



Equipment for outdoor laser tag

NETRONIC platform

User's manual
Part 3
**SETTING UP AND USING
SOFTWARE**

Version 1.3.2 from 24.03.2025

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The company has developed the following applications for use in outdoor lasertag:

- Lasertag Operator: designed to configure and control lasertag equipment;
- Lasertag Tv-Out: designed to broadcast statistics on a TV screen or projector installed in a non-gaming room, such as a waiting room or reception area.

This manual is a description of the logic of the Lasertag Operator application starting from version 3.2.3 – with a modified interface and extended functionality. Below there are the minimum firmware numbers for hardware microcontrollers compatible with this application:

- Tager - 19_5_0D44CA98;
- Headband/Vest – 5.2;
- SIRIUS – 5.1.15;
- Multistation – 5_5_CF183658;
- Smart Domination box – 4.4.56;
- Shock-band SCORPION – 6_3_CEA7A557;
- Laser tag bomb Supernova – 1.9.

1. Setting up and controlling equipment using the Lasertag Operator application

The application is designed to set up the equipment, control the game and record statistics using devices supporting the Android operating system (smartphones, tablets). The application interface language is automatically selected depending on the device settings.

Minimum device requirements:

- Snapdragon 450 chipset;
- RAM 4 GB;
- ROM 16 GB;
- Android operating system version 10.0.

The connection of the Android device with the laser tag equipment is carried out via a router.

1.1. Connecting Android device

1 Download and install the Lasertag Operator application on the device - available at:



<https://play.google.com/store/apps/details?id=net.lasertag.operator>
or <https://lasertag.net/support/>



2 Install the application.

3 Turn on a router configured for a specific hotspot. At factory settings, the hotspot name is LASERTAG, the password is 2015LT2015.

Note: the system supports 5 more names:

LASERTAG-NET, password – 2018LTN2018.

MGO, password - 2018MGO2018

Test mode, password - 2018TM2018

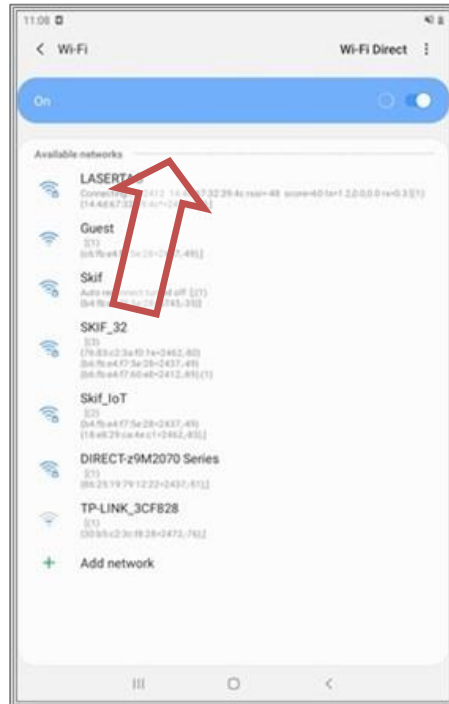
OTK, password - 2018OTK2018

TechSupport, password - 2018TS2018

In these cases, the hotspot, as well as all the laser tag equipment used at one site, should be configured in accordance with the selected name and password.

4 On your Android-device, turn on the Wi-Fi network connection mode (Settings/ Connections/ Wi-Fi) and search for the Hotspot. (The setup procedure may differ depending on the version of the operating system and device model).

- 5 After finding the LASERTAG Hotspot, select it and enter the password 2015LT2015 in the window that appears.
- 6 Touch the CONNECT button. A connection entry should appear under the LASERTAG inscription, marked NO INTERNET ACCESS.

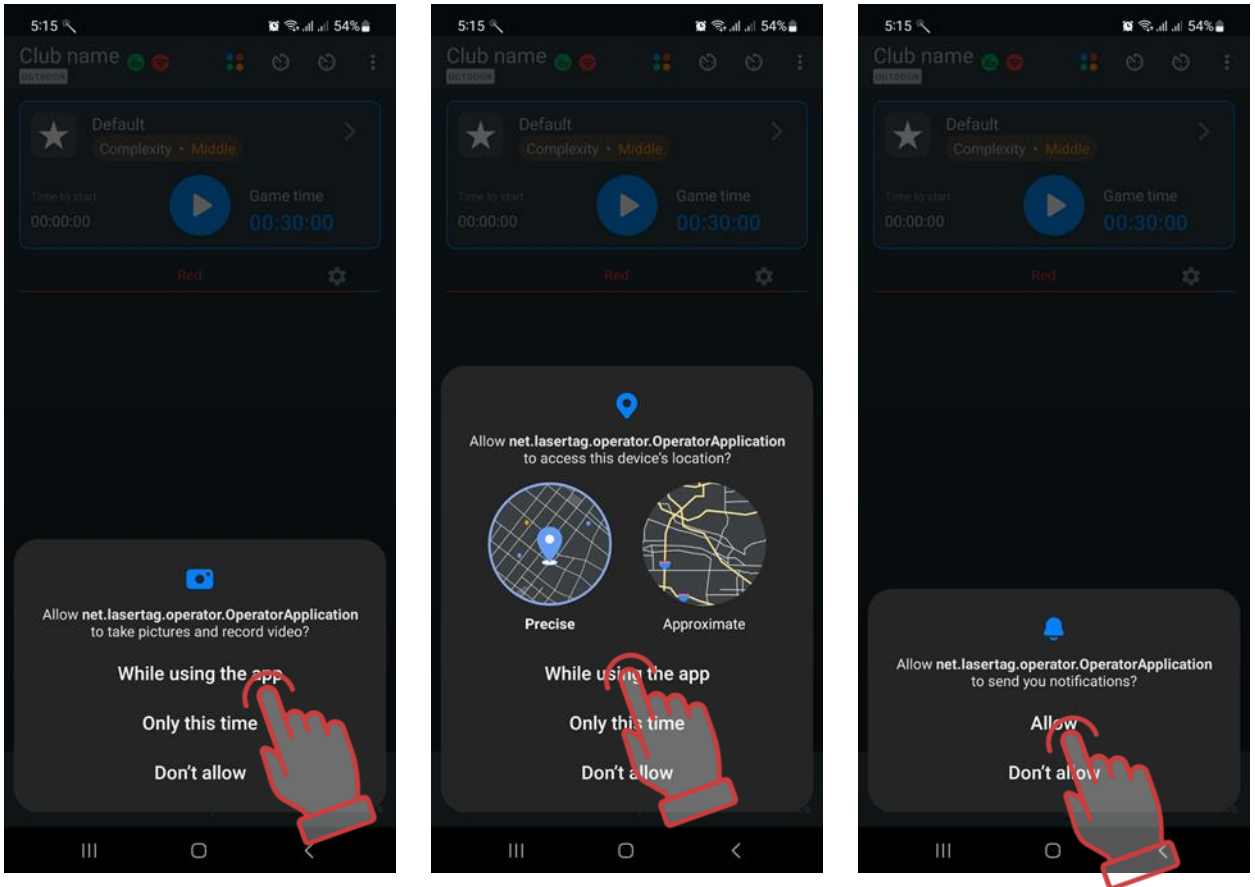


1.2. Launching Lasertag Operator

The installed Lasertag Operator app (LTO) will be displayed on the home screen or in the app menu.

To launch the application, click on its icon.

First, the app asks for permission to take pictures, record video and audio, access the device's location, access for LTO to send notifications to the developer about issues that arise in the application, and access photos and multimedia on the device with the installed application.

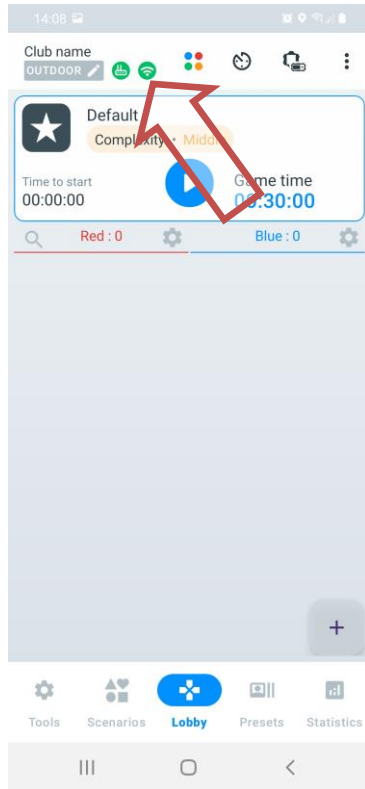


It should be noted that access to location data is needed to control Wi-Fi network data and correctly display the game network.

1.3. Setting up the application


Before you start setting up the application, make sure your device is connected to the network you want to use. There should be two green icons at the top of the main screen of the app. The first indicates a connection to your router, and the second indicates a connection to the correct Wi-Fi network.

If one of the icons is red, the device is connected to the Wi-Fi Internet network and not to one of the local networks dedicated to lasertag games. In this case, you need to reconnect to one of the following networks: LASERTAG, LASERTAG.NET, etc.

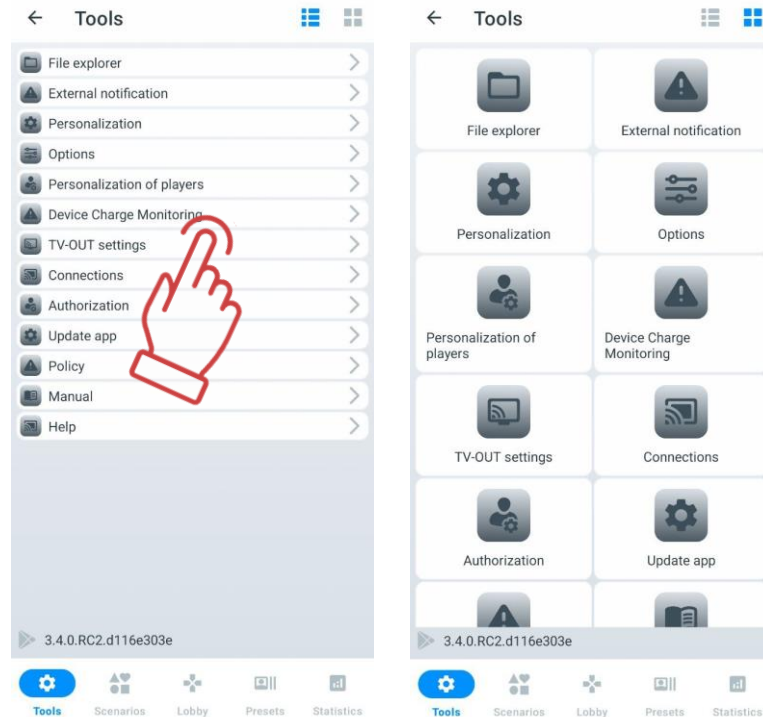


The tab bar at the bottom of the screen contains the main controls that allow you to quickly switch between different sections of the app.

1.3.1. Tools tab

To access the Settings menu, click the gear icon  on the tab bar.

By default, the Tools menu items are displayed in a table, but you can choose to display them in tiles. To do this, click on the tile icon in the top right corner of the screen. The icon for the selected display type will be highlighted in blue.



The settings menu contains 12 items.


1.3.1.1. File explorer

The File Explorer item contains the "pdf", "Scenarios", "Presets", "Logs", and "Manuals" tabs.

The 'pdf' tab displays all the PDF files saved in the app. In particular, it stores statistics of past games: achievement table, personal stats file, team statistics file. You can also select everything, delete all or individual files, share via email or social networks.

The Scenarios tab displays scenarios that you have created in the app or when someone shared a scenario with you and you opened it through the app.

The Presets tab displays presets that you created yourself in the app or when someone shared a preset with you and you opened it through the app.

Scenarios and presets in these tabs can be saved to your tablet/smartphone or sent via email/messenger. To do this, select the scenarios/ presets you want from the list, click the Share button  in the top right corner of the screen, select any file sharing service available on your tablet/smartphone from the list of available file sharing services, and save the scenarios/ presets.

The Logs tab displays the log files - text files that are automatically created each time the game is launched and contain data on all user actions. If there are any issues with the game, the Administrator or Club Owner may submit these files to Technical Support, allowing them to understand a particular technical issue in detail.

The manuals tab contains PDF files of user manuals for laser tag equipment downloaded from the company's website at <https://lasertag.net/support/manuals/outdoor>.



1.3.1.2. External notification

The equipment produced by the company uses two types of sound effects that are reproduced:

- tager's speakers;
- external acoustic system.

The tager speakers reproduce the sound of a weapon being used (a shot, radiation, a medkit, a zombie growl, etc.), a misfire, a ricochet sound, as well as some system signals (weapon breakage, barrel overheating, etc.).

The sound scheme of the set can only be changed if the microcontrollers of the devices are flashed by the technical service using a special application.



The External Alert tab contains the Event Table and Background Sound tabs.

The Event Table tab contains the sounds of the voice messages that will be played automatically when situations occur in the game.

Lasertag Operator application allows you to listen to voice messages and, if necessary, play them in manual mode. The external speaker system is connected to the server device using either an audio jack or Bluetooth.

To activate audio commentary for in-game events, toggle the "Play music randomly" switch to the active position.

The "Enable/Disable system settings sounds" option allows you to adjust the sound playback when system parameters are changed:

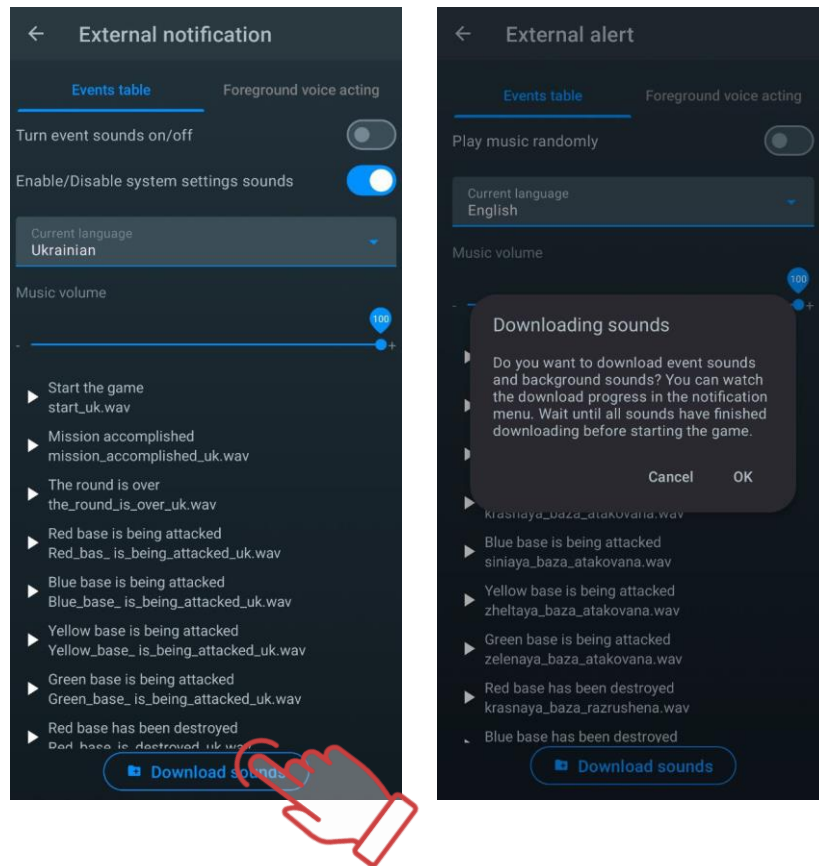
- If the switch is turned on , the tager will play the system sound each time settings are changed.
- If the switch is turned off , the tager will operate in silent mode, applying settings without playing system sounds.

Next, in the Current Language menu, select the playback language from the drop-down list. In this version of the application, Ukrainian, Russian, English, Spanish and French are available.

Next is the volume control for music playback - the default setting is 100%. If necessary, you can quickly adjust the volume.

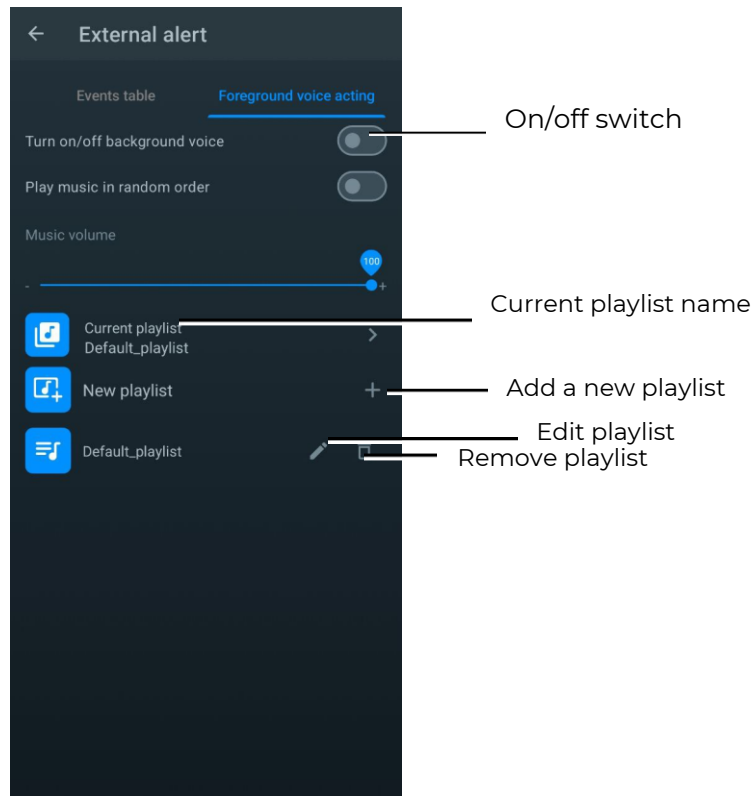
To download sounds to your device for playback during the game, click Download Sounds and confirm with OK.

