure 131. Phone: the Set Clock sheet.

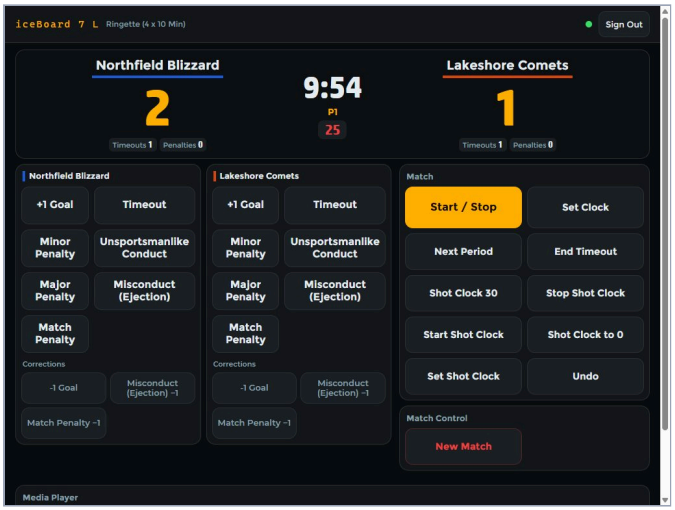


Figure 132. Tablet: the same blocks side by side.

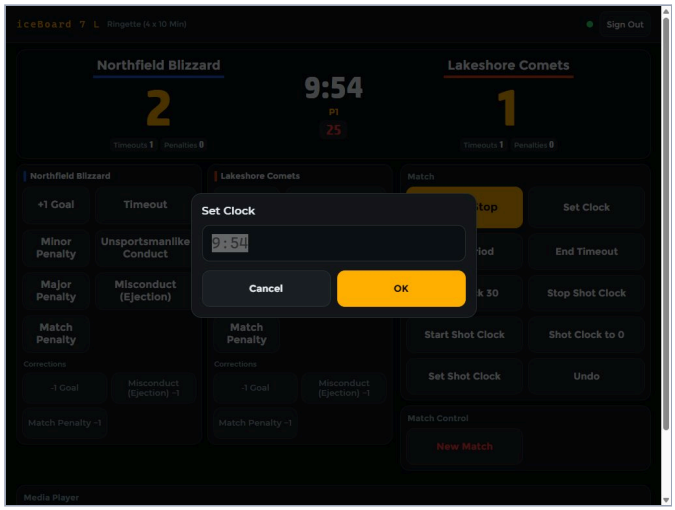


Figure 133. Tablet: the Set Clock sheet.

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.

Remote button	Where	What it does
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**.

19 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

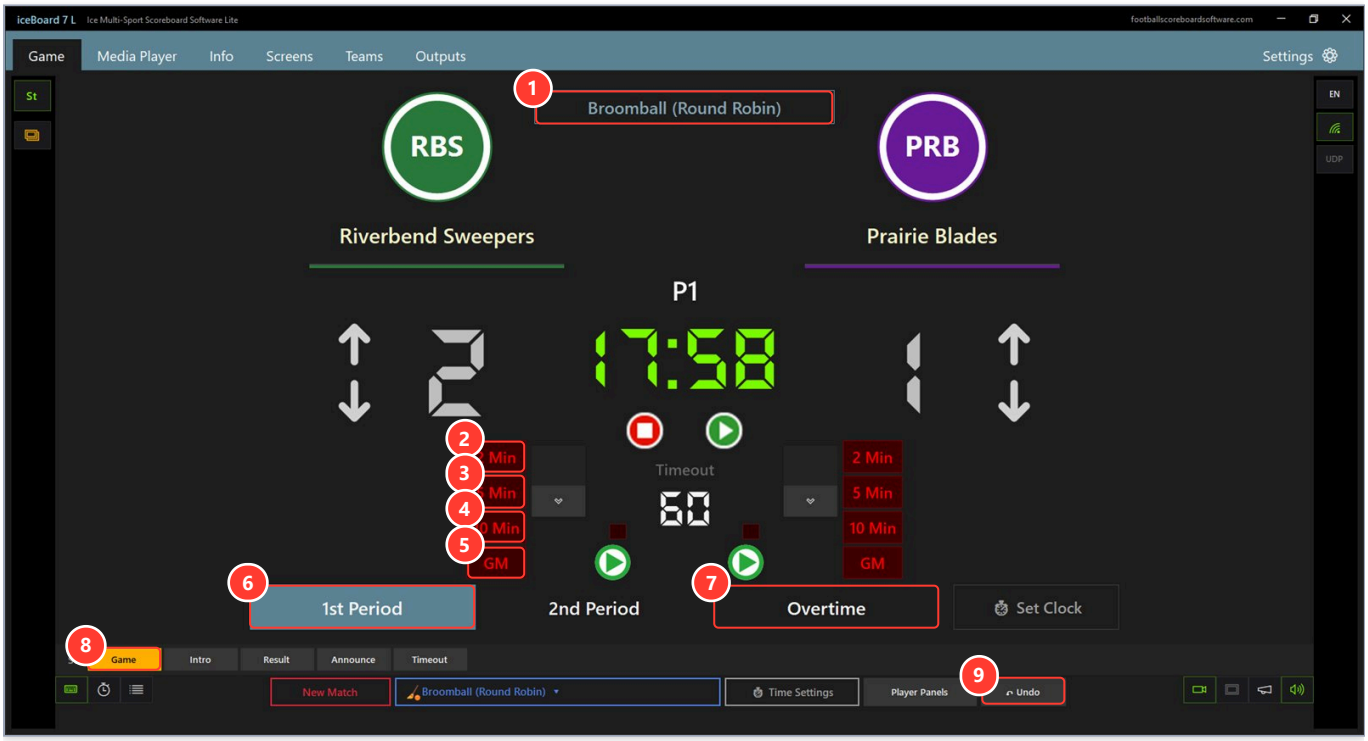


Figure 134. The broomball Game panel.

#	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	**Undo**	Takes back the last change (`F12`).

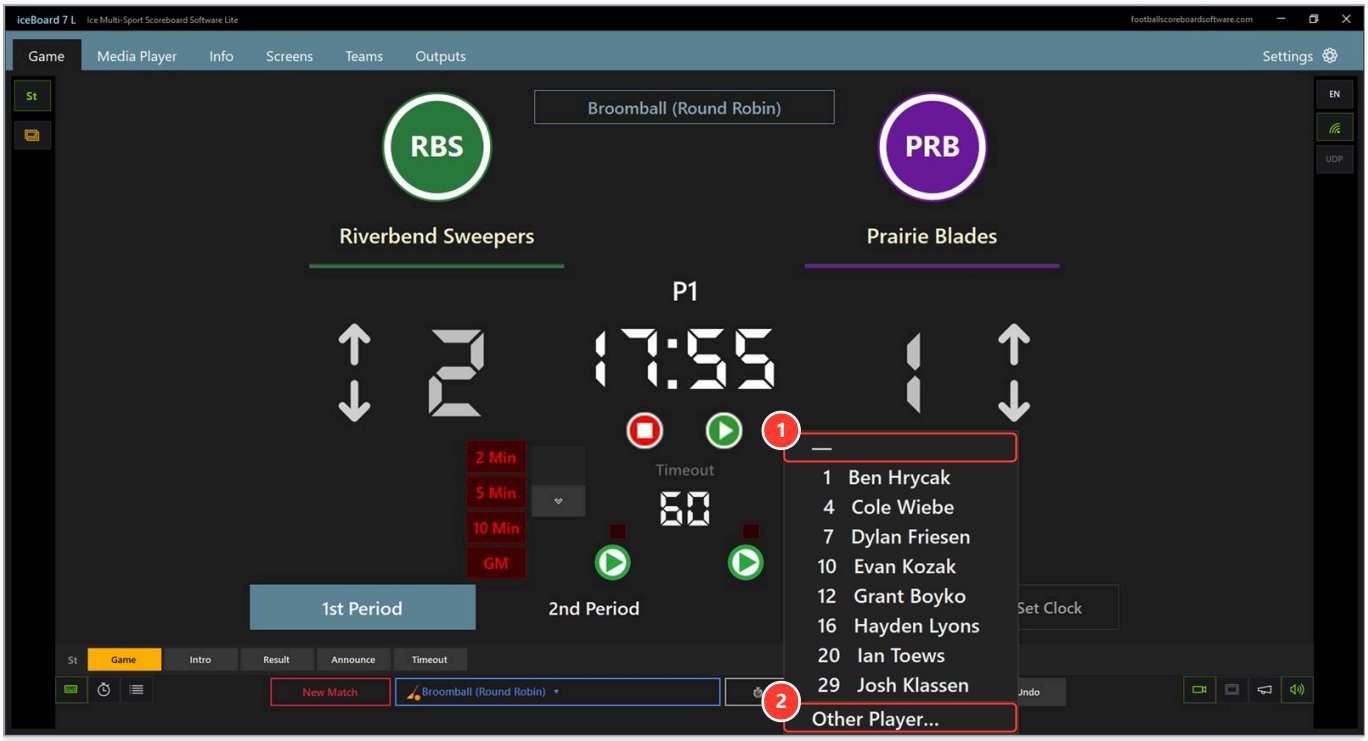


Figure 135. The player list (▾) under the home number box (broomball).