When you click on the selected line of the message, the sound is played in parallel by the speakers of the tablet and the external acoustic device.



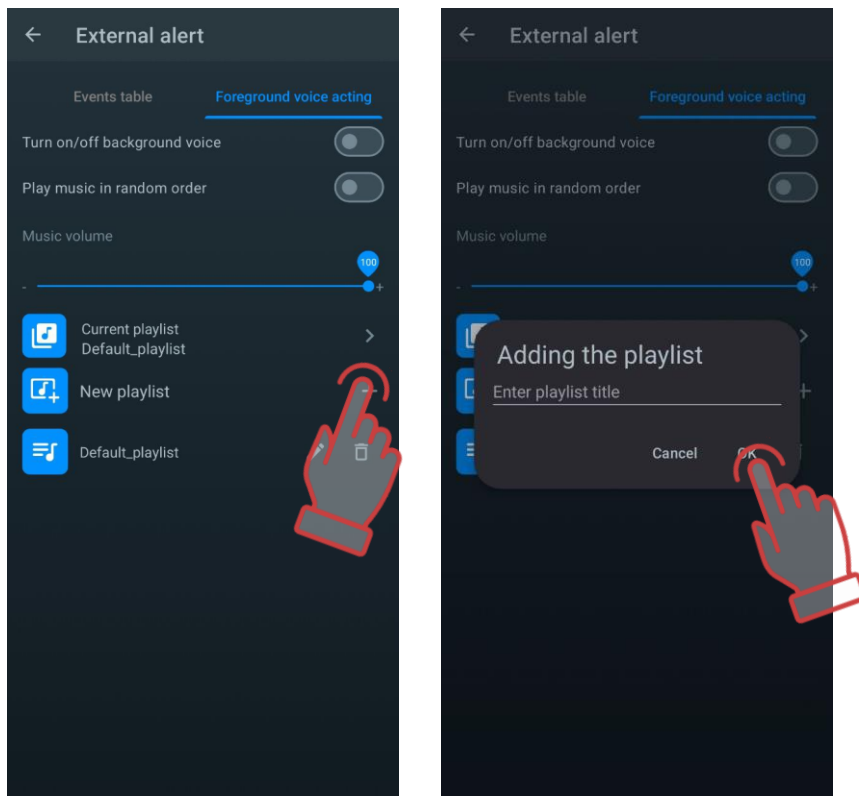
The Background Sound tab allows you to control the music that plays on the field during the round.

The app allows you to turn the background sound on/off, turn the music on/off in random order, adjust the volume, and create, select or edit a pre-defined playlist (music playlist). To do this, click on the selected line.




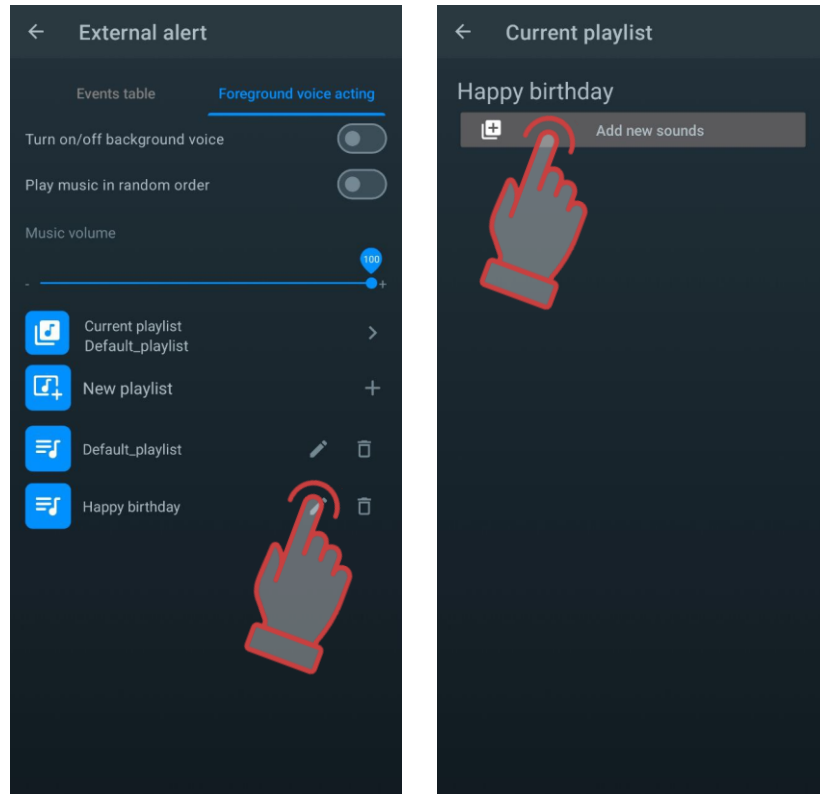
To create a new playlist, click New Playlist. The application will ask you to name the playlist. The name can be linked to a particular scenario, game theme, event (such as a birthday) or player category.



After confirmation with the OK button, the playlist name will appear in the general list.



Now the playlist needs to be created:

- 1 Press the pencil button .
- 2 In the window that opens, click on the Add New Sounds line. The device file system window opens.



- 3 Select the required music compositions (files with the .wav, .mp3 and .flac extensions are supported). The file search order depends on the version of the tablet or smartphone operating system.
- 4 The file names appear in the song list. If you wish, you can rename it by clicking on the pencil button .
- 5 The list can be supplemented (repeat the process for adding to the playlist) or shorten it by clicking the trashcan icon  to the right of the file name

The playlist itself is deleted in the same way.

Now, when the switch ON/OFF BACKGROUND SOUND is turned on during the game, the melodies will be played depending on the selected playlist and in the order as they are located in the list. The playlist is controlled from the standard player of the operating system. Volume is controlled by adjusting the volume of the device and the speaker system.

You can also delete or change the built-in voice in the default playlist.

Clicking the pencil icon  opens a list that can be edited.

To change the order of playing melodies, you need to click on the song line, hold it and move it to the selected place. A short press on the song line plays it, a second press stops it.

If necessary, you can rename (button ) or delete the selected track (button )

1.3.1.3. Personalization

The Personalisation option allows users to tailor the application to their own needs.

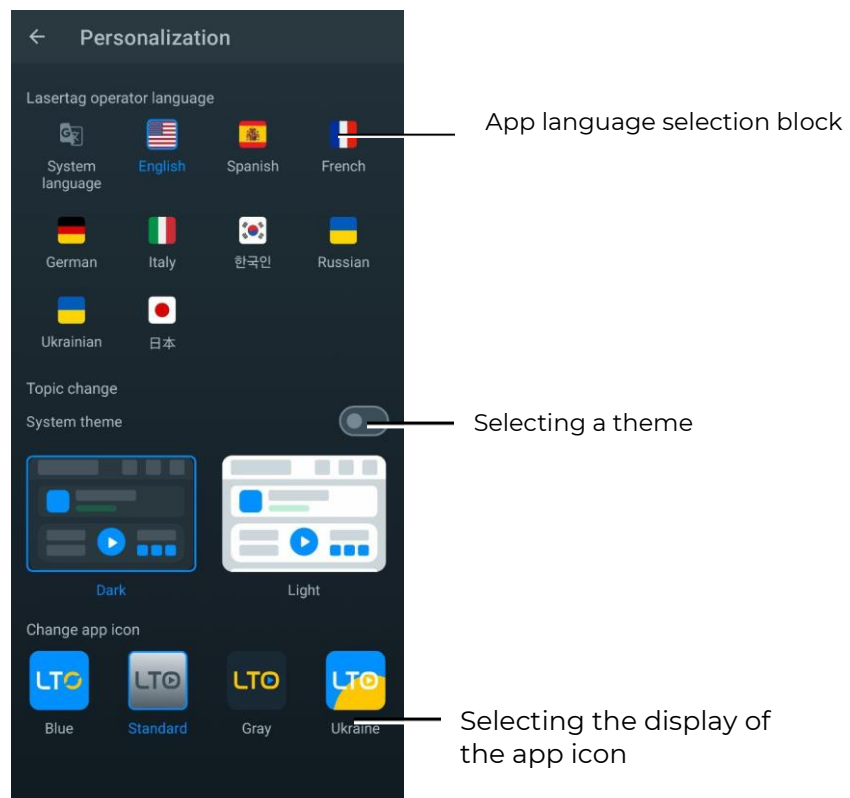
The top section contains the choice of application language. To change the language, click on the appropriate icon. By default, the application opens in the same language that the operating system is currently running in. When you change the language, the application restarts.

If your system language is not in the list, the interface will automatically switch to English.

Next, you can change the app's system theme from dark to light and choose how the application icon appears on the desktop and menu icons within the application are displayed.



You can watch a video tutorial on how to change the light or dark theme by following the [link](#) or by scanning the QR code.



1.3.1.4. Options

The Options item contains club specific information settings and global settings.

In the Club Information section, you can change:

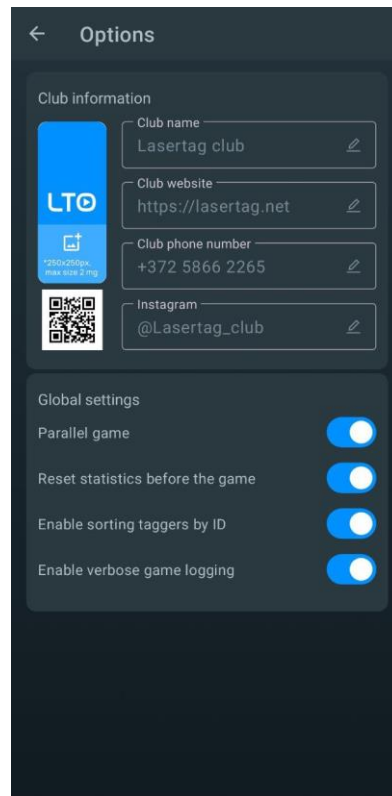
- club logo;
- club name;
- club website;
- club phone number;
- club Instagram profile.

These data will be shown on the forms for printing statistics.

To change the club logo, click on the current logo and select the desired image in the window that opens. The image file size should not exceed 2MB. The recommended logo size is 250x250 pixels. When uploading a larger image, the image will be automatically adjusted to the specified size. It is not recommended to load a smaller logo, because the picture is stretched and the image will be of poor quality.

To enter the latest information about the club, tap on the corresponding line and use the keyboard that appears to enter the name, website address, phone number and Instagram.

The QR code will be automatically generated from the Instagram line.



The GLOBAL SETTINGS section has four items: PARALLEL GAME, COLLECTION OF STATISTICS BEFORE THE GAME, ENABLE SORTING TAGERS BY ID and ENABLE VERBOSE GAME LOGGING.

The PARALLEL GAME item is necessary when games are played simultaneously on several playgrounds, bounded by each other, for example, only by nets. In this case, a player participating in the game on another ground may be hit from a tager.

Control over the observance of the parallelism of games is possible only when the settings and management of games are performed from different servers. In this case, the PARALLEL GAME item (Main menu/Settings) must be checked on the control tablets. The algorithm for conducting parallel games is as follows:

- 1 When the game starts, the server resets the identified numbers of the kits participating in the round to the taggers.
- 2 After the IR-signal of the opponent's tager hits the player's kit sensor, the ID number is compared with the list of numbers participating in the game on this site.
- 3 If the number is on the list, the hit counts. If not, it is ignored.

It is possible that the kits on one of the parallel games are not connected to the server, but are controlled with the Remote Control. In this case, these kits cannot hit kits connected to a server at another ground. This is due to the fact that the IDs of the kits controlled from the Remote Control will not be included in the list of kits that take part in the game with the server, reset at the start. At the same time, kits controlled from the Remote Control can be affected by kits connected to the server, so they are not told about the numbers that should be ignored.

The checked box COLLECTION OF STATISTICS AFTER THE GAME allows you to automatically reset the game statistics after each round.

If you check the box ENABLE SORTING TAGERS BY ID, then in the Game room window the tiles of the players will be arranged in order - numbers in ascending order from top to bottom. Otherwise, the tiles will be arranged in random order.

The marked menu item ENABLE VERBOSE GAME LOGGING allows user to display the maximum number of game events. If the item is not checked, in the sub-item of the main menu "Game events" during the game, only the main events in the game are displayed - the start and end of the game, the base capture, the capture of the Domination Box, etc. If the item is checked, this submenu displays all game events, including all hits and defeats of players against each other.

1.3.1.5. Tab "Personalization of Players"

The "Personalization of Players" menu option allows you to choose one of the built-in avatar themes or create your own, customize participants' names and avatars, and personalize the appearance of profiles.

This feature is useful if your club has a specific theme and needs unique player names to support the concept.

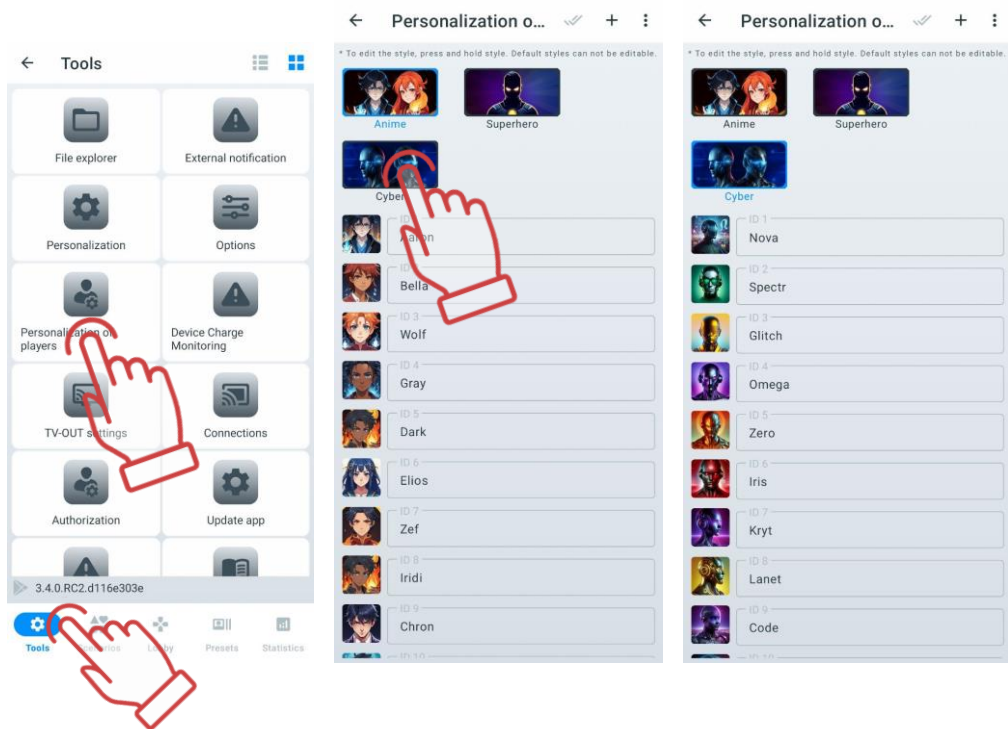
! **Note: Starting from LTO version 3.3.5, avatars are no longer linked to teams. Names and avatars are now tied to specific device IDs rather than teams. This means that each participant has a unique avatar and name, regardless of team composition.**

1.3.1.5.1. Selecting a Standard Theme

Each standard theme in the "Personalization of Players" menu (anime, superheroes, cyber) contains a set of 127 avatars with preset names. Built-in avatars and names cannot be edited or changed.

To choose a built-in theme:

- 1 Go to the "Tools" tab and open the "Personalization of Players" menu.
- 2 In the window, select one of the themes by clicking on its icon.
- 3 The selected category will be highlighted in blue.



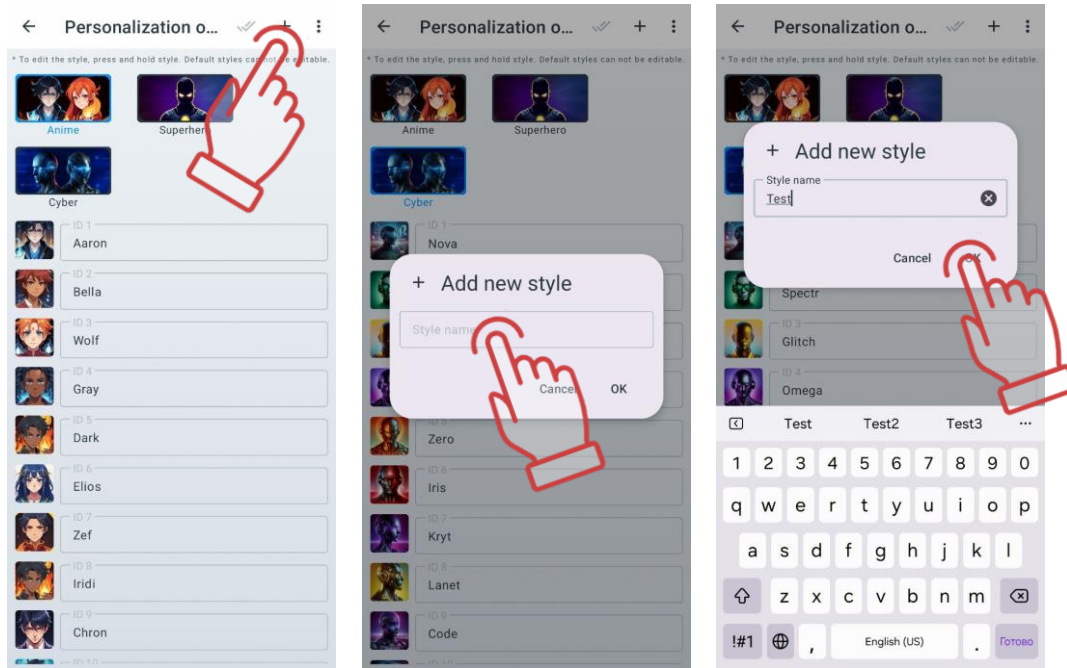
1.3.1.5.2. Creating a Custom Theme

If the standard avatar themes do not suit your needs, you can create your own theme by setting unique names and avatars for participants. This allows you to adapt profile designs to your club's style, thematic games, or players' individual preferences.