#	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.

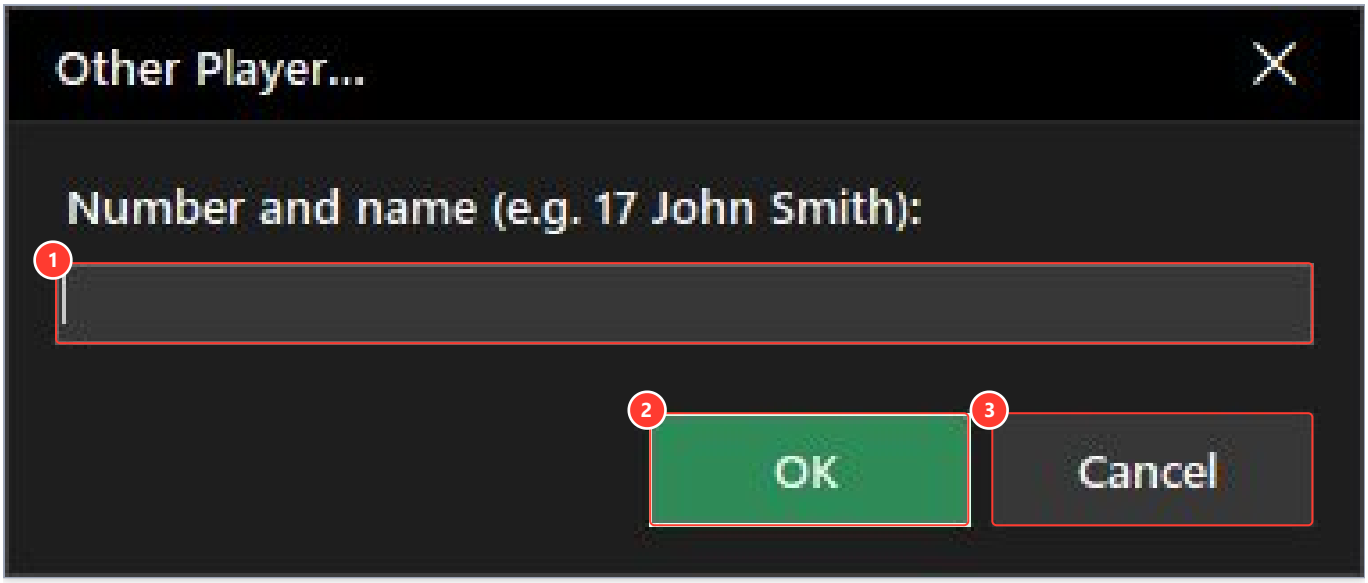


Figure 136. Other Player... asks for the number and the name of a player who is not in the list (broomball).

#	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.

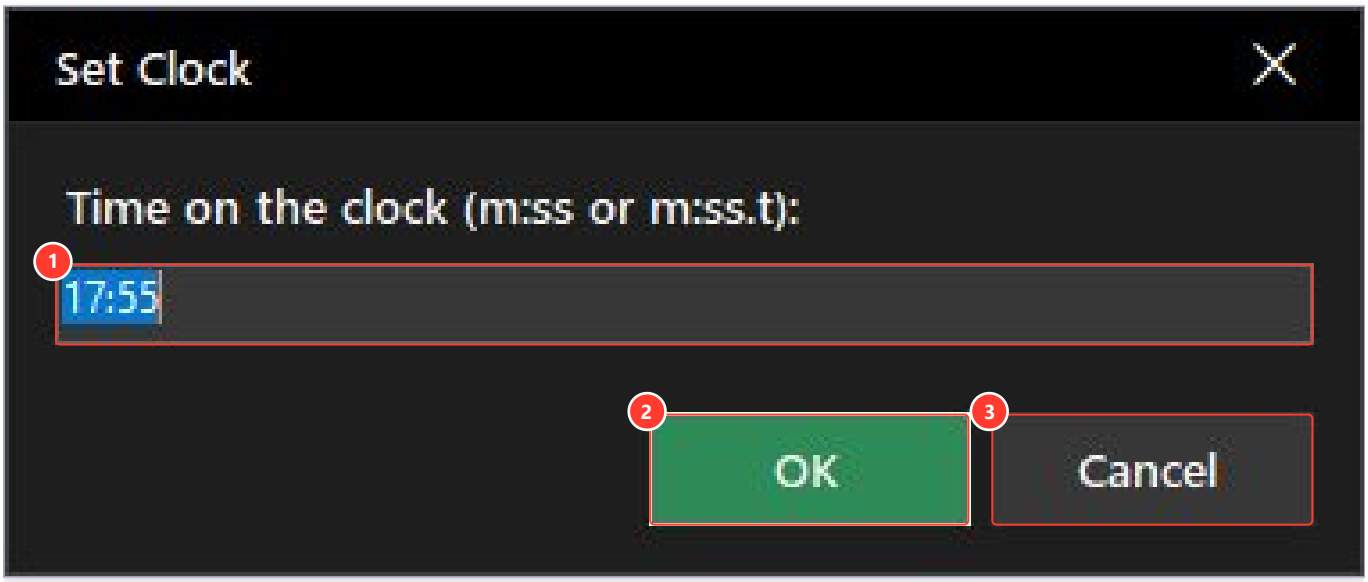


Figure 137. Set Clock: type the time the clock shall show.

#	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

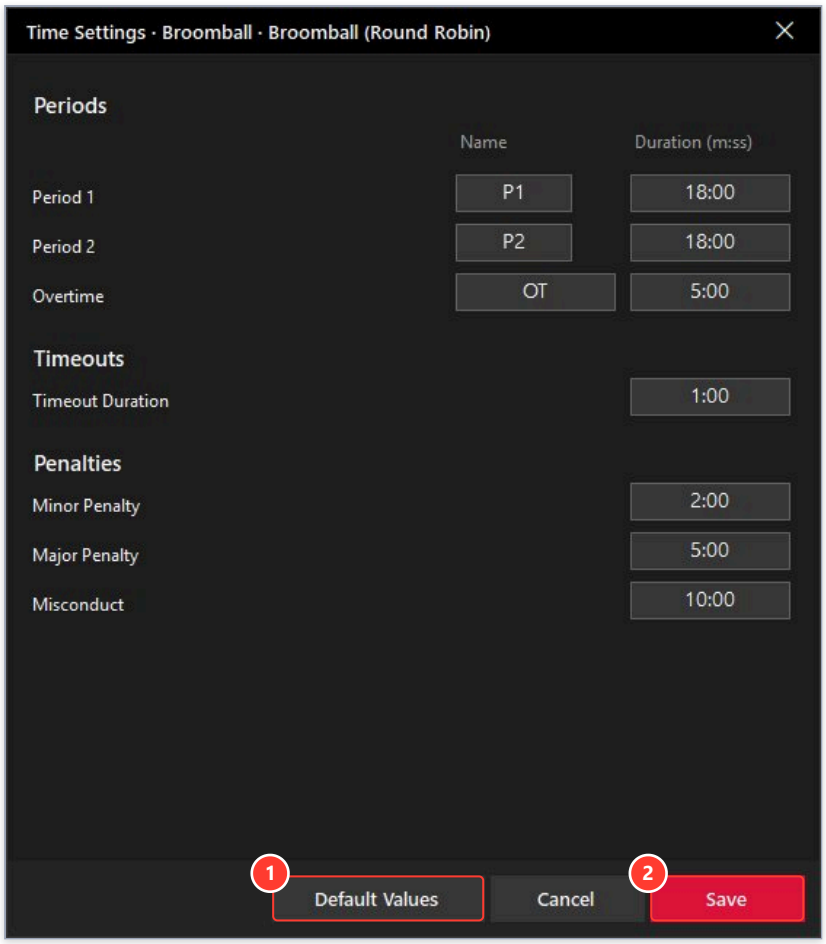


Figure 138. Time Settings for broomball.