By default, the created theme has standard images for all IDs, and the ID number is used as the name. You can change them later.

To create a custom theme:

- 1 Go to the "Tools" tab and open the "Personalization of Players" menu.
- 2 In the upper right corner, click the button **+**.
- 3 In the pop-up window, enter the name of the theme.
- 4 Click "OK" to confirm.
- 5 To apply the custom theme, click on its icon.

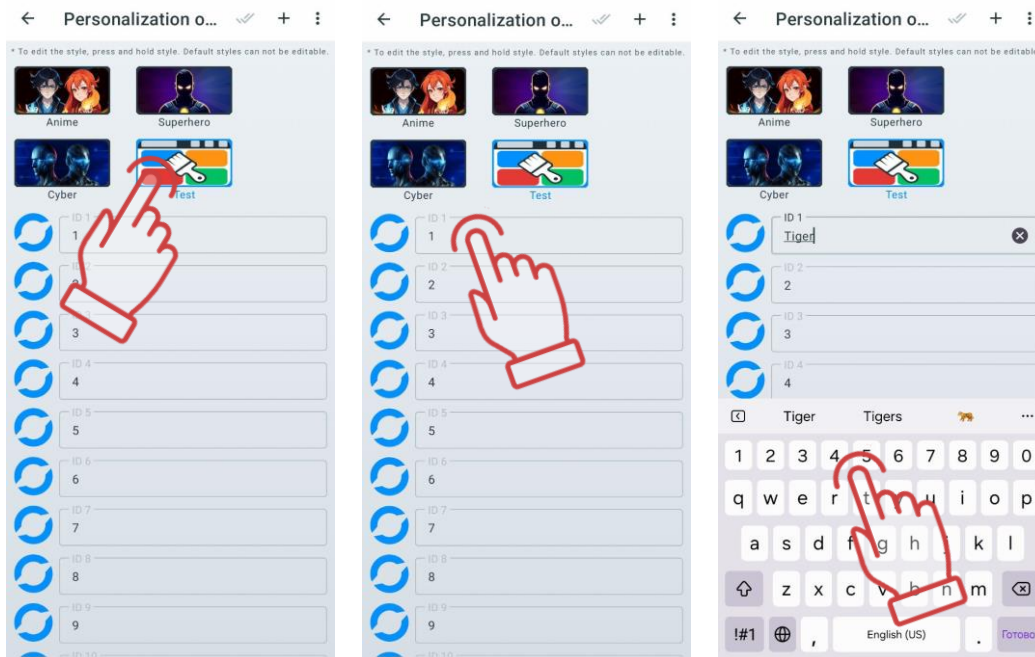


1.3.1.5.2.1. Editing Names and Avatars


After creating a custom theme, you can change participants' names and avatars as you prefer.

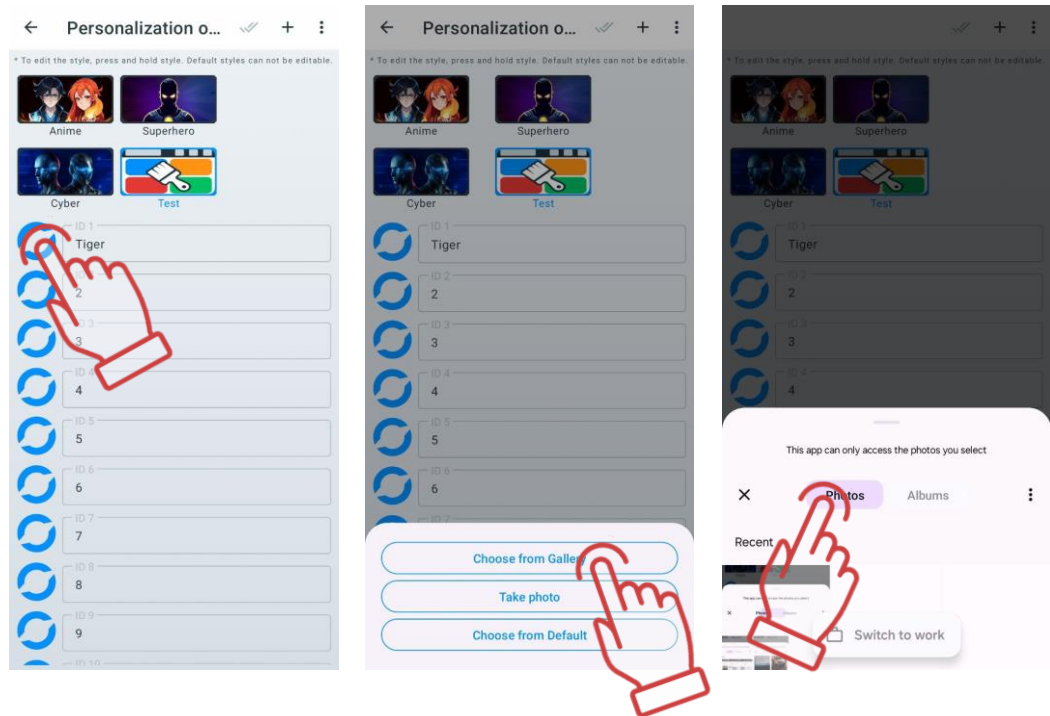
To change a name and avatar:

- 1 In the "Personalization of Players" tab, select the desired theme by clicking on its icon.
- 2 Choose the ID by clicking on the field with its name.
- 3 Enter a new name using the keyboard.



- 4 Click on the avatar located to the left of the specified name and select an image using one of the available methods in the menu:

- Choose from Gallery – open the device's file manager, select the desired image by clicking on it;
- Take a Photo – point the device's camera at the desired object or person and press the capture button;
- Choose from Defaults – in the "Default" tab, select an available avatar or use the "Custom" tab to choose a previously uploaded image. To save your choice, click the button .

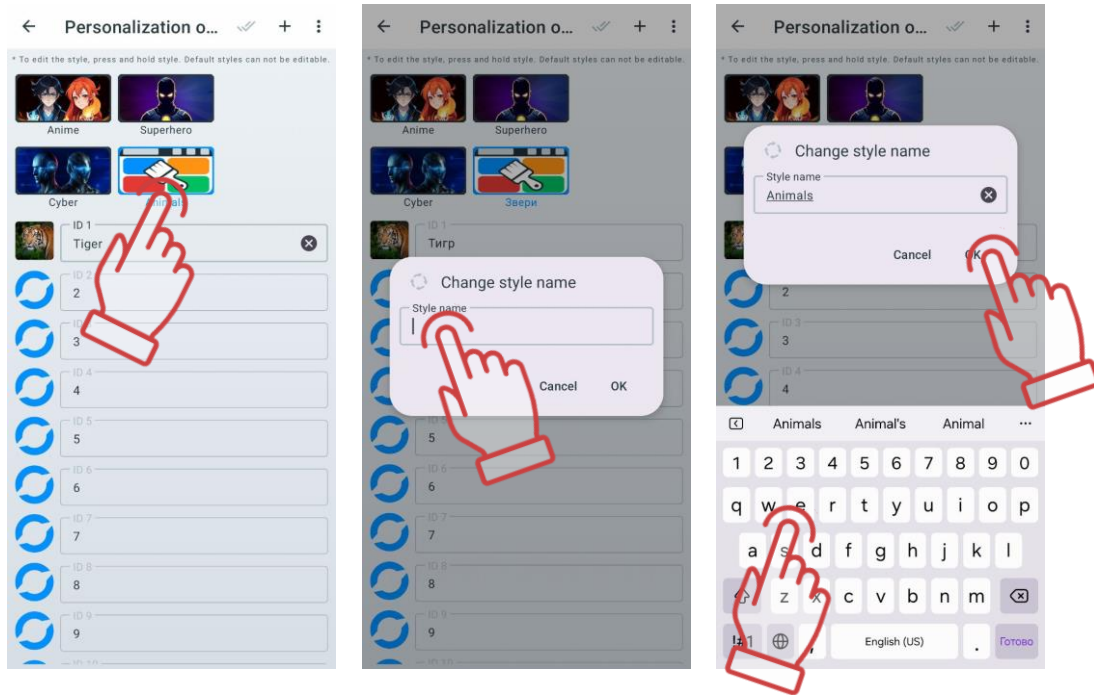


You can also change participants' icons and names on the player cards in the "Lobby," but these changes will only be saved for the current session. For more details, see section .1.3.3.10.1

1.3.1.5.3. Editing the Theme Name

To change the name of a created theme:

- 1 Press and hold the theme icon until the edit window appears.
- 2 Enter a new name using the keyboard.
- 3 Click "OK" to confirm.




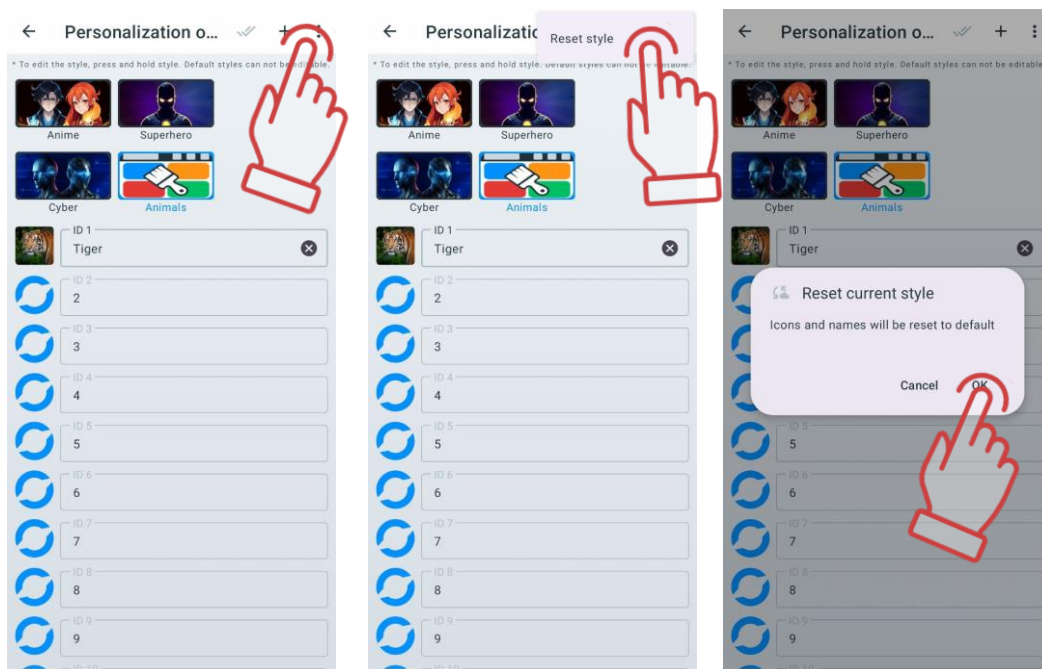
1.3.1.5.4. Resetting Theme Settings

Resetting a theme allows you to return all names and avatars to their default settings. This is useful if you need to quickly restore standard values without editing each profile individually.

Note: The reset function is unavailable for built-in themes!

To reset a theme:

- 1 Click on the icon of the custom theme whose settings you want to reset.
- 2 In the "Personalization of Players" settings menu, click the three dots button  to open the additional settings menu.
- 3 Select "Reset Style" and click "OK" to confirm.






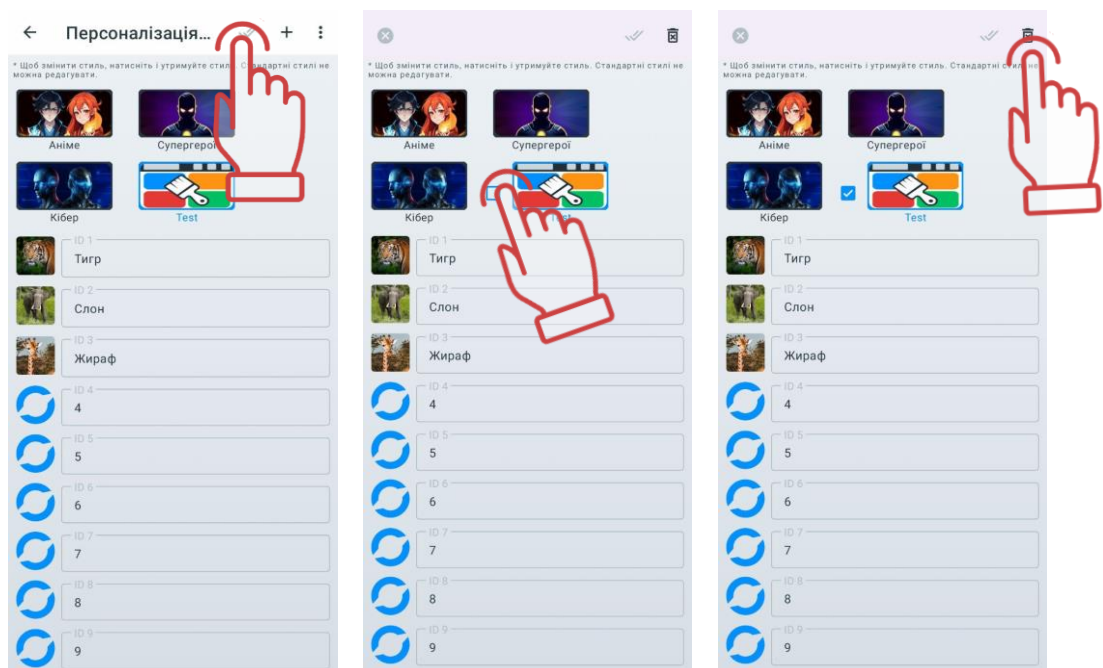
Player names and avatars will revert to default values (the ID number will be displayed instead of the name, and the participant's avatar will be blank).

You can also reset player names in the "Lobby." For more details, see section 1.3.3.4.1.

1.3.1.5.5. Deleting a Theme

To delete a custom theme:

- 1 In the "Personalization of Players" settings menu, click the button .
- 2 Check the themes you want to delete.
- 3 To select all custom themes, click the button  again.
- 4 Click the trash bin icon  in the upper right corner.

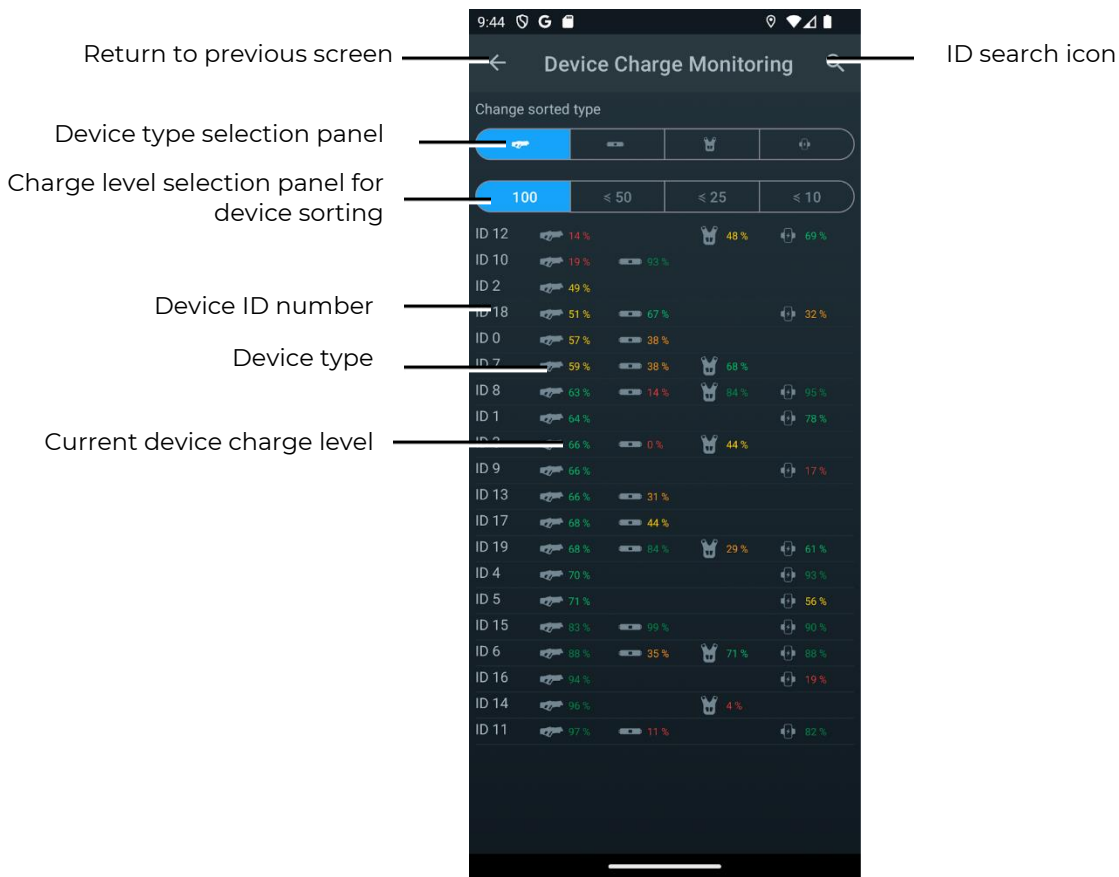


1.3.1.6. Tab "Device Charge Monitoring"

This tab becomes relevant after the game kits are connected to the same local network to which the mobile device is connected. It is not necessary to assign them to teams on the "Lobby" tab.