#	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

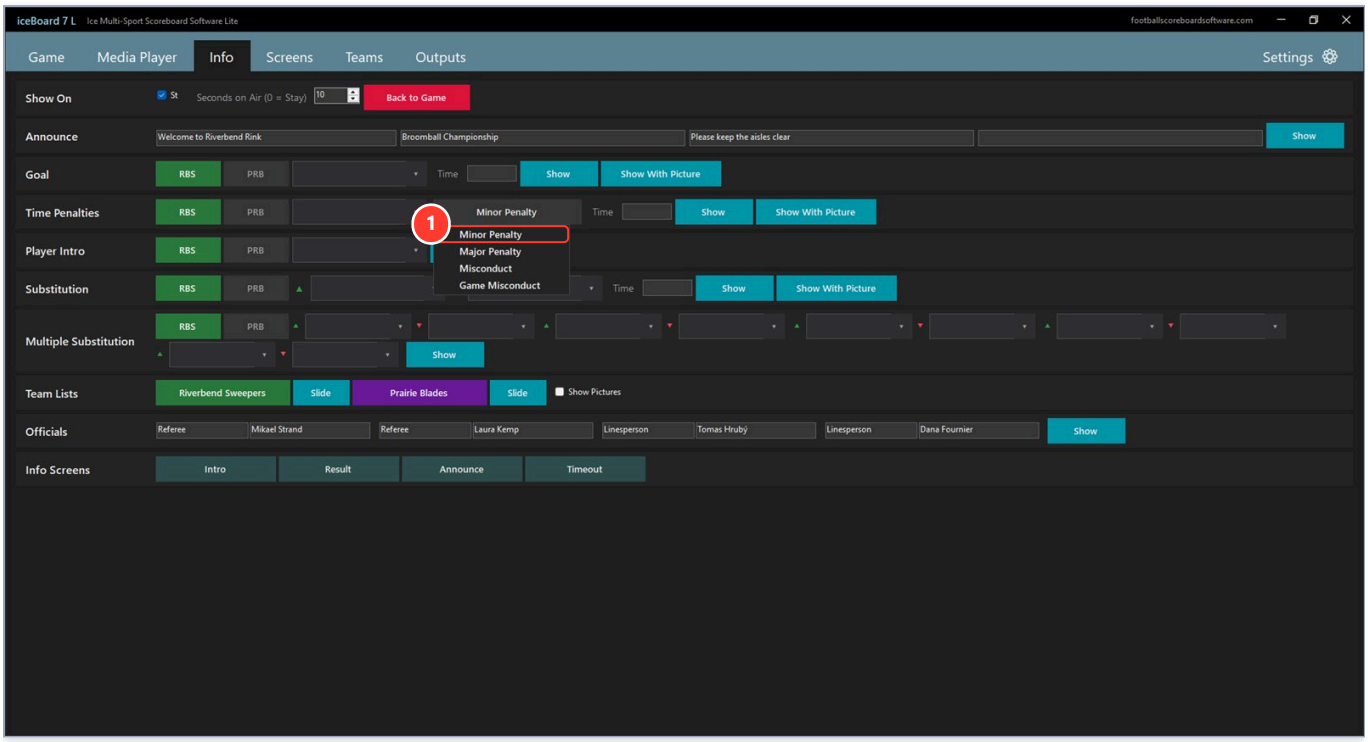


Figure 139. The penalty types in the choice list of the Info page (broomball).

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

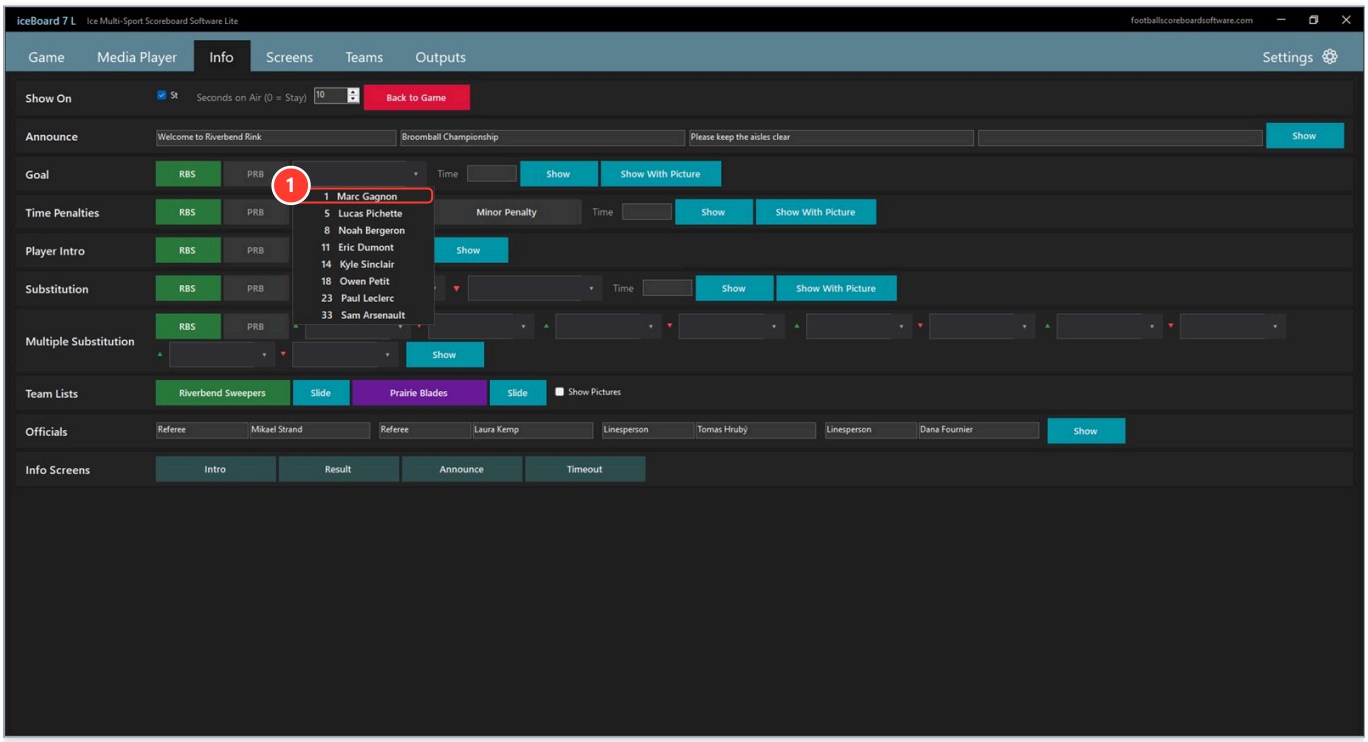


Figure 140. The player list of an Info page row (broomball).

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

Broomball Outputs

The Game Screens

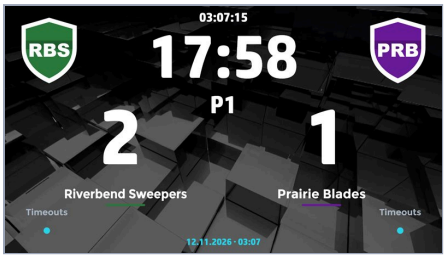


Figure 141. St: the broomball scoreboard with clock, period, scores and timeouts.

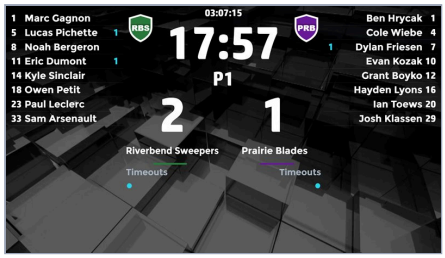


Figure 142. St with Player Panels on.

Info Screens and Broadcast Graphics

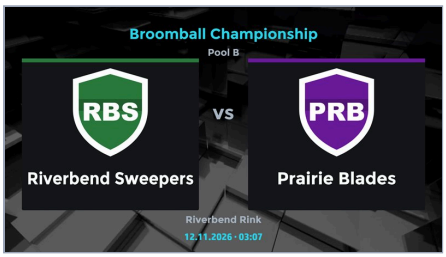


Figure 143. St Intro: event, teams with logos, venue, date and time. St · Intro before the face-off.

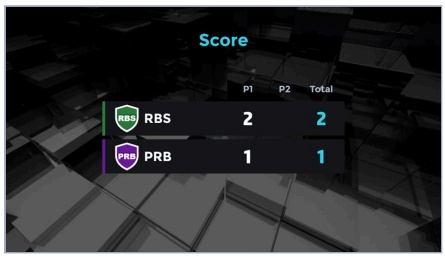


Figure 144. St Result (Score): goals of each period and the total. St · Result at the intermissions and after the game.

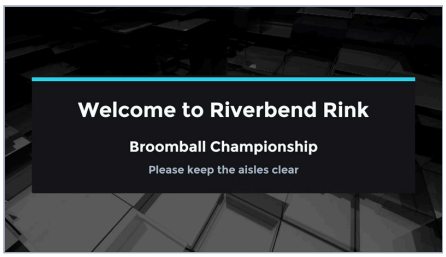


Figure 145. St Announce: title and lines of the announcement. St · Announce or Info ▸ Announce ▸ Show.

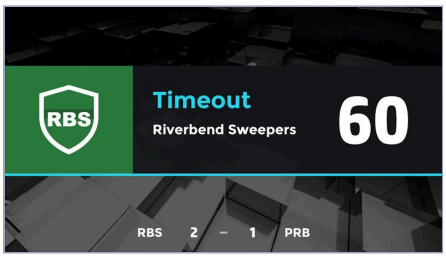


Figure 146. St Timeout: the team and the 60-second countdown. St · Timeout.

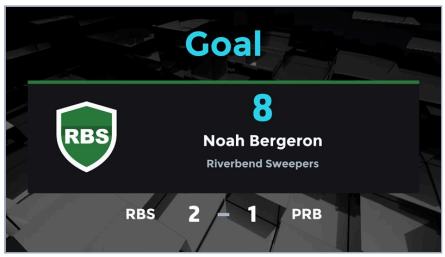


Figure 147. St Goal: number, name, photo and team of the scorer with the score. Info ▸ Goal ▸ Show (With Picture).



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

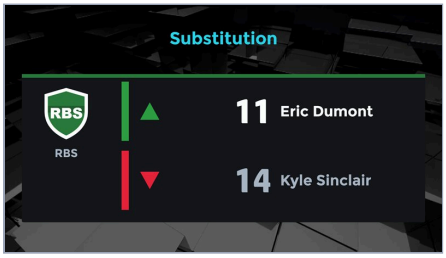


Figure 149. St Substitution: player in (▲) and player out (▼). Info ▸ Substitution ▸ Show.

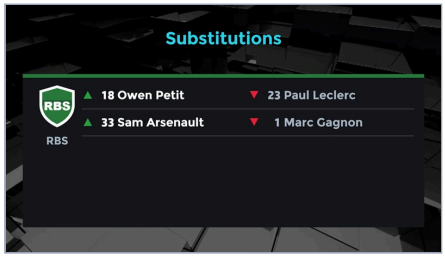


Figure 150. St Substitutions: up to five in / out pairs of one team (line changes). Info ▸ Multiple Substitution ▸ Show.



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.

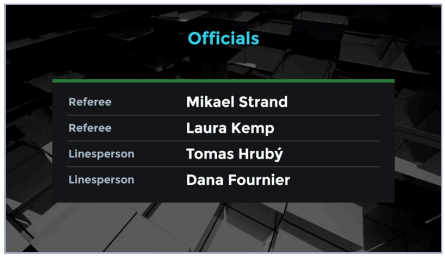


Figure 153. St Officials: referees and linespersons. Info ▸ Officials ▸ Show.

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.

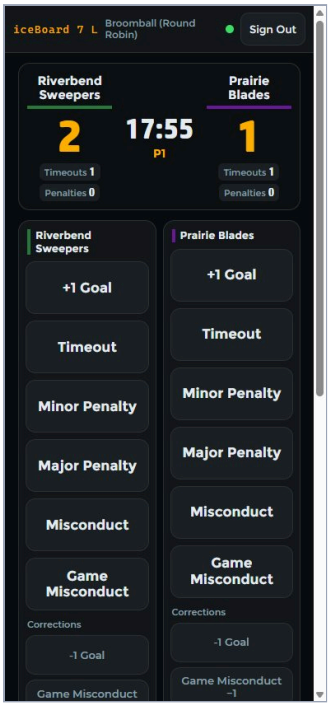


Figure 154. Phone: scores, clock and period, both team blocks.

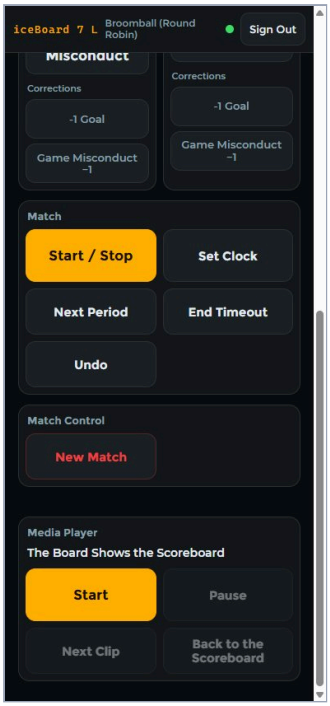


Figure 155. Phone, scrolled down: Corrections, Match and Match Control.

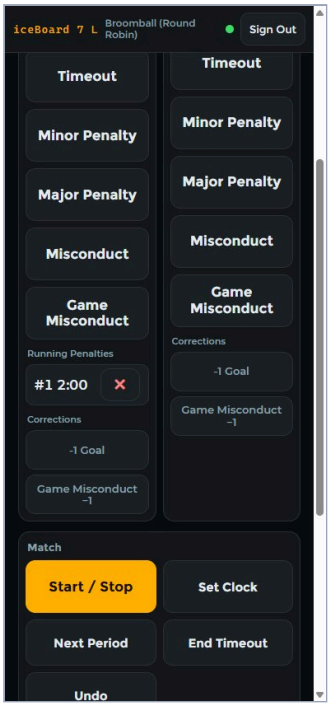


Figure 156. Phone: the running penalties under the team blocks, each with ✕ to remove it.

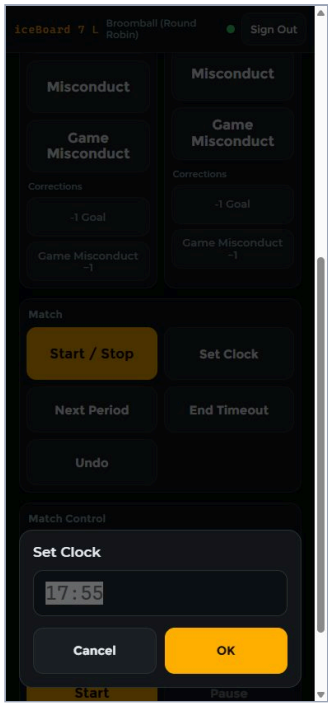


Figure 157. Phone: the Set Clock sheet.