This tab displays all devices, categorized by type (tag, headband, vest, shock bracelet).

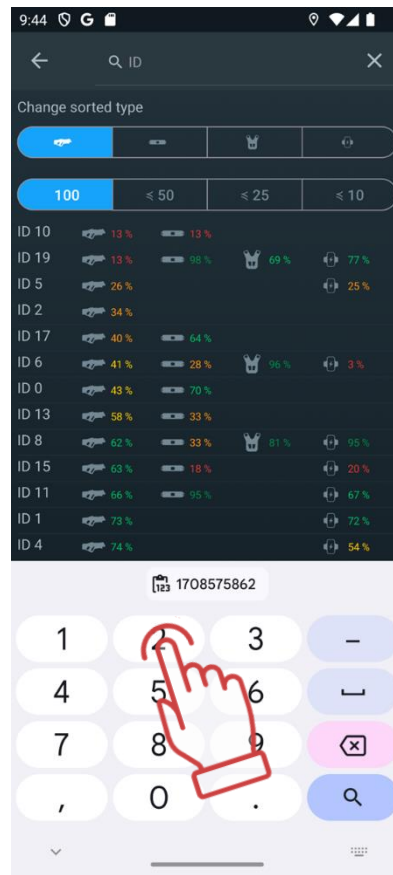
It provides options to sort devices by type and charge level, as well as filter by ID number.



1.3.1.6.1. Filtering by ID

To search for a device by ID:





- 1) Click on the search icon  in the upper right corner of the screen.
- 2) An input field for the device ID number opens, where you need to enter the numeric value using the on-screen keyboard.
- 3) If the device ID number is entered correctly, information about the device and any associated devices with their charge levels will be displayed.
- 4) If the device is not found, the list will remain empty.



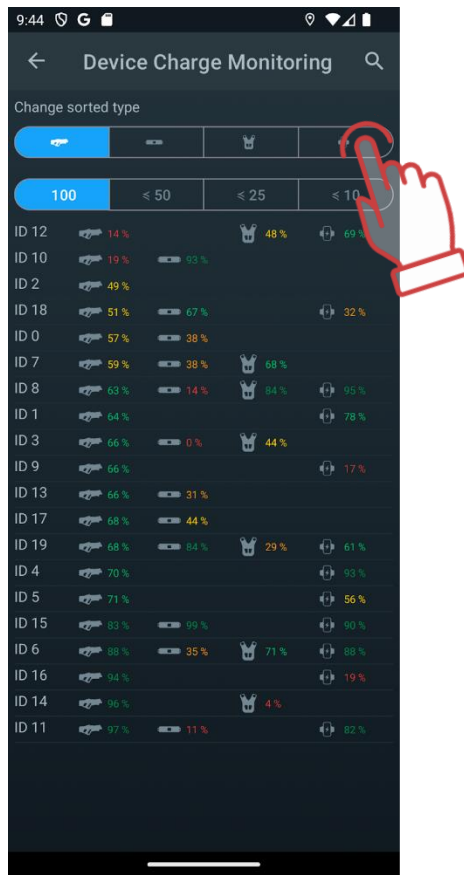
Clicking the icon  clears the entered text, and clicking the icon  hides the keyboard and removes the focus from the input field.

1.3.1.6.2. Sorting Devices by Type

By default, the type “Tager” is selected. To change the device type for sorting, select the icon corresponding to the desired device type in the “Change Sorting Type” section:

-  – to select sorting by tagers;
-  – to select sorting by headbands;
-  – to select sorting by vests;
-  – to select sorting by shock bracelets.

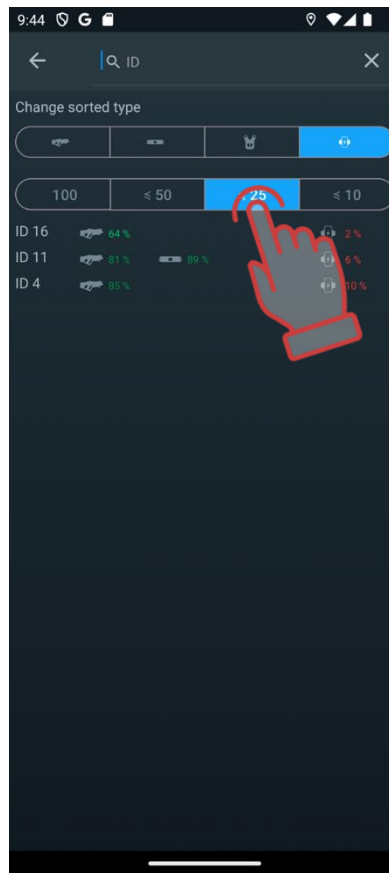
When changing the sorting type, the list updates, and devices are sorted by increasing charge level for the selected type.



1.3.1.6.3. Sorting Devices by Charge Level

To filter devices by their charge level, four levels are provided: 100, ≤ 50, ≤ 25, ≤ 10.

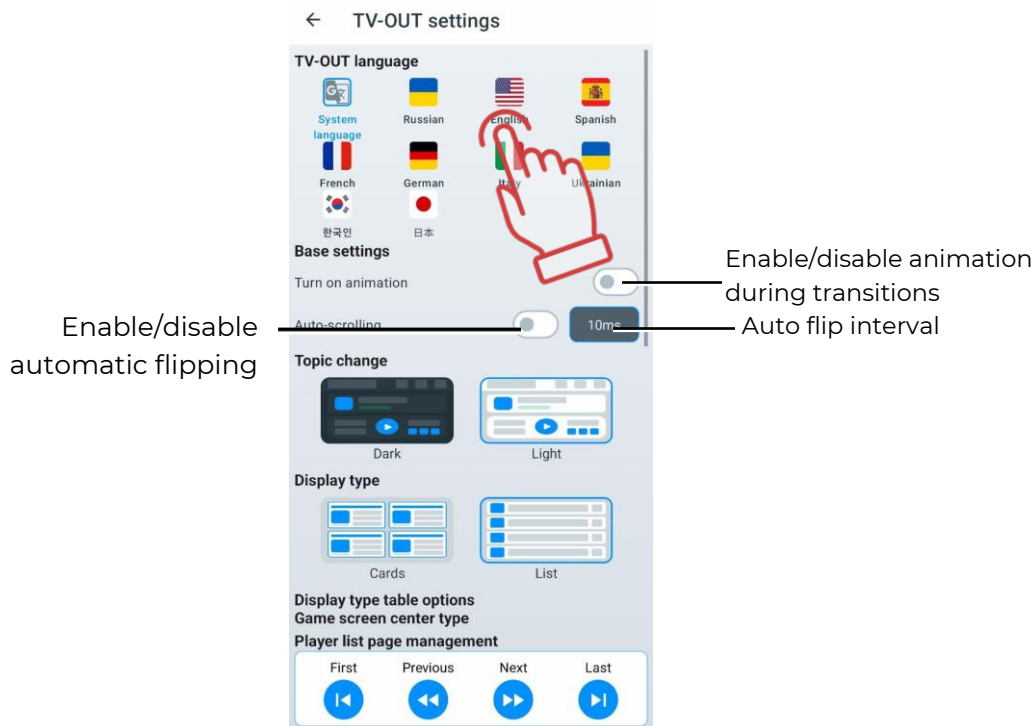
Clicking on the icon for the desired level automatically updates the list of devices to display only those that match the selected charge level.



1.3.1.7. Tv-Out settings

The Tv-Out Settings item contains settings for broadcasting live and post-game statistics on a TV screen or projector outside the game area, and allows you:

- during a game round, control individual statistics of players, mode and status of additional devices;
- to involve players who are waiting for their turn and their supporters in the game process by monitoring the operational changes in statistics;
- to provide each player with the opportunity to evaluate their performance and the team's achievements immediately after the game;
- to use as one of the advertising elements to attract new visitors.




TV OUT language allows you to change the language displayed on the external screen. To select a language, briefly click on the language icon.

System language is the language set as the main language in the user's device. If desired, the user can select another available language from the list provided in LTO, and the client will automatically see the interface in English if their system language is not in the list.

In the "Base settings" submenu, there is an option to enable or disable animations when switching event screens.

Below is the player navigation settings menu, which works for the "List view" display mode. If more than 10 players participate in the game, it is possible to display the results of all players alternately on the screen by switching pages with automatic flipping.

Automatic flipping can be enabled by moving the toggle switch  to the active position. After that, you can set the flipping interval from 2 to 60 ms (default – 10 ms).

Manual flipping is performed through the "Player list page management" menu fixed at the bottom of the screen. In manual flipping mode, you can navigate to the first, last, previous, and next pages of the player list.

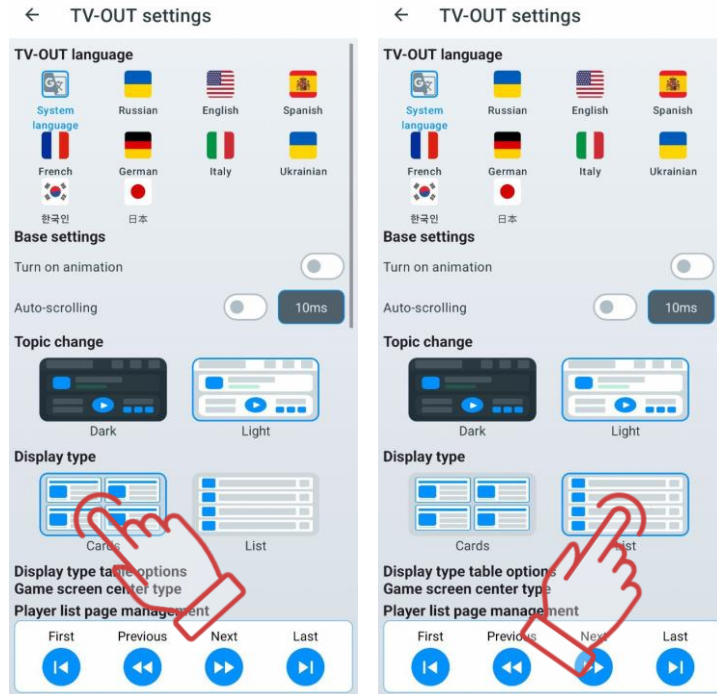


During the game, the list is dynamic, with players with the highest scores displayed at the top. During a pause, the most productive players up to the moment of the pause are displayed at the top of the list.

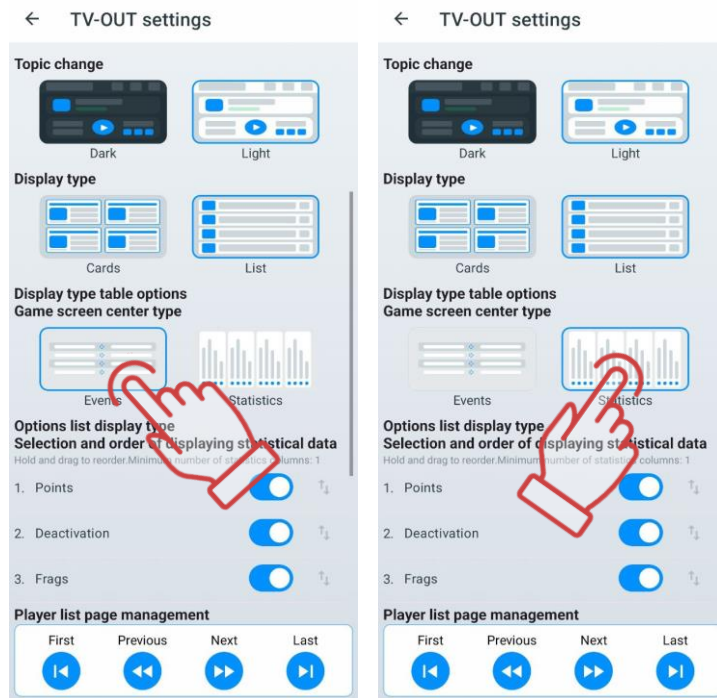
Topic change – changing the theme. You can apply a light or dark theme.


Display type – changing the way player game statistics are displayed. You can choose to display it as a list of players or as a table.

During the game, the list is dynamic, with players with the highest scores displayed at the top. During a pause, the most productive players up to the moment of the pause are displayed at the top of the list.



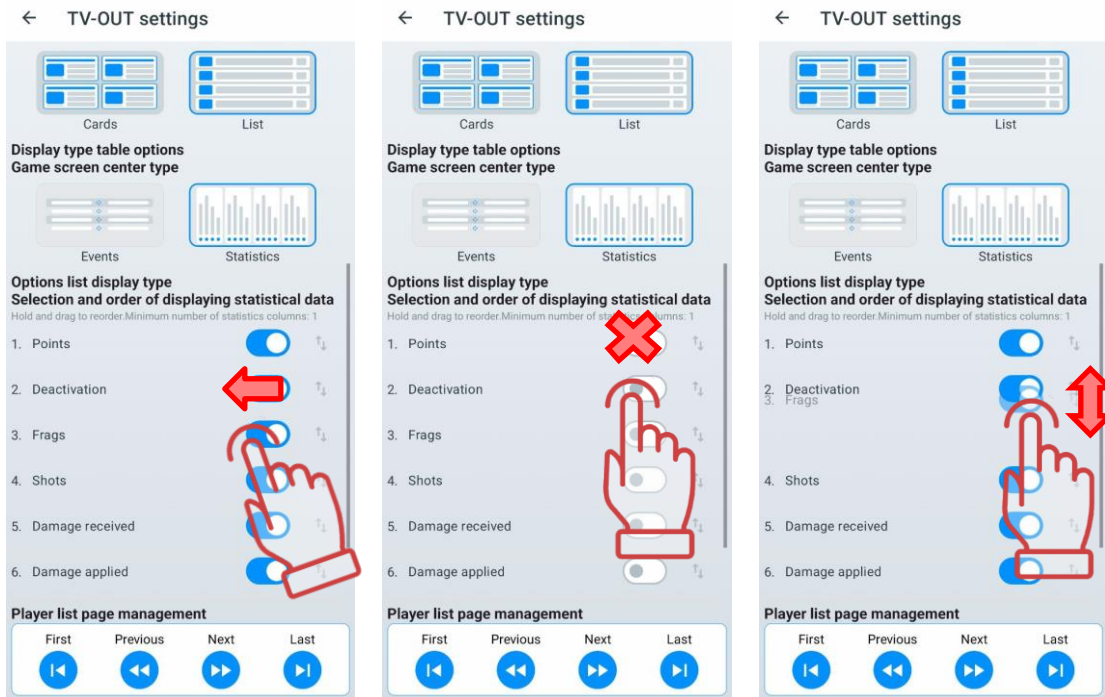
The next setting applies only to the table display type and provides two options for displaying events in the center of the screen – events (logs) and statistics.



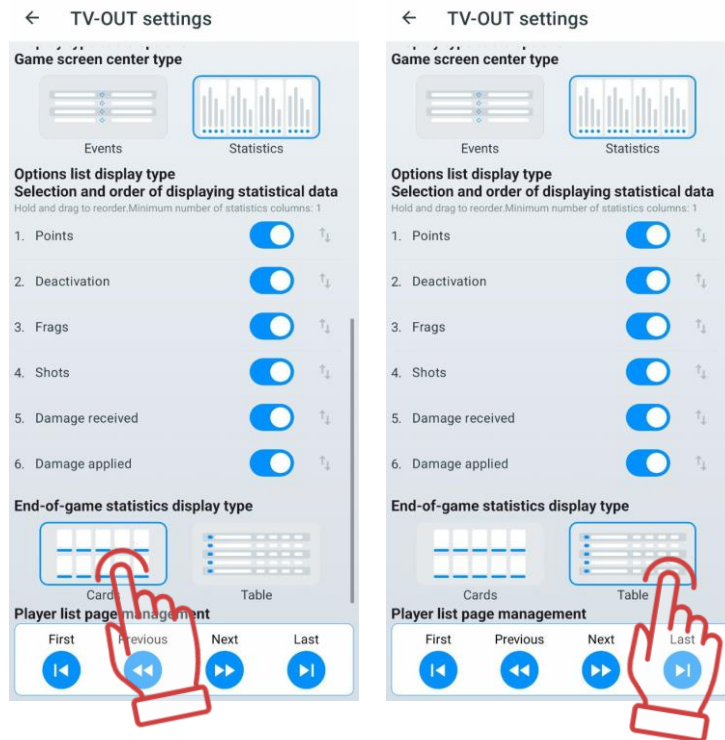
Another setting is available for the event list display option and allows enabling/disabling certain parameters displayed in the list, as well as changing the order of parameters. Parameters can be toggled on or off with a switch . By default, all parameters are enabled.

At least one parameter must be enabled in the final settings. Disabling the last remaining parameter is blocked by the program.

The order of display is changed by "dragging" parameters in the list.



The final setting in this menu allows selecting how statistics are displayed on the screen at the end of the game – as cards (standard) or as a table (identical to the list display type during the game).



1.3.1.8. Connections

The Connections item provides information about your connections - network name, router IP address, and mobile device IP address.