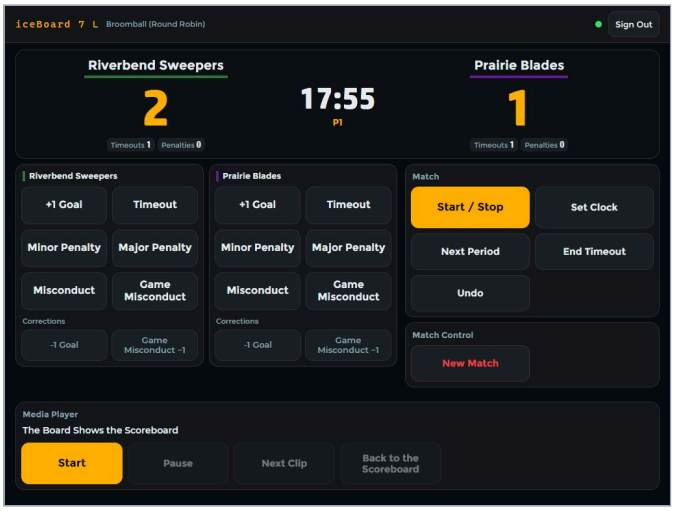


Figure 158. Tablet: the same blocks side by side.

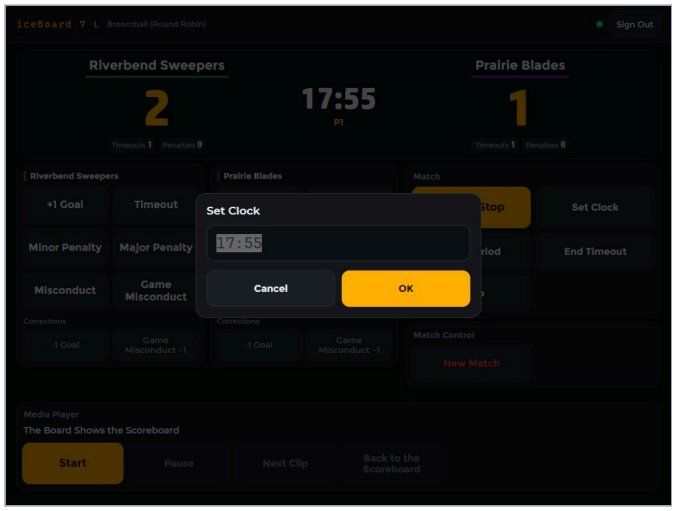


Figure 159. Tablet: the Set Clock sheet.

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).

Remote button	Where	What it does
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**.

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.

20 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 L 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

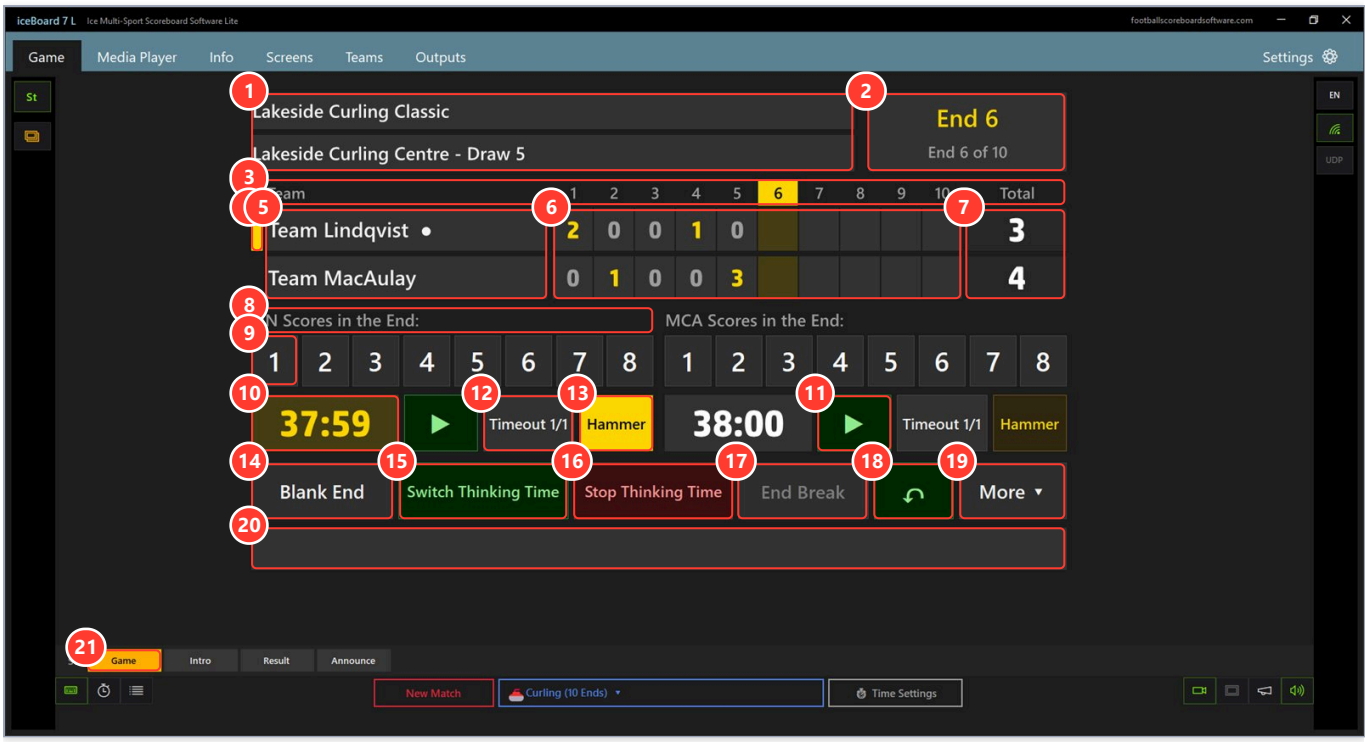


Figure 160. The curling Game panel: line score, the points of the end, thinking time, timeouts and hammer.

#	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**.

> **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

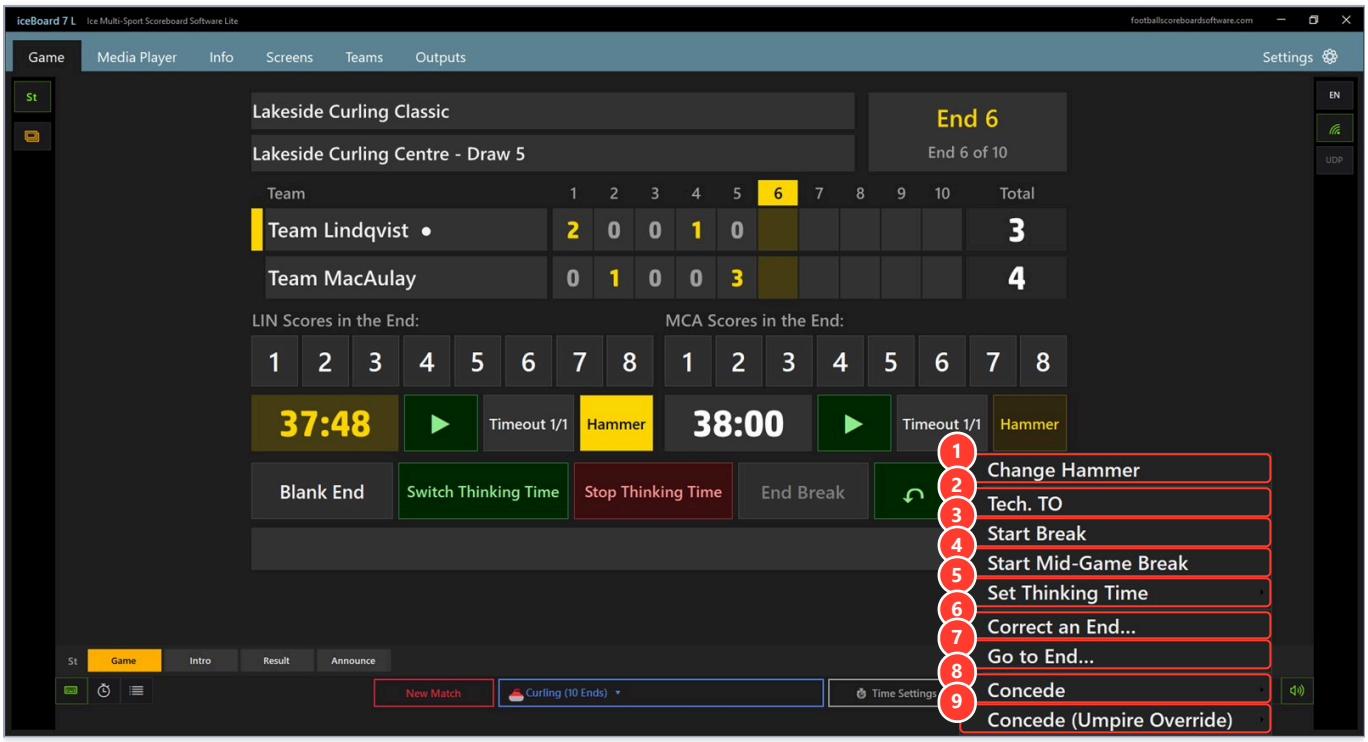


Figure 161. The More menu of the curling panel.

#	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 L asks *Team … concedes the game before the minimum number of ends (umpire override)?* and then ends the game as Concede does.

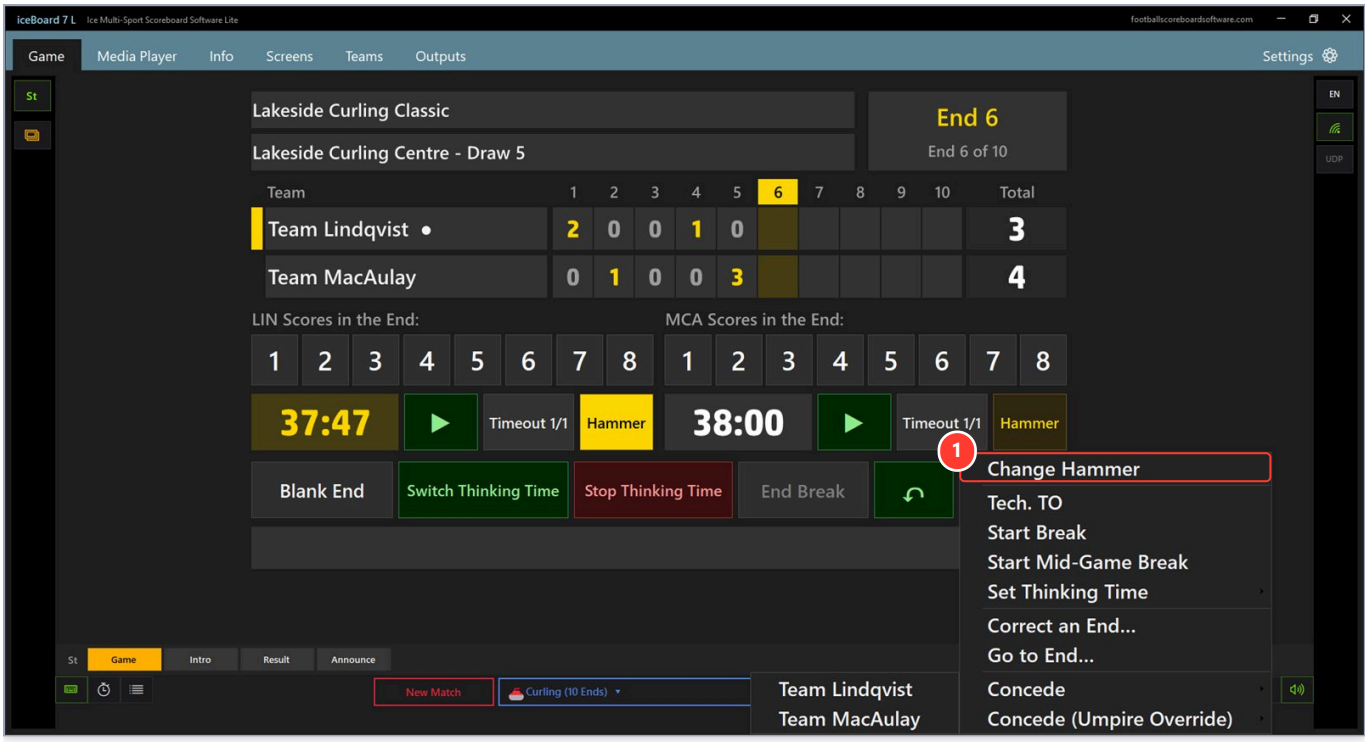


Figure 162. More ▾ ▸ Concede: the two teams.

#	Control	What it does
1	**Team**	The team that concedes. iceBoard 7 L 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).

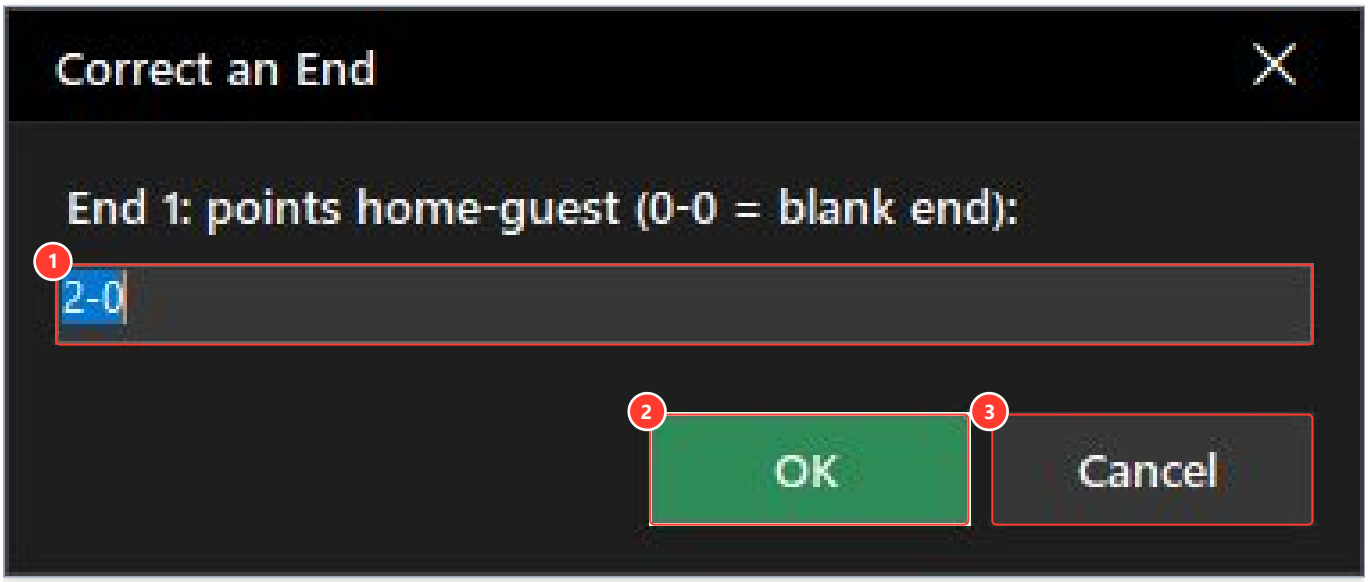


Figure 163. A click on a played end opens the correction of that end.

#	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

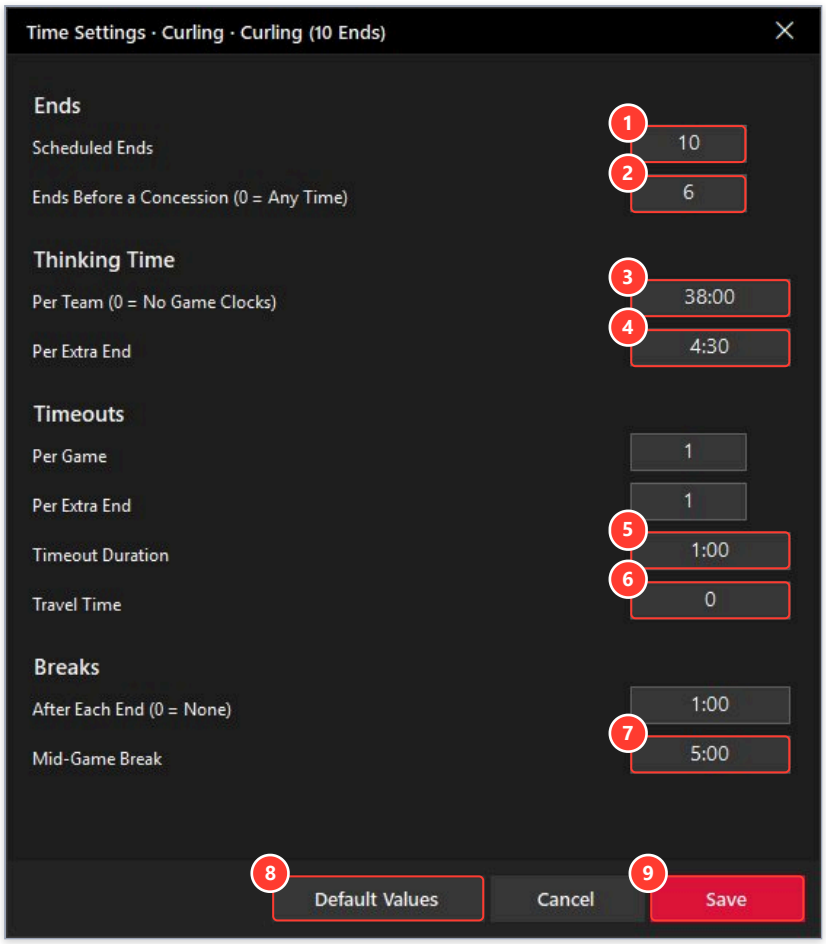


Figure 164. Time Settings for curling (10 ends).