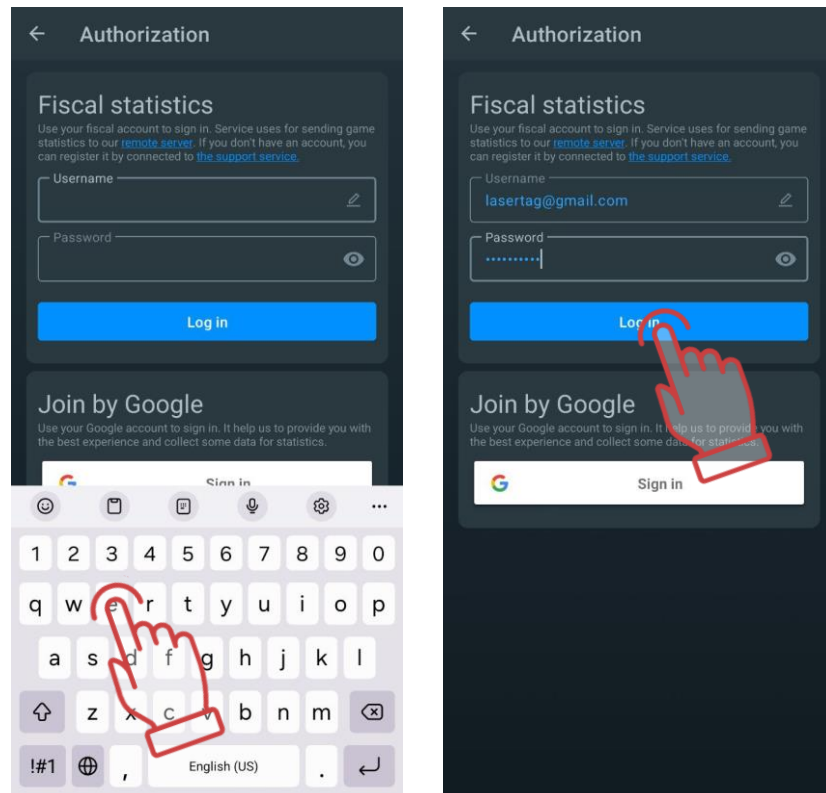
1.3.1.9. Authorization

When you enter your personal area, you can register via the LTO mobile app or sign in with your Google account.

Also, the user may not need to log in to use the mobile application. However, if you do not log in, you will not be able to save your personal LTO settings in cloud storage Firebase, and if you reinstall the application, you will lose all previously saved personalised settings (created scenarios and presets, saved files and statistics of past games).

Firebase acts as a file store. Firebase storage provides reliable file uploads and downloads for the application. Cloud storage of video, audio or any other type of file is supported by Google Cloud Storage.

1.3.1.9.1. Access to the fiscal statistics server

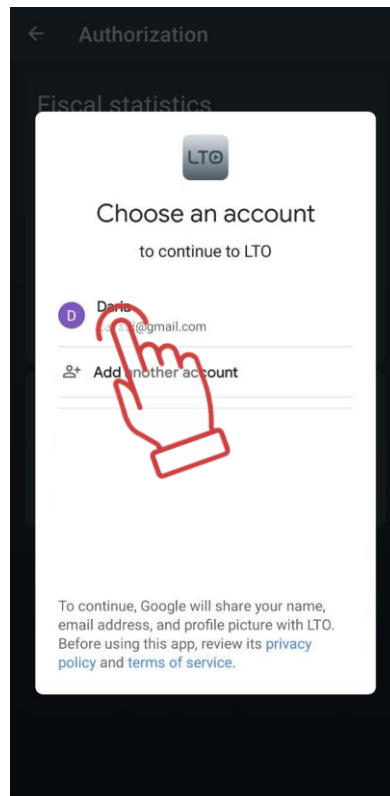
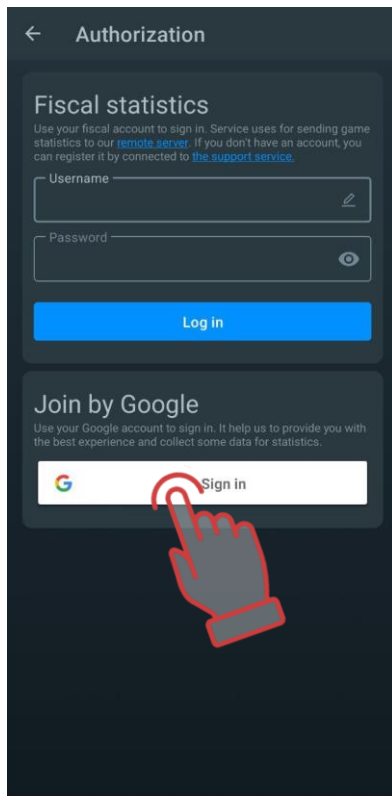


For authorization to send fiscal statistics to the server, it is necessary to use login and password provided by the technical support service of the company.

1.3.1.9.2. Authorisation with a Google account

The current version of the application now has an option for authorizing the application via Google account.

To sign in, click the Sign In button with the Google icon in the main menu at the bottom of the screen, select your account and sign in.



1.3.1.10. Update app

This item allows you to search for updates for the application and, if found, download and install them.

1.3.1.11. Policy

The Policy item contains information on how personal data is collected, used, processed and protected when using the application.

1.3.1.12. Manual

When you click the "Manual" button, the webpage <https://lasertag.net/support/manuals/outdoor> opens, where you can download user manuals for laser tag equipment in PDF format. These files are automatically saved in LTO under the "Settings" menu => "File Explorer" in the "Manuals" section.



1.3.1.13. Help

This item displays a feedback form where you can leave your feedback about the application, as well as questions and suggestions for improving its functionality.

1.3.2. Scenarios tab

The Lasertag Operator software has a number of ready-made scenarios that have been tested in real-world conditions. Based on one of these built-in scenarios, you can create your own and customise it according to the size of the venue, number and composition of players, etc.

Clicking Scenarios in the tab bar opens the Scenarios list window with the following tabs:


- Default: This tab contains built-in scripts that are ready to use without additional settings;
- Custom: In this tab, the user can create their own scenarios, customised to their own needs;

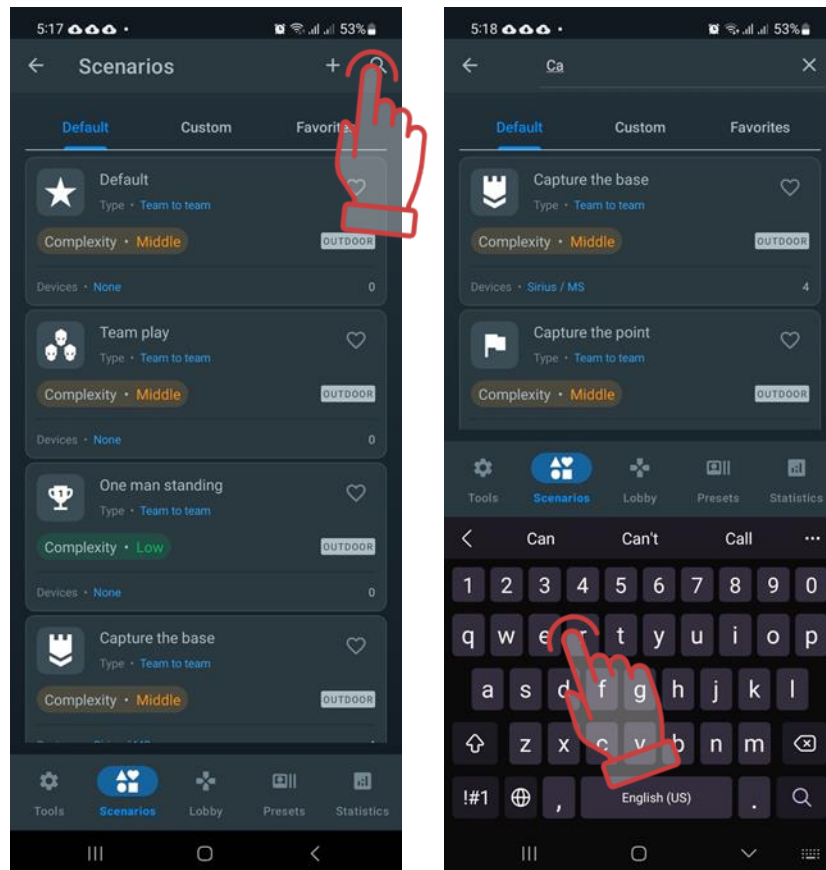
- Favorites: This tab stores the scripts that the user has added to their Favourites for quick access.

1.3.2.1. Default

Clicking on a scenario tile will display information about that scenario, including the difficulty level and a brief description.

Each of the scenarios has its own settings, and these will be different for each scenario.

To speed up finding the scenario you want, you can click on the search icon  in the top right-hand corner of the screen and type the first few letters of the name on the keyboard that appears. Scenarios beginning with these letters will appear. Press and hold the desired tile to apply the selected scenario.



Built-in scenarios cannot be edited or deleted, but you can create your own scenarios based on them.

1.3.2.1.1. Description of built-in scenarios

The current version of the Lasertag Operator software comes with 16 ready-made scenarios:

- The default scenario is based on basic settings. The default settings for this scenario are good for beginners or for starting warm-up - there are two teams playing in it, there are no additional devices and there is no condition for completing the scenario. The deactivated player is restored after 5 seconds.

Points are awarded (one at a time) for hitting a player or for deactivating him after 4 hits.

The game ends on a timer, and the team whose player reaches a maximum of 100 points wins.

- Team play primarily involves confrontation between several teams. There are also no additional devices, but a condition for the completion of the scenario - ONE TEAM LEFT has been added. Players have 100 health units, for each hit of the opponent, 25 units are removed, and there is no possibility of respawn. I.e. to deactivate a player, you need to hit him 4 times. The deactivated player leaves the site.

The goal of the game is to hit as many opponents of the opposing team as possible. The team with at least one player left wins.

If not, the game is stopped by the timer and the winner is determined by points.

The points gained are taken into account, firstly, at the end of the game by the timer (if the end of the game is not met), secondly, for assigning nominations to the players at the end of the round, and thirdly, for accounting in multi-round games. To make the scenario more complicated and therefore longer, you can enable regeneration for the players.

With the set regeneration interval equal to 1 (i.e. every second), the regeneration in 2 health units, and the regeneration delay in 5 seconds, the player has the opportunity, hiding behind a shelter, to fully restore his health units in a certain time.

- The tactics in this game correspond to the name of the scenario: One man standing. All players on the same team are red. "Friendly fire" enabled - so players of the same team can hit each other. Each player has 200 health units, after each hit, 25 is taken away. In the conditions of completion - ONLY ONE REMAINS, that is, the last survivor wins. For each hit, the player receives one point, and this indicator will be taken into account in the distribution of nominations at the end of the game.

This scenario is well suited for warm-up, for beginners - it will allow you to get acquainted with the ground, learn how to handle the game weapon, hide behind shelters, etc. This scenario is also suitable for a small number of players. In addition, this scenario is recommended for young children who may not always appreciate the need for team tactics.

As a development of this scenario, you can use the following option: disable the condition for completing the scenario ONLY ONE REMAINS, but enable the condition PERSONAL POINTS LIMIT with the current limit for this ground and the given number of players (up to 400). Then the player with the maximum number of points will receive the victory - the game will end either by the timer or when it reaches the specified value. For a change, you can conditionally recruit players to different teams, but include "Friendly fire", because team statistics will not be counted.

- The scenario Capture base involves the capture of the opponent team's base by shots. By default, 2 SIRIUS are used in the game, for which the "Base" mode is selected. Both devices for red and blue teams have the same settings: every 5 seconds they respawn the players of their team and, with the same frequency, affect the opponent players with radiation with damage of 30 points. SIRIUSes are installed on opposite sides of the ground - on the bases of both teams. Devices each have 100 health units, i.e. with 25 weapon damage, to capture a foreign base, you need to hit it 4 times, and not necessarily by one player. A condition for the completion of the "Base captured" scenario has been added to the scenario. This condition has its own setting, that is, the number of captures. In the default scenario, this value is 5, which means that the game stops after five captures. Accordingly, points are awarded only for hitting and deactivating players of the opposite team (1 each).

For each hit in SIRIUS 10 points are awarded.

The basic settings of the kits are standard, the same for all teams. Since under certain conditions it is possible that none of the teams can capture the opponent's

base, it is recommended to limit the round in time. Then the winning team is determined by the points scored.

Further development of the scenario may consist in increasing the number of captures to determine the winner. In this case, after capturing, SIRIUS will be deactivated, but after 30 seconds it will be automatically restored. With a value, for example, 3, after the third capture of any base, the game stops.

This scenario can be played by three or four teams, accordingly, adding SIRIUS. In addition, Multistation can also be a Base.

- The Domination Box capture scenario basically has a similar principle, only the Domination Box is used as an additional device. The main task for the teams is to capture it with shots and hold it for a total of 5 minutes. The Domination box in this case works in the "Timed capture" mode. The degree of capture can be controlled by the LED scale on the device itself. When the player hits the DB for the first time, the timer of his team starts and the lower LED starts to glow with the color of his team. If there is no recapture by another team, after about 20 seconds (300/16) the second LED lights up and so on until the entire scale is filled. If another team captures the box, then the timer of this team is turned on and the scale shows its time.

To respawn deactivated players, the scenario uses two SIRIUS devices located at the team bases and configured for the RESPAWN mode. These devices restore the starting values of health and ammunition to the players of their team every 5 seconds.

In the scenario, the condition of the end of the game is chosen - LIMIT OF DOMINATION BOX CAPTURE. The condition also can be set, and in this case it has the value 1. Therefore, when the Domination box scale is completely filled with the color of one of the teams, the game stops. This team is declared the winner.

One of the options for changing the scenario would be to disable the USED ONCE PER GAME switch in the Domination box settings. If, at the same time, the condition of the end of the game is removed in the scenario, then after holding one of the teams, after 5 seconds the timers are reset and the game resumes. It is also necessary to set the accrual of points for the capture - then after the end of the round, the winner will be determined by points.

- Kids mode is designed for children and beginners. Here, by default, auto-respawn is enabled, which is triggered 5 seconds after deactivation, as well as auto-reload and endless magazines. Headband vibration is disabled, hitting the weapon is also not counted. The scenario does not involve the use of additional devices and termination conditions. The rest of the parameters are configured by default, including 100 health and damage 25. This scenario is easy for both the players and the instructor. The game is downloaded on a timer and at the end of the game, players can receive printed sheets with comic nominations depending on the points scored or the actions performed in the game.

It is necessary to adjust the scenario depending on the game situation. For example, if a round turns into a pointless firefight, you can increase the auto-respawn time or enable such a parameter as weapon damage - DEACTIVATE. In the latter case, it is necessary to set the period during which the weapon will be inactive after the opponent's beam hits it (0-100 sec).

- The Battle royale scenario involves playing in an ever-shrinking zone over time. The principle of zone narrowing is implemented using RSSI control (the level of the received Wi-Fi signal from the router). At set intervals, a player, whose game kit has RSSI less than the value defined in the scenario, "bleeding" starts - a constant decrease in health units. To stop this process, the player needs to get closer to the router by going to the next zone.

The last survivor wins. As a result, the players during the game need not only to try to hit the opponents, but also to monitor the virtual change in the playground configuration.

Conventionally, the zones are circles of various diameters with a router in the center. But it must be taken into account that the Wi-Fi signal coverage can be heterogeneous and largely depend on the geometry of the playground, the presence of natural or artificial obstacles.

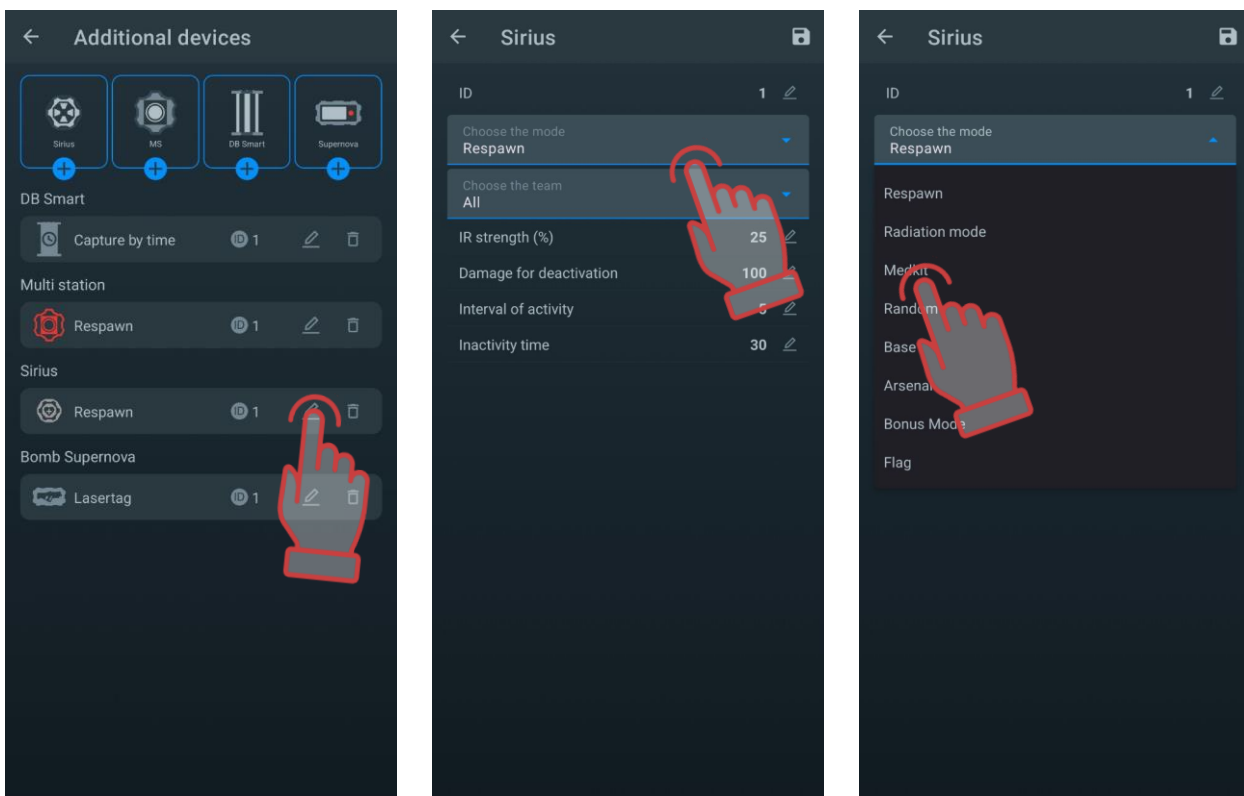
For each zone in the application, its own RSSI level is selected (from 0 - to 100 dbm) and the time spent inside the zone when it is safe to be there. When the time spent inside a certain zone is running short, the kits give an audible signal that it is time to move on to the next zone. The player is given time (10 seconds set) to move to an area with a higher signal level from the router.

There are three zones in the firmware - Zone 0 with an RSSI limit of -60, zone 1 with a range of 0...-40 and zone 2 with values 0...-20. The time spent in each of the zones is 5 minutes. The third zone is located very close to the router, and it has no time limit - all players in this zone will have "bleeding", and if several players remain on the playground, the winner will be the one who runs out of health units later than others.

By default, friendly fire is turned on (players, regardless of the color of the kit, hit each other), the player has 100 health units, damage is 25%, autorespawn is disabled. Ammunition is limited - 10 clips of 30 rounds.

The scenario can be greatly complicated and varied. For example, you can make it for a team, i.e. set the condition ONE TEAM LEFT. This option is more suitable for a game with quite large number of players - divide it, for example, into 4 small teams. In this case, players will be able to work out team interaction.

The next scenario may be the use of additional devices, in particular SIRIUS stations. By configuring the devices for the Arsenal mode, placing them at the edges of the playing area and making the minimal starting ammo for players, you can radically change the tactics of players. Now, in addition to everything else, they will have to "get cartridges" in order to deactivate their opponents later.



Depending on the size and configuration of the site, it may be necessary to adjust the parameters of the zones. You can do it in the setting for the end condition of the Battle Royale game, which has an advanced setting (see 1.3.2.2.3).

- The Warm Up scenario is another lite version of game for younger players and beginners. The game includes auto-respawn of players for 5 seconds, auto-reloading and endless magazines. The second hand sensor is turned off. The kit settings are standard, they are the same for both teams. There is no scenario termination condition. The game ends on a timer. The team that scores the highest number of rating points wins.
- Objective of the CTF scenario: Capture all flags - capture the enemy flags. The basic principles of these scenarios are as follows:
 - The flags are generated by SIRIUS stations, which are installed either at the team bases or in separate sections of the playground.
 - To capture the flag, it is necessary to shoot from the tagger several times in the SIRIUS of the alien team at close range until the sound confirmation of the capture is received - "The flag is captured".
 - At this point, the player becomes the Flag Bearer - the headband LEDs glow alternately purple and the color of his team.
 - When the flag is fetched to his base, the player who still has health units must surrender the flag - shoot at his team's SIRIUS also until the confirmation "Flag accepted" is received.

You can bring flags back to your base for extra points, but this is not a requirement. If you do not remove the flag, you will not be able to capture the next flag.

The scenario uses 2 SIRIUS in the FLAG mode and 2 more - in the Respawn mode. The number of flags in the SIRIUS settings is 5, the time for generating a new flag after capture is 30 seconds. SIRIUS stations working in Respawn mode issue a command to respawn their players with an interval of 5 seconds.

The condition for the end of the game - CTF: CAPTURE THE FLAGS.

The kit settings are standard.

For capturing the flag, 10 points are awarded, for fetching it to your base - another 10. For hitting and deactivating an opponent - one point each.

The game ends when 5 flags are captured from the opponent, or by timer. In the latter case, the winner is determined by points.

- In the scenario "CTF: Deliver the required number of flags", 3 SIRIUS stations are used in the "Flag" mode. One flag is set on the bases of the red and blue teams, the third, set to the color of the non-playing team, in this case yellow, is in the center of the playground. All devices can generate 255 flags with a recovery time of 30 seconds after capturing. The only difference is that the SIRIUS on the bases respawn the players of their team every 15 seconds. Scenario completion condition CTF: DELIVER THE REQUIRED NUMBER OF FLAGS. The condition has a setting - in this case, the value is 10. The main task in the game is to capture and be sure to deliver 10 flags to your base. You can take flags either at the opponent's base or at a neutral base. Points are awarded for capturing and delivering the flag - 10 each, and for hitting and deactivating an opponent - 1 each. The kit settings are standard, they are the same for both teams.
- In the scenario "CTF: Race against time", the condition for the end of the game is set: CTF: RACE AGAINST TIME. Also, as in the previous scenario, 3 SIRIUS stations are involved in the FLAG mode - two for the blue and red teams with the respawn

function and one, configured for the yellow non-playing team, only generating flags for any of the teams participating in the game. The number of flags for each device is 255, the recovery time for the flag is 30 seconds, the period between the respawn of the players is 15 seconds.

In fact, the task of teams is to fetch the maximum number of flags from the opponent's base or from the central SIRIUS in a fixed time (it is recommended to set 15 minutes). Which team fetched the most flags is the winner.

The kit settings are standard, they are the same for both teams.

Points are awarded only for the fetched flag (10) and for hitting or deactivating an opponent (1 each). Points are taken into account to determine the winner if the main indicators are equal.

For details, see "Manuals for using the "Battle Royale" scenario in laser tag games", "Manuals for using the "Capture the Flag" scenario in laser tag games" (<https://lasertag.net/support/manuals/outdoor>).



- CTF: Capture all Profi flags - to win, you need to capture 5 opponent flags, but SIRIUS only 2 and they are located at the teams' bases. The devices simultaneously generate flags and respawn their deactivated players every 50 seconds. The increased pause between respawns gives more chances for the players of another team to capture the flag at the opponent's base. Flag recovery time has been reduced to 10 seconds, it makes the game more active and dynamic. The conditions for completing the game and setting up sets are similar to the Capture All Flags scenario. For capturing the flag and for fetching it to your base, 10 points are awarded. For hitting and deactivating an opponent - one point each.

The game ends when 5 flags are captured from the opponent, or by timer. In the latter case, the winner is determined by points.

- With the advent of SUPERNOVA bombs in the line of additional devices produced by the company, it became possible to implement in laser tag the "Bomb/Defuse" scenario from the computer game Half-Life: Counter-Strike. As in CS, in the "CS: Bomb has been Planted" scenario, a team of miners (by default it is a red team) must plant a bomb on one of two platforms located in different places of the playing area and activate it within the round. The task of the sapper team (blue team) is to prevent the planting, and if it was not done, to clear the bomb.

This scenario is set up as close as possible to its computer original:

- both teams have the same settings (100 health points, 25 weapon damage, unlimited cartridges);
- the one of the additional devices used is only the Supernova laser tag bomb;
- bomb planting time - 3 s (not adjustable);
- clockwork timer - 1 minute (can be increased up to 10 minutes);
- clearance time - 10 s (can be increased up to 60 s).
- there is no respawn and treatment - the affected players leave the playing area;
- points for hitting an opponent are not counted.

The round time is set to the maximum (60 minutes), but since there is no respawn or treatment of players, the games of this scenario usually end quite quickly.

The game ends when one of the specified conditions is met:

- "Detonate the bomb" - the team of miners wins;
- "Clear the bomb" - the sapper team wins;
- "One team left" - the team that deactivated all the opponents wins.

To use this scenario with the default settings (controlled by the Remote Control) - see Ch.5. Laser tag bomb SUPERNOVA part 2 of this manual.

- Another more complex scenario from the Counter-Strike series, CS: Detonator, shows the possibilities of setting up and controlling the SUPERNOVA lasertag bomb using an application. The differences to the CS: Bomb Set scenario are:
 - The teams have different settings, i.e. the miners start with 75 health and the engineers with 100. However, the SIRIUSes at the bases will revive the miners every 5 seconds and the sappers every 15 seconds;
 - After planting a bomb, the sappers have increased the demining time to 180 seconds;
 - Players have 2 weapons - an assault rifle and a pistol (with a reduced range).

The recommended length of a round is 15 minutes.

The game ends when one of the specified conditions is met:

- Exploded Bombs - the miner team wins;
- Deactivated bombs - the sapper team wins;
- One Team Left - the team that has deactivated all its rivals wins.

Due to the fact that players can re-enter the game after deactivation, it is possible that miners will not be able to place a bomb and start the clock until the end of the round. In this case, the Prevented Planting points in the Supernova Scoring section are triggered and the victory is awarded to the sapper team.

- The main feature of the "Red Cross" scenario is that when a player is hit he bleeds (5 health points every 5 seconds), which can only be stopped by SIRIUS operating in the "First Aid Kit" mode.

There are two teams in the game with the same settings – red and blue.

Players have 100 health points, auto-respawn in 15 seconds.

For deactivation of the opponent 5 points are awarded, for hit - one.

The main weapon is the Falcon with a large stock of ammunition, the damage is reduced to 10 points, friendly fire is on, IR power is reduced to 20%.

Each team on the base has one SIRIUS operating in the "First Aid Kit" mode, which adds 30 health points every 5 seconds. SIRIUS opponents can be deactivated with 30 shots – in this case it will be inactive for 60 seconds.

The game ends on a timer. The team that scores the highest number of points wins.

In the development of the scenario, you can remove the auto-respawn and add the condition for ending the game "One team left". In this case, players need to be careful and replenish health points in time – "killed" players leave the playground. And the game can end after all players of one of the teams are deactivated.

- «Sturm of the Portal» scenario can be used for games with quest elements. There are two teams in the game: the blue team is the Earthlings, and the green team is the Aliens. The task of the blue team is to capture the Domination Box – "Portal". According to the legend, reinforcements can come to aliens through this portal. The task of the green team is to hold the Portal until the end of the round. For completing the game mission, the winning team is awarded 100 points. The conditions for ending the game "One team left" and "Domination Box capture limit (1)" are turned on.

Team settings are different. Blue (people) have more standard: 100 health points, weapons – Falcon, damage 25.

Green have settings closer to the "Vampire" preset: 200 health points, the main weapon is the Vampire, the damage is also 25, but the rate of fire is reduced to 300 (instead of the standard 565).

Additional devices are used in the game – Domination Box in the "Capture shots" mode (200 shots to capture, radiation damage – 25 points with an interval of 5 seconds), three SIRIUSes in the "Radiation" mode (radiation damage 25 points with an interval of 5 seconds). Since the green in this scenario play in the status of vampires, they replenish health points from these devices, unlike the blue team. Earthlings can deactivate SIRIUS with 30 shots, after which the device is inactive for 60 seconds. The game also uses another SIRIUS, which restores the affected earthlings.

It is recommended that the devices on the site be located so that the Domination Box is located almost in the center of the playground, but closer to the Greens' base. Three SIRIUSes in the "Radiation" mode protect the approach to the portal from different sides, and SIRIUS in the "Respawn" mode is based at the blues'.

The blue team wins if they capture the Domination Box or if they completely deactivate the green team. The green team win if they don't allow the DB to be captured.

After the first rentals, you can find out which advantage – the ability to respawn the team of blue, or an increased number of health points and the presence of three SIRIUSes replenishing their team of green, - is more powerful, and, if necessary, adjust the number of players in teams and other parameters to ensure that the game is not unbalanced.


1.3.2.2. Custom


On this tab, you can create a new scenario or edit an existing one.

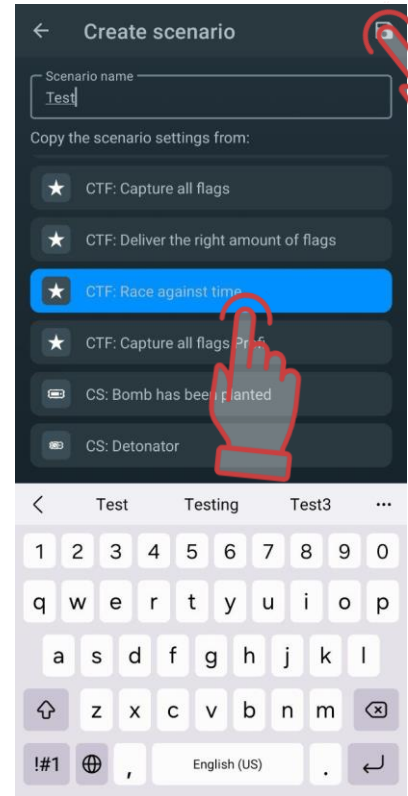
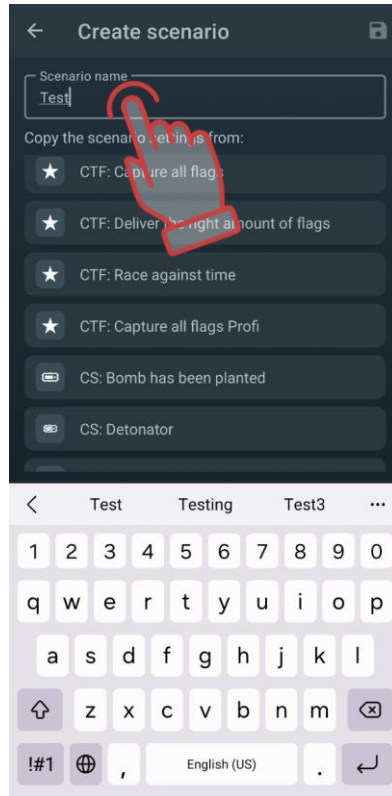
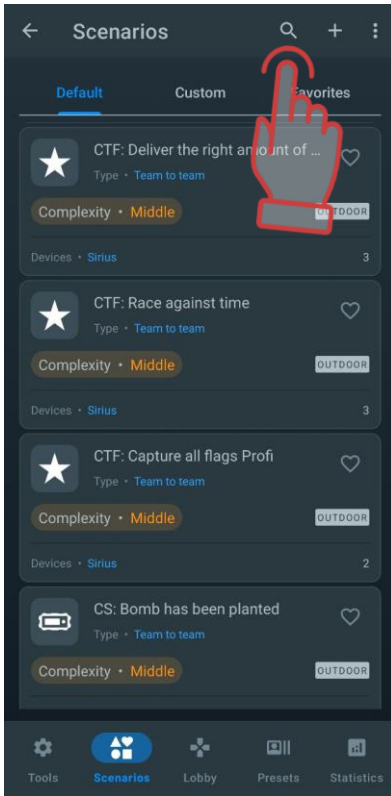
A video tutorial on how to create a custom script and add it to 'Favourites' is available via [link](#) or QR code.



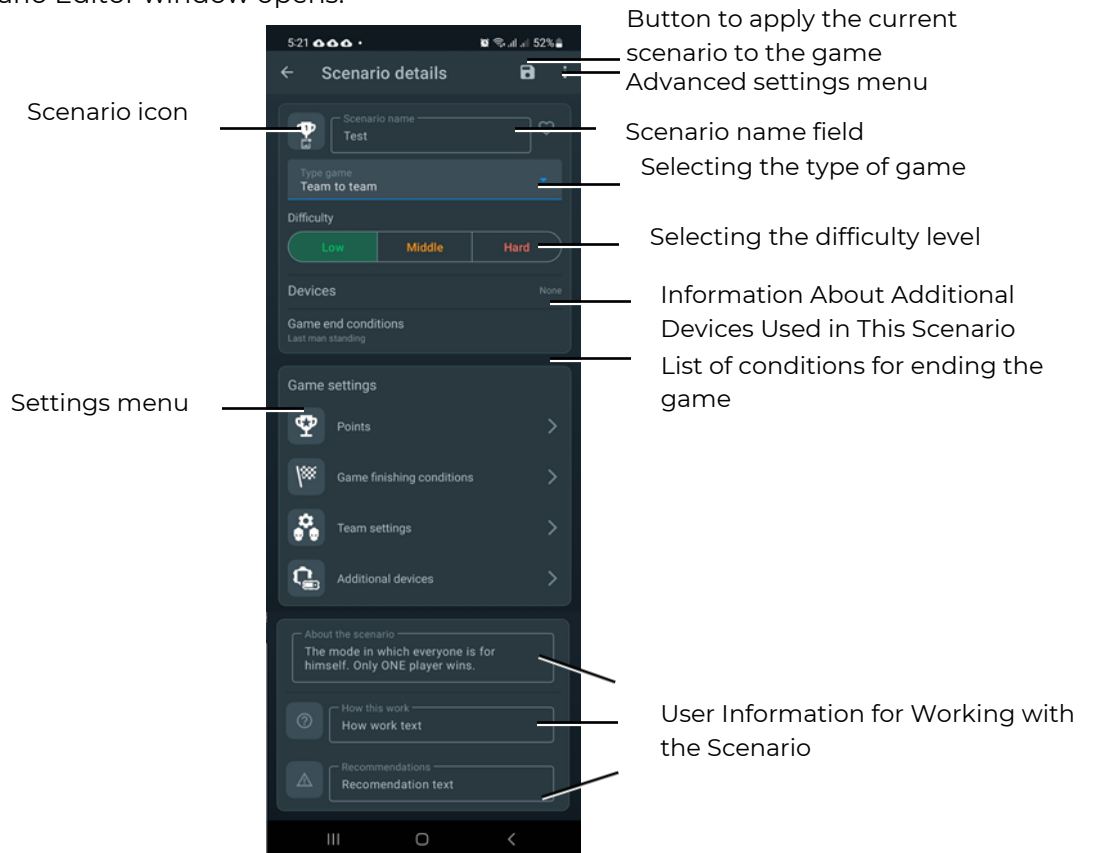
1.3.2.2.1. Create your own scenarios

To create your own scenario, click on the button  located in the upper right corner of the screen.