#	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

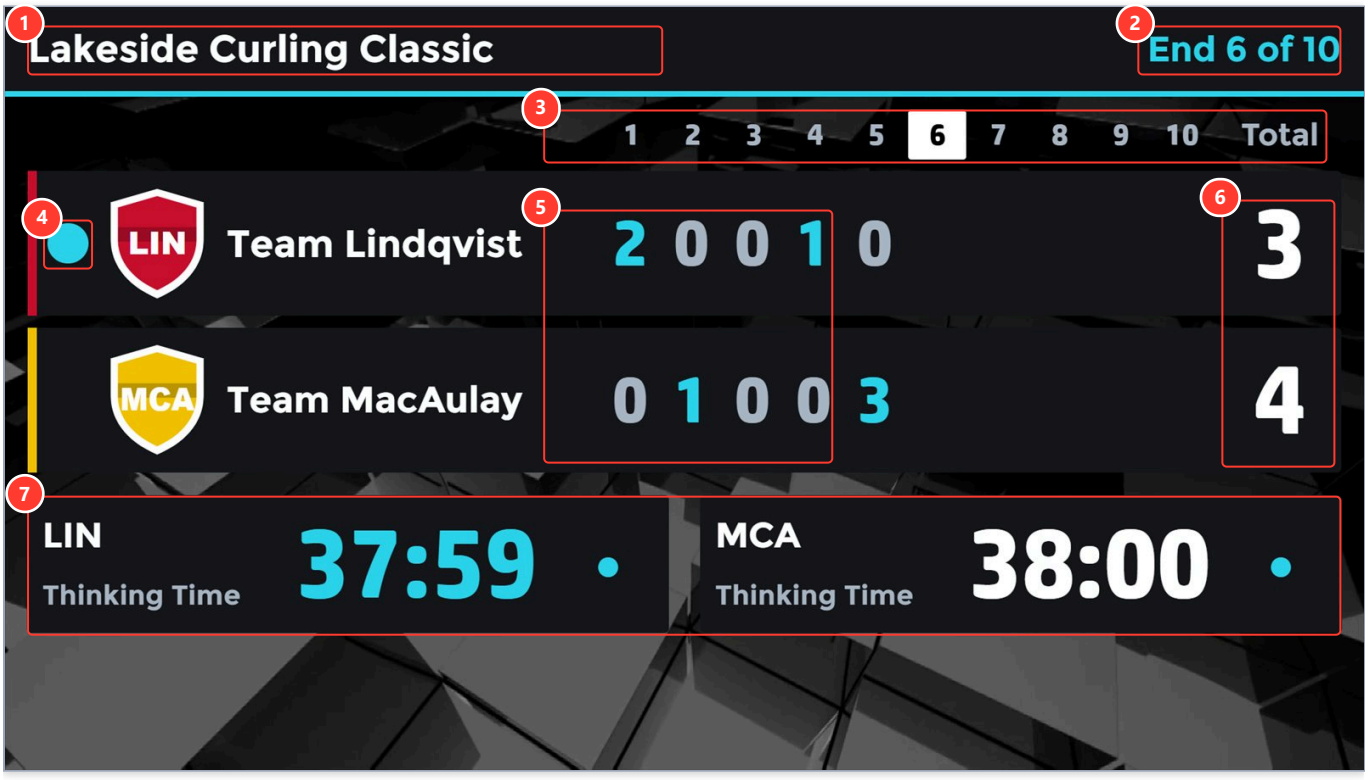


Figure 165. The curling St board (Arena design).

#	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.

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



Figure 167. St Result: the full line score and the winner. St · Result after the game.

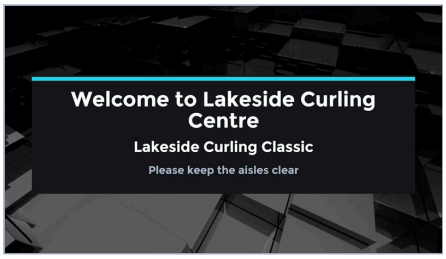


Figure 168. St Announce: an announcement.



Figure 169. St Player Intro: one player.



Figure 170. St Team List: the team (lead, second, vice-skip, skip, alternate).

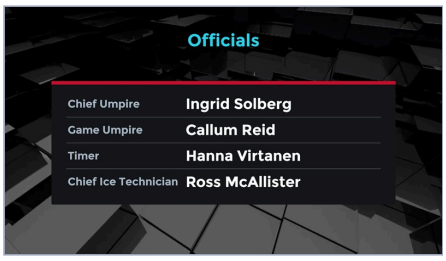


Figure 171. St Officials: chief umpire, game umpire, timer, chief ice technician.

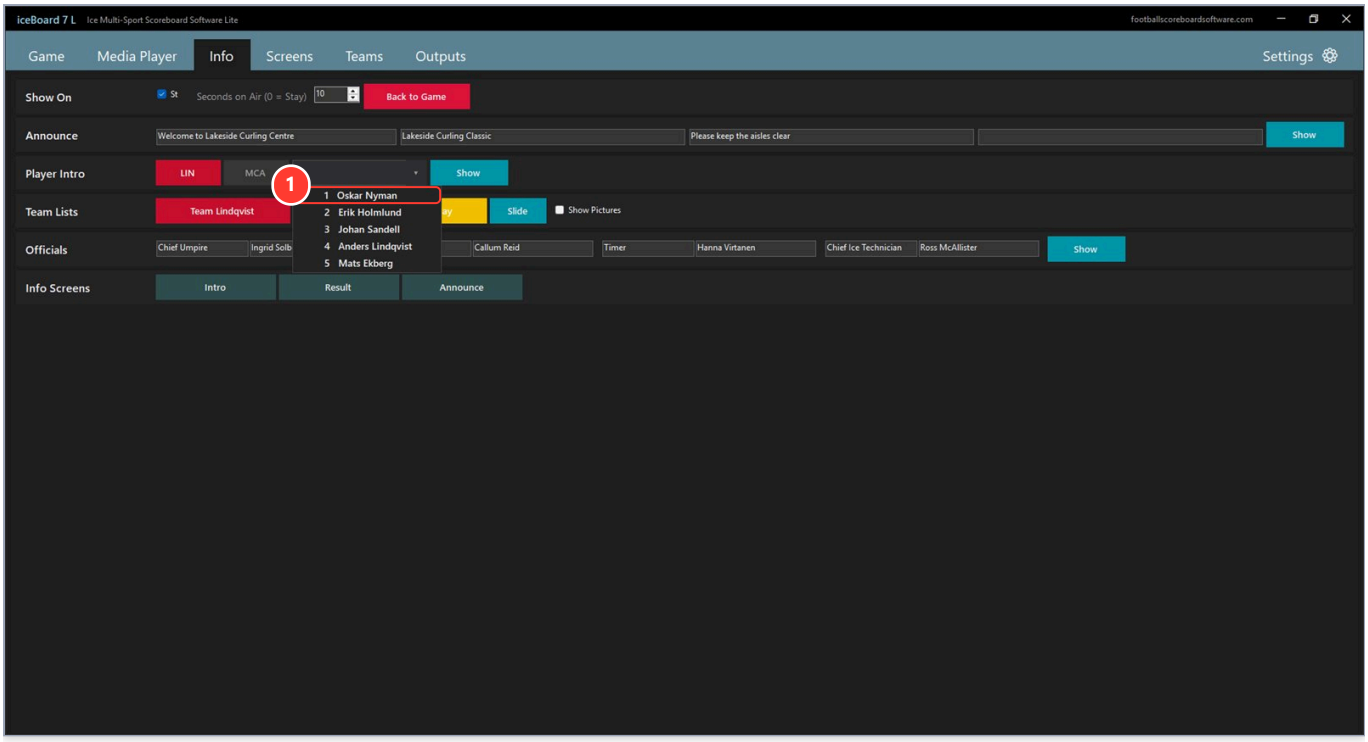


Figure 172. The player list of an Info page row (curling).