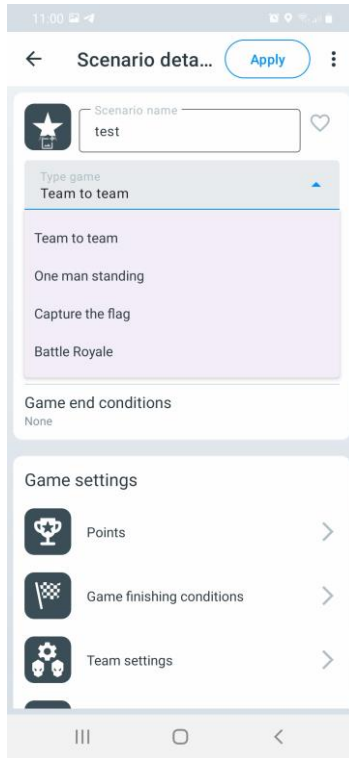
The first step is to enter the name of the new scenario and the second step is to select a template from which to create the new scenario, i.e. to copy the settings from the scenarios currently available in the software. Press the disc button  to continue.



The Scenario Editor window opens.



Here you can select the complexity of the scenario, the type of game (Team to team, one man standing, battle royal, capture the flag), a brief description of the scenario, and the necessary parameters for the equipment and the scenario itself.




The user can also change the scenario icon. To do this, click on the scenario icon and in the window that opens, select the desired icon from the suggested ones and confirm with OK.

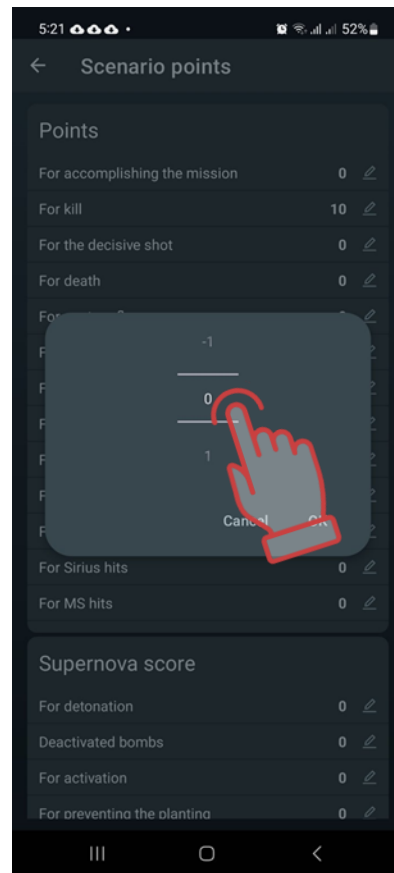
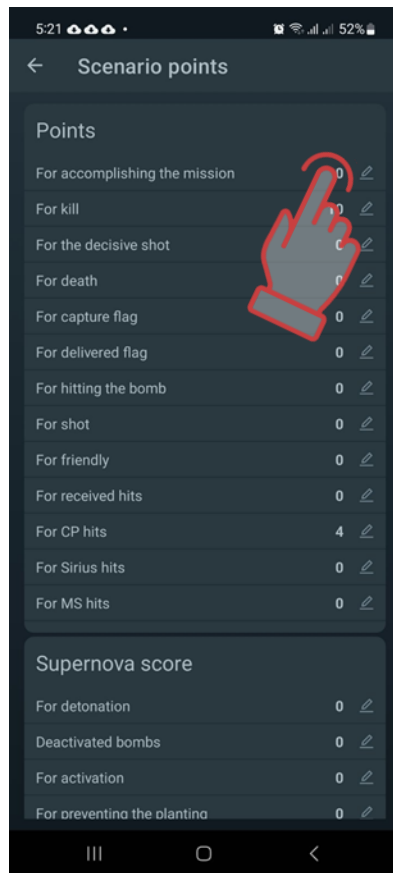
Changes are applied automatically when you exit the scenario settings.

Let's take a closer look at the Game Settings for each of the parameters.

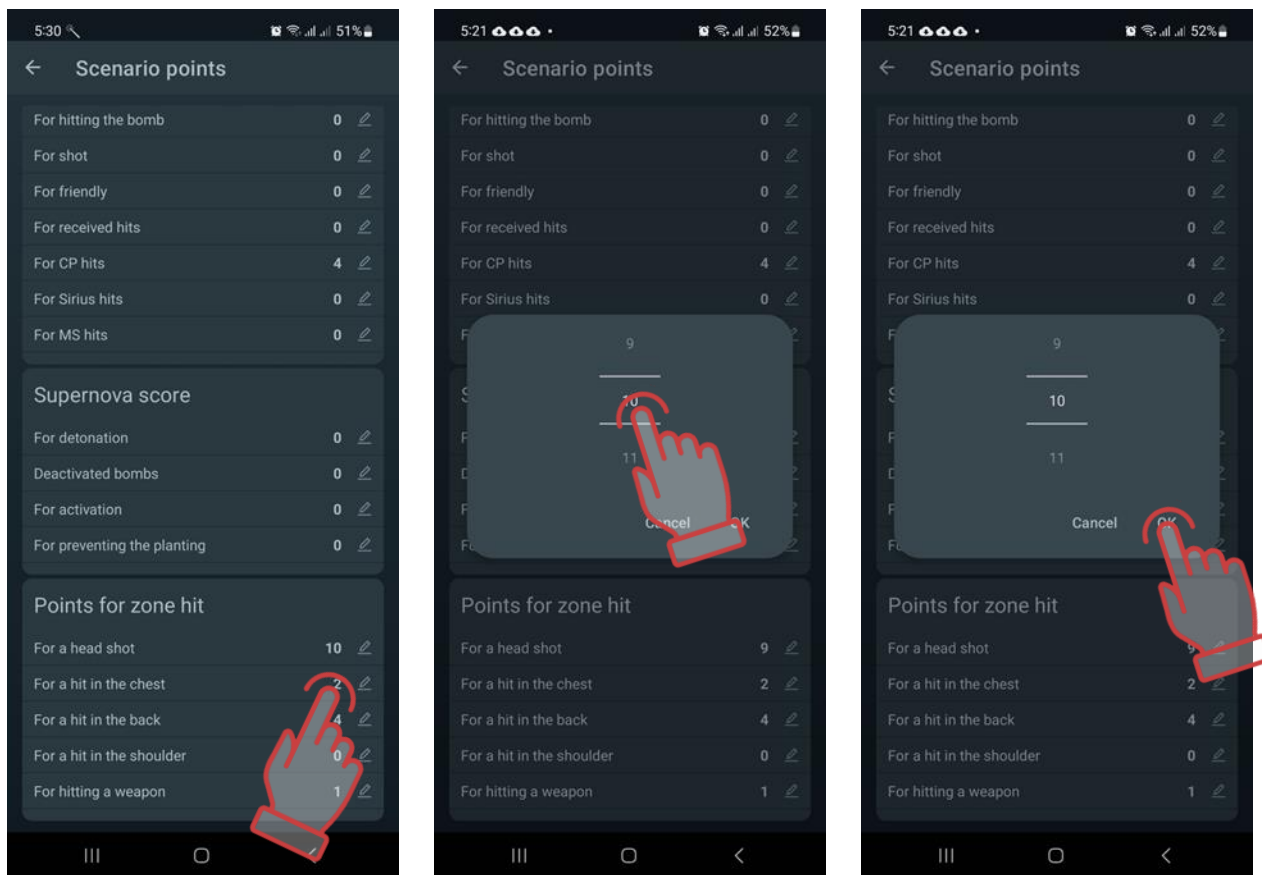
1.3.2.2.2. Points

Points: Displays the number of points awarded or deducted for various in-game events such as winning, disabling an opponent, delivering a flag, capturing a control point, etc.

The number of points is already built into the scenario selected as the basis for the new scenario. To change the numerical value, click on the pencil icon  and set the desired value in the window by scrolling vertically or using the numeric keypad (appears when you tap on the number).



If the design and equipment of the kit allows it, you can set differential damage, i.e. the number of points for hitting different zones of the kit - in the back, in the arm, head or chest. The setting is made in the section POINTS FOR ZONE HIT.




1.3.2.3. Game finishing conditions

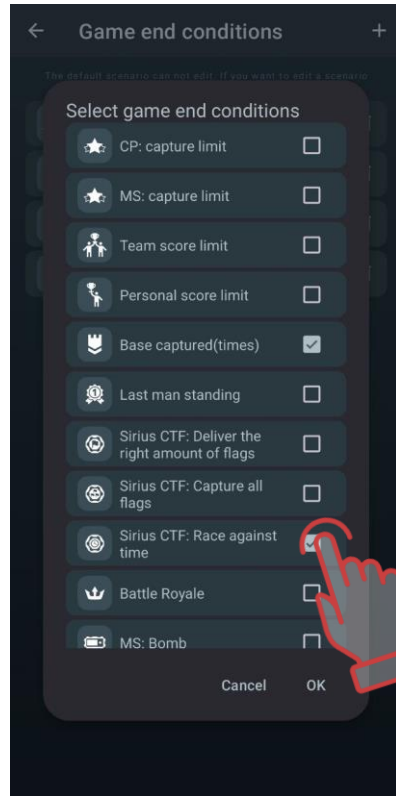
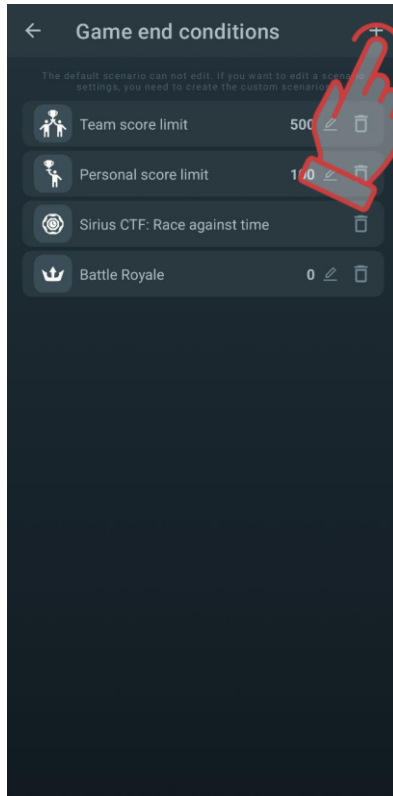
This parameter contains the conditions for the end of the game (scenario). The end conditions can already be added to the scenario selected as the basis for the new scenario.


To learn more about how to set the end of round conditions, watch the video tutorial at the [link](#) or by scanning the QR code.

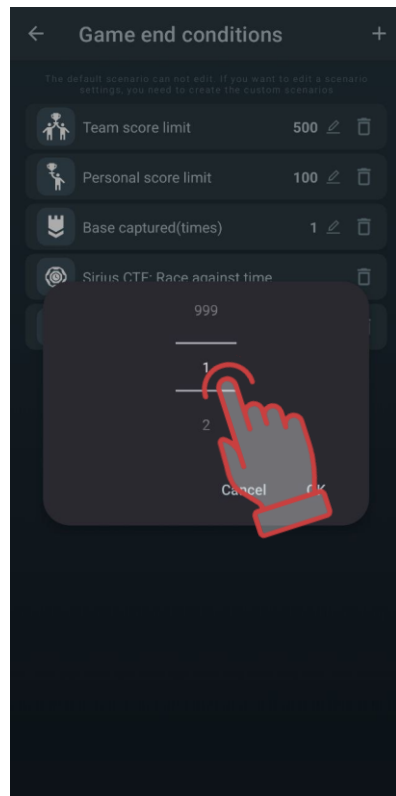
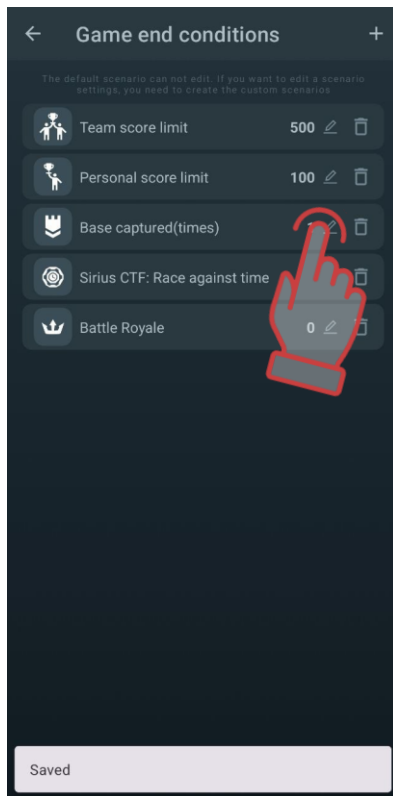


You can add a new ending condition by clicking on the plus button . A window will open allowing you to select the conditions required to complete the game. Click on the OK button to confirm.

You can select several conditions at once - then the game will end if any of the given ones are fulfilled.





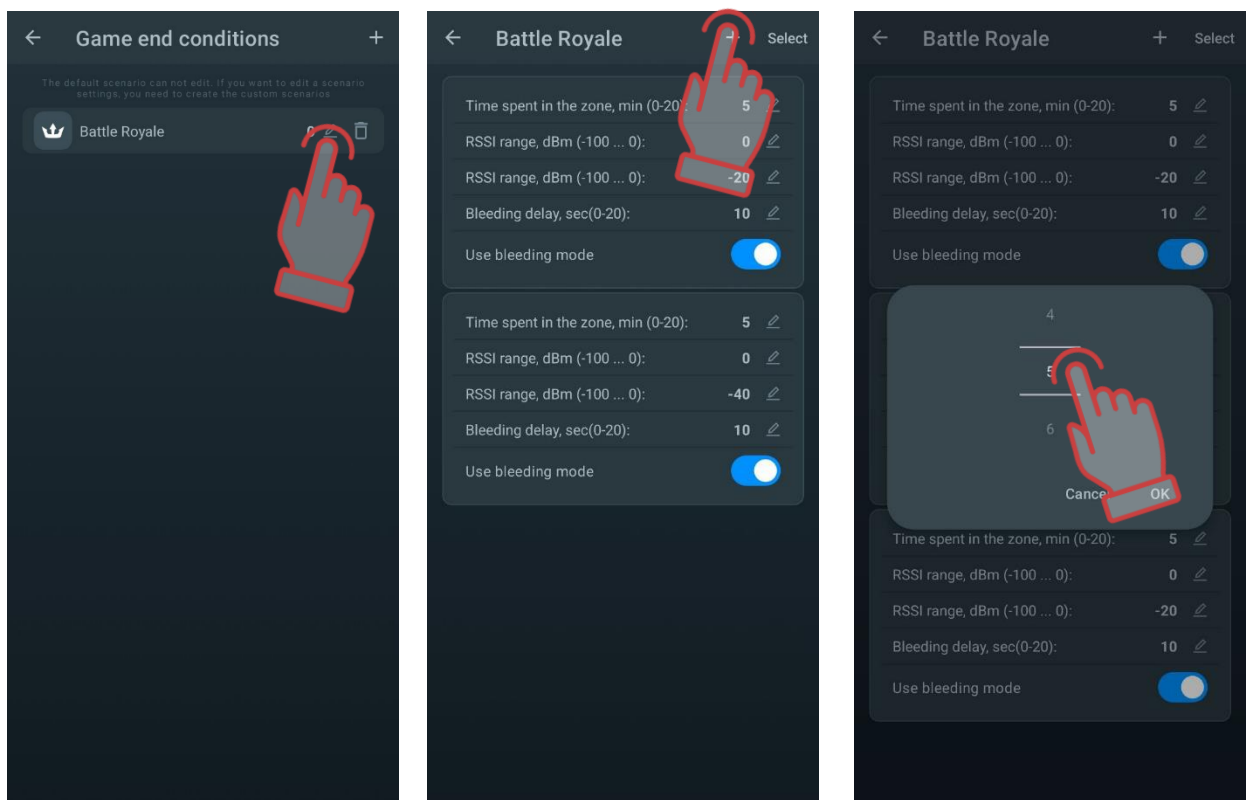
Some conditions have their own parameters, the numerical values of which are displayed to the right of the condition line and can be changed. To do this, click the button  to the right of the name and select the desired value.



The ROYALE BATTLE condition has an advanced setting. This is due to the principles of the game, borrowed from the genre of the same name of computer games: the players are minimally armed and the safe zone in which the players can be is constantly decreasing during the round. The last survivor wins.

The principle of narrowing zones is implemented through RSSI (Received Signal Strength Indication) control, which monitors the strength of the Wi-Fi signal received from the router. At specified intervals, if a player's kit has an RSSI lower than a certain value defined in the scenario, 'bleeding' occurs—a continuous decrease in health points. To stop this process, the player needs to move closer to the router.

Access to the setup mode for this round-ending condition is granted by pressing the button  on the right side of the row. To add the desired number of zones, press the plus button  in the top right corner of the screen.



Three conditions for ending the game relate to a series of CAPTURE THE FLAG (CTF) scenarios: CTF: DELEIVER THE RIGHR AMOUNT OF FLAGS, CTF: CAPTURE ALL FLAGS, and CTF: RACE AGAINST THE CLOCK.

Conditions can be removed by clicking on the trashcan button .

Press the disc button  to save the changes.


1.3.2.2.4. Team settings

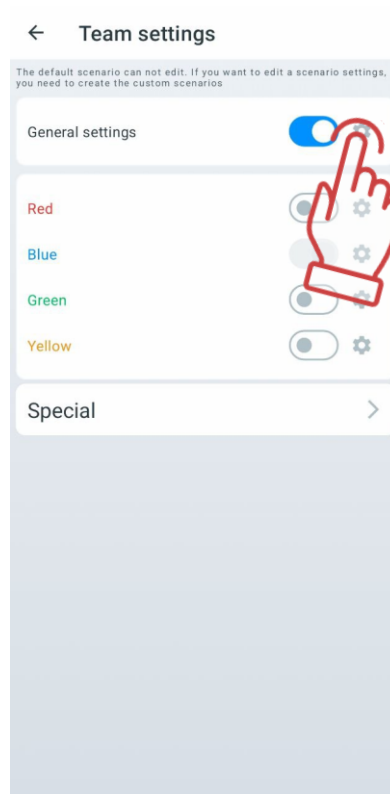
A video tutorial on the process of setting parameters for teams can be viewed in the video tutorial, which can be accessed via a [link](#) or QR code.