#	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).

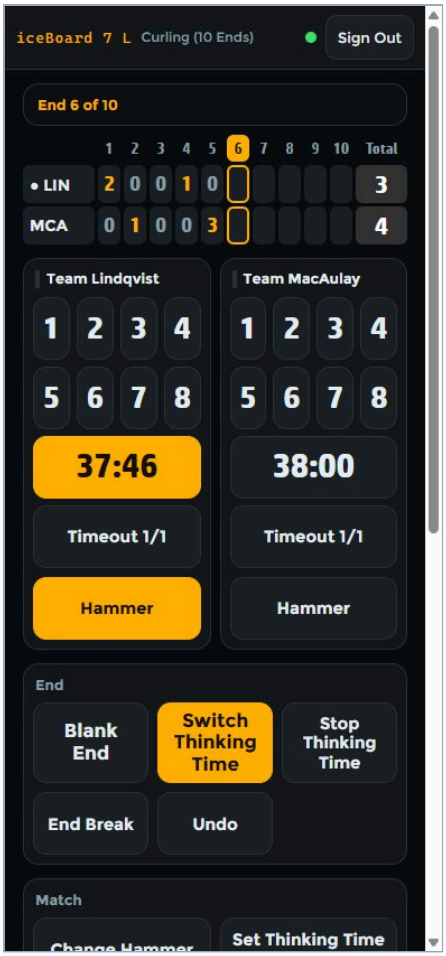


Figure 173. Phone: the line score, the team blocks and the End block.

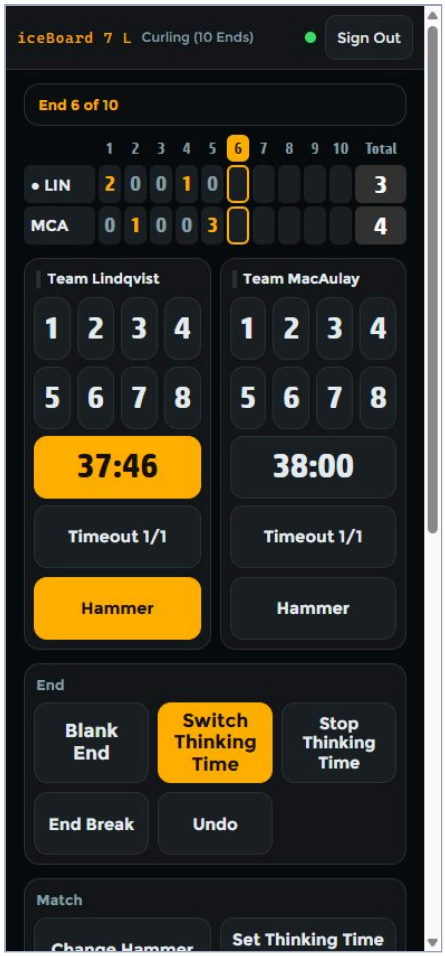


Figure 174. Phone, scrolled: Match and Match Control.

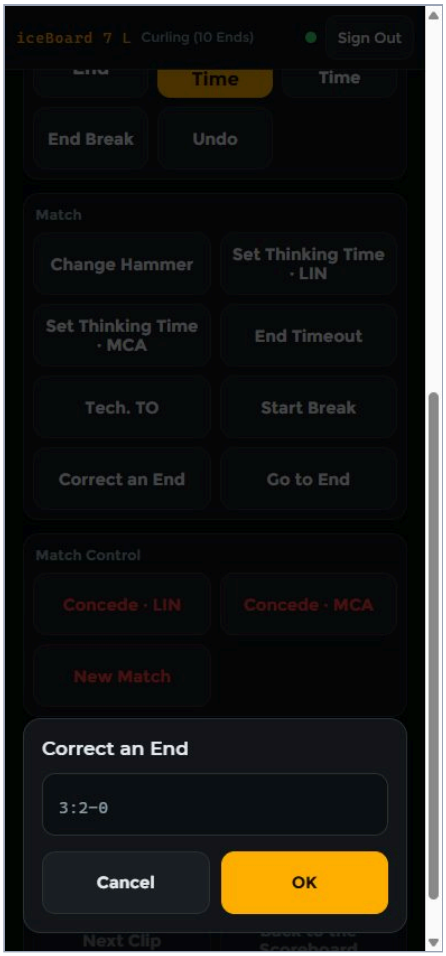


Figure 175. Phone: a sheet that asks for a value (Set Thinking Time).

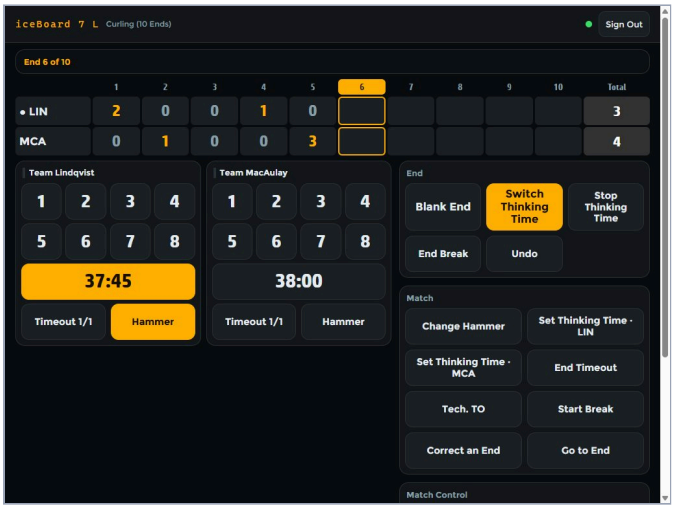


Figure 176. Tablet: the line score, both teams, End and Match side by side.

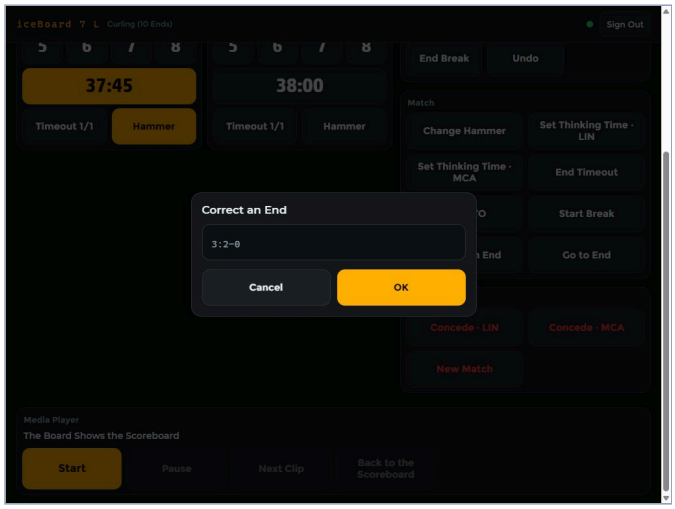


Figure 177. Tablet: a value sheet.

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 L refuses it.
4. A blank end gives the decision to the team that delivered the first stone: iceBoard 7 L 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.

21 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. 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.

22 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.

23 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).
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.

24 Files and Folders

All your data lives in the *data* folder inside the program folder. To move iceBoard 7 L 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	The board output: shown, monitor (number and Windows name), full screen, window position, player panels; its design per sport; player panel columns; background video / picture on or off.
data\media\playlists	The Media Player: playlist01.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\background	Background video and picture of the board.
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*.