In a scenario, kit of players from different teams can have either the same settings or different ones. Common settings for all teams are called by touching the line GENERAL SETTINGS.

On the tab, by moving the slider to the right or simply tapping on it, you can select the number and colors of the teams involved in the scenario.

To access the General Settings menu, click the gear icon  next to its name.



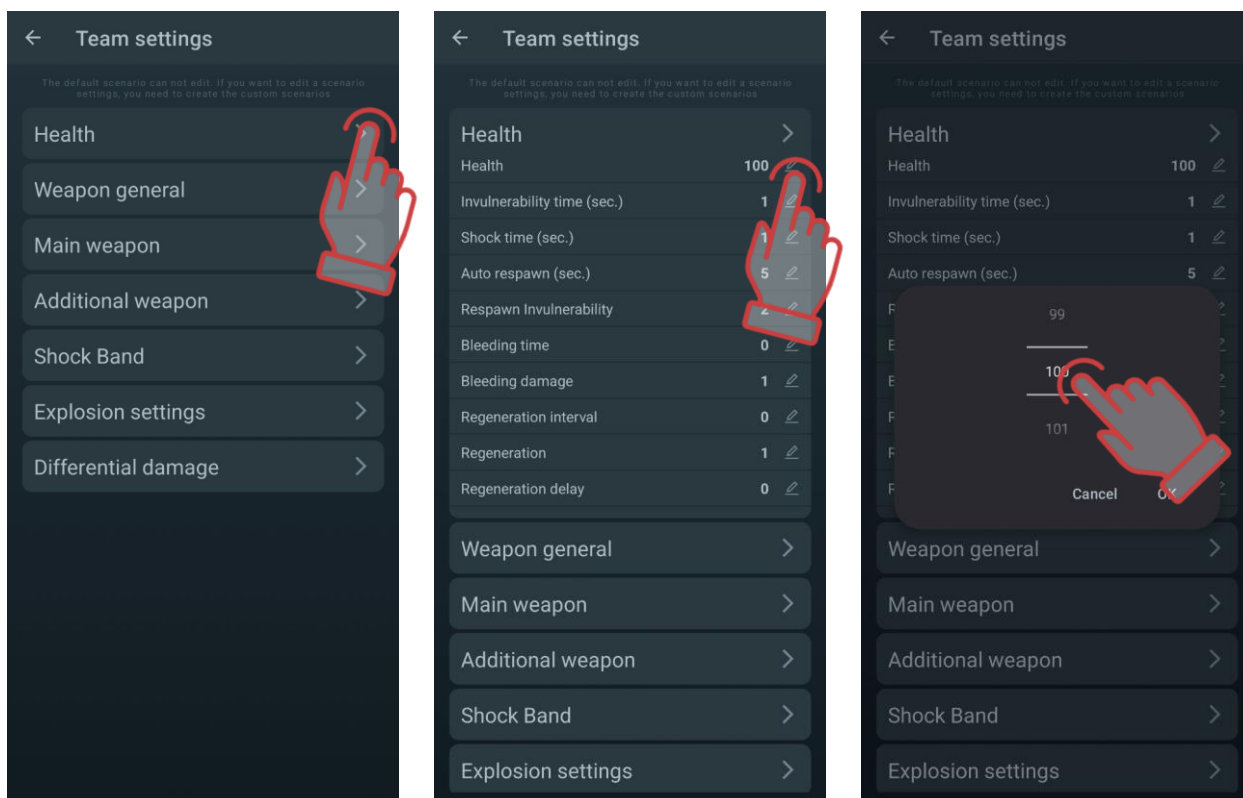
In the window that opens, you can configure over 40 kit parameters.

All of them are divided into groups: Health, Weapon General, Main Weapon, Additional Weapon, Shock Band, Explosion Settings, Differential damage.

Each tab expands into sub-tabs by clicking on the line or the arrow next to its name.

The table of configurable parameters is almost the same for general settings as well as for team or individual settings.

To change each specific parameter inside the tabs, you must click on its title - a corresponding window will appear, with the help of which either the change is made, or the switch changes its state.



To collapse a group - Click on the title bar of the group, or on the arrow in the same bar.

To exit the window, click on an arrow in the upper left corner of the window.

Below is a description of the parameters.

Section HEALTH:

- Health units - the starting amount of health units (0-999 units).
- Invulnerability time (sec) - the period during which the player cannot be damaged after being hit (0-10 sec, in increments of 0.1). In this case, the player is prevented from being deactivated by one burst of shots.
- Shock time (sec) - the period of inactivity of the weapon after the opponent's beam hits the kit (0-10 sec, in increments of 0.1).
- Auto respawn (sec) - the time after which the deactivated player automatically re-enters the game (0-254 sec, 0 - off).
- Respawn invulnerability - the time during which the kit cannot be hit after the respawn (0-100 sec). The parameter was introduced to prevent players from being "pinched" on their bases.
- Bleeding time - the frequency with which health units are taken away after exposure to the kit of the opponent's tager's beam or the Radiation command of additional devices (0-255 sec, 0-disabled).
- Bleeding damage is the number of health units taken during the bleeding period (1-100 units). I.e. with a bleeding period of 5 seconds and damage of 10, after being included in the kit, the player's health will worsen by 10 units every 5 seconds. Bleeding can be stopped only after exposure to an accessory operating in the MEDKIT mode.
- Regeneration interval - the frequency of automatic addition of health units (0-100 sec, 0-disabled).

- Regeneration - the number of health units restored during the regeneration period (1-100 units).
- Regeneration delay - delay time before the start of regeneration (0-100 sec). Thus, setting, for example, an interval of 2 seconds, a regeneration of 5 points and a delay of 10 seconds, we get the following game situation: a player, having received damage, can hide behind a shelter and after 10 seconds, 5 health units will be automatically added to him every 2 seconds.

Section WEAPON GENERAL:

- Cooldown time (sec) - the time after which the tager resumes firing after the barrel overheats (0-255 sec).
- Shots till overheat - the number of shots in a continuous burst, after which the BARREL OVERHEATING mode is activated for the tager and it stops shooting (0-255, 0 - off).
- Auto turn-off (min.) - the period after which the kit will automatically shut down in the absence of any game actions (0-100 min).
- Weapon deactivation (sec.) - the time of inactivity of the weapon after the opponent's beam hits it with the selected parameter DEFEAT WEAPON - Deactivate (0-100 sec).
- Tager`s hits - selection of the kit's reaction to the hit of the opponent's beam on the sensors of the player's tager hit (Damage/Ignore/Deactivation). When you select the DAMAGE parameter, the damage is counted in the same way as hitting the sensors of a headband or vest. If you select IGNORE, then hitting the tager is not counted. The selected parameter DEACTIVATE disables the weapon for the time set in the next parameter - DEACTIVATE WEAPON.
- Recoil - permission to use impulse recoil on the tager (yes/no).
- Side lighting - turn on/turn off side lighting on the tager (yes/no). The setting is relevant only when using the Falcon LUX tager.
- Play without headband - permission to play without a headband if hit sensors are installed on the tager (yes/no).
- Through shot - permission to activate the function of through wound, when, when hitting a headband or a vest, the sensors of these devices hit standing players behind with their IR emitters (yes/no).
- Inverse mode - turning on the inverse mode of the headband or vest indication, when the indicators are constantly lit, and when they are hit, they stop glowing (yes/no). The mode is used when playing games in the dark, or in darkened indoor areas (arenas).
- Headband vibro - permission to enable the function of vibration of the headband or vest sensors when the opponent's tager beam hits them or after receiving the RADIATION command from additional devices (yes/no). The function is turned off, as a rule, for young children.
- 3D sensor - This feature is currently unavailable and will be introduced in future LTO updates;
- Change firing mode - permission to change the firing mode of a weapon from a single shot to a fixed or endless burst and back (yes/no). The mode change is carried out by double pressing the tager recharge button with an interval of less than 1 second.
- Capacitive hand sensor - Enables/disables the second hand sensor.

- Friendly fire - permission to turn on the mode when the kit can be hit by the players of their team (yes/no). The parameter is turned on in the games of the "DEATH MATCH" series, as well as for adding spice to the gameplay of any scenario.

If Friendly Fire is enabled in the settings, all players except Zombies can deal damage to allies. If Friendly Fire is turned off in the settings, only enemies are damaged.

Section MAIN WEAPON:

- Enable - permission to use the main weapon in the kit (yes/no).
- Damage type - the type of virtual weapon that is selected when configuring the player's kit presets. (Falcon/ Automative/ Grenade/ Sniper/ Pistol/ Healing/ Rpk/ Radiation). When choosing a type of damage, the following parameters are automatically set by default for this particular type of weapon. But each of them can be changed later. Only the icon on the tager screen and the sound reproduced by the tager speaker when fired remain unchanged.

FALCON, AUTOMATIVE, SNIPER, PISTOL and RPK actually differ only in the amount of damage, rate of fire, power of the IR-beam and ammunition.

The GRENADE type (underbarrel grenade launcher) allows you to "explode the player" when, after hitting the player, the sensors of his kit, with their emitters, affect the nearby players of their team.

The type HEALING (Medkit) does not take away, but adds units of health when it hits the player. However, this does not apply to players with the ZOMBIE and VAMPIRE presets - the opposite effect is performed on them.

Starting with LTO 3.3.4, the Zombie and Vampire damage types are available in the preset settings (for more information, see 1.3.4.2.1.1).

The specificity of the damage RADIATION is that it takes away units of health from all players, and heals players in the roles of Zombies and Vampires.

! To change weapons, you must hold down the reload button for about 3 seconds until the sound signal starts to play.

- Damage - the number of health units that are taken away from the opponent's kit when the player's tager ray hits it (1-100 units).
- Reload time (sec.) - a pause during which the weapon cannot fire after pressing the reload button on the tager (0.2-25.4 sec, in 0.1 increments). As a rule, the value is set close to the reload time of real samples of small arms.
- Number of magazines - the numerical value of the number of magazines given to the player (1-255).
- Bullets in a magazine is the value of the magazine capacity at the start or after reloading (1-999). May correspond to the number of cartridges in the magazine of real weapon.
- Number of Shots in a burst - the number of shots fired by the tager after the trigger is pressed in the FIXED BURST mode (1-255).
- Fire rate - the frequency of rounds per minute, with which the tager shoots when the trigger is pressed, if the weapon provides for and automatic firing is allowed (1-999). The optimal value for small arms is 565 rounds per minute.
- IR strength (%) - the percentage of IR-radiation power when the tager shots (1-100%). The range of the shot and the active spot depend on the power. It also affects the ricochet from walls and obstacles on the playground. In sunny weather, in an open area, it is recommended to set the power of the IR-beam to a high level, when using kits in arenas, 20-40% is enough.

- Firing mode - selection of default firing mode - single shots, shot burst (short shot burst), automatic. For more information on setting the firing mode, see paragraph 1.3.2.2.4.1.
- Autoreload - permission to automatically reload the weapon magazine without pressing the corresponding tager button (yes/no). A useful feature for children's scenarios.
- Infinite magazines - a parameter that removes the limitation in the starting number of magazines with cartridges (yes/no). Most often used in games with young children who have difficulty using the recharge button.

Section ADDITIONAL WEAPON:

The parameters are similar to those in the Weapon 1 section. To use it, you must also allow it in the On parameter.

EXPLOSION SETTING section

- The explosion IR power (%) is actually the power of the IR-pulse emitted by the sensors of the headband or vest when receiving damage with the Grenade type (0-100%). The radius of damage when the player explodes depends on this value.
- Explosion wave length is a parameter that determines the repeatability of the explosion wave (1-16). When the value is 1, the blast wave affects only those players who are in the zone of influence of the headband emitters of the player hit by the grenade. With a value of 2, players hit by the blast wave hit the next players with their emitters, if they are in the zone of their radiation, etc.
- Explosion - permission to use the function, when after hitting a player with a beam with the Grenade type of damage, his kit with emitters built into the sensors, hits the nearby players of his team (yes/no).

Section DIFFERENTIAL DAMAGE:

- Head (0-300%, 0 - the parameter is disabled).
- Chest (0-300%, 0 - the parameter is disabled).
- Back (0-300%, 0 - the parameter is disabled).
- Shoulder (0-300%, 0 - the parameter is disabled).
- Weapon (0-300%, 0 - the parameter is disabled) - coefficients by which the received damage in a certain zone is multiplied. For example, if the selected value of differential damage is 50% in the back and the beam hits this zone with 90 units of damage, the actual damage will be 45. But at 300% the same hit will deal damage of 270 health units.

The presence of differentiated damage depends on the composition and type of equipment included in the player's kit. The maximum kit is a headband, a vest with shoulder sensors and a tager with hit sensors. The absence of, for example, shoulder sensors on the vest accordingly excludes the SHOULDER zone.

If the game assumes different settings for teams (this may be due to different missions or compensation for a different number or composition of teams), in the TEAMS tab, move the switch to the left on the GENERAL SETTINGS line. After that, the team settings will become active.


By switches, you can select teams, which will participate in the scenario. When you click on the line with the team name, a window for team settings of the kits opens, which is similar in content to the general ones.

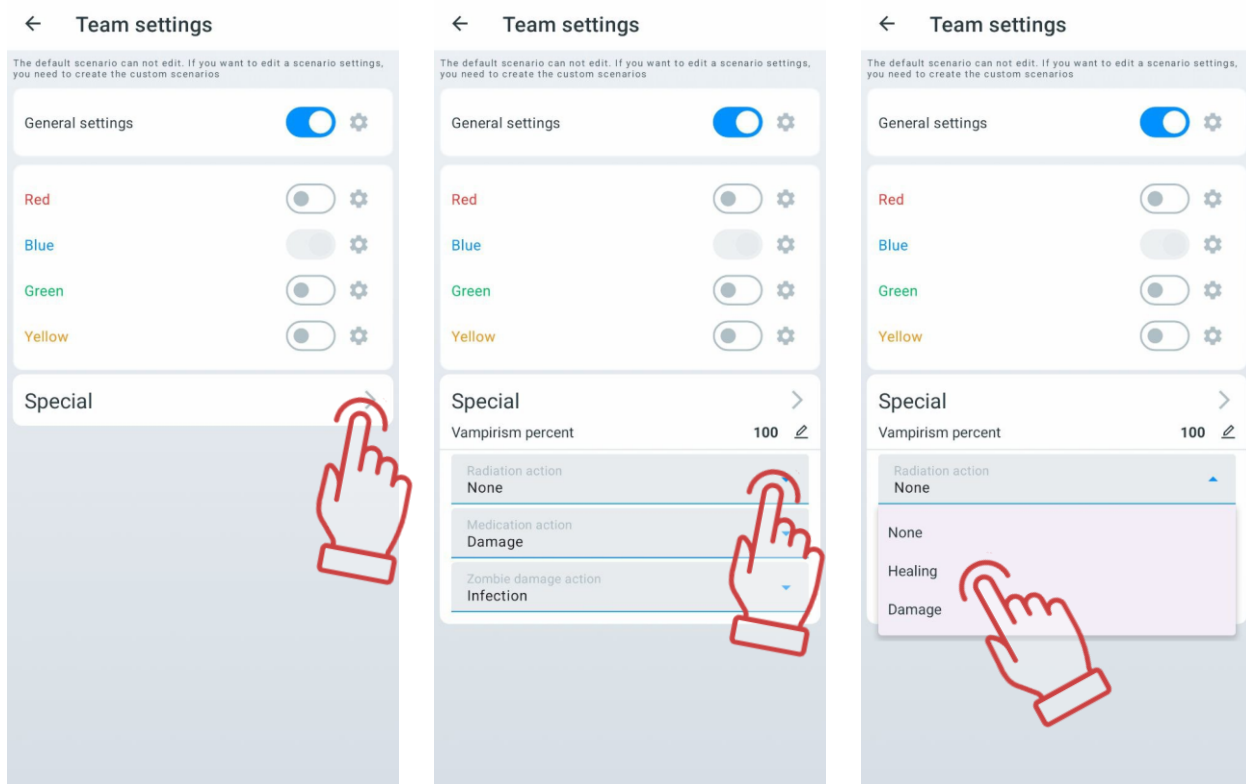
Section SHOCK BAND

- Time of vibration defines the period during which the bracelet will play a vibration after being hit (0-20 seconds);
- Mode to chose the mode of impact on the player after getting into his kit (1 - 5). The device has 5 indication modes: vibration and 4 levels of electrical pulses power.
- Multiple hit - permission to use three vibro- or electrical impulses when a player is hit. By default, the shock bracelet vibrates once or emits one impulse (yes/no).
- Change a mode by device – to allow the player to independently change the shock band mode using the buttons on the device (yes/no).

Starting from LTO version 3.3.4 and higher, the "Special" menu is now located under the "Team Settings" tab.

The "Special" menu includes settings for radiation effects, healing, damage from zombies, and vampirism percentage.

By clicking the arrow button  next to the "Special" menu, the following configuration parameters become available:



- Vampirism percent - Determines what percentage of health a participant restores from the damage they inflict on an opponent.
- Radiation action - (None/Healing/Damage) Allows changing the impact on participants' health within the radiation zone. For players with the "Vampire" or "Zombie" presets, healing causes damage, while damage heals. For all other presets, the opposite applies: healing restores health, and damage decreases it.
- Medication action – Determines the effect of a medkit on various participants:

- None – The medkit has no effect on participants.
- Healing – When a medkit hits a player, health points are added to all players except those with the "Zombie" or "Vampire" presets; for them, the effect is reversed.
- Damage – The opposite of the healing effect.
- Zombie Damage action – Determines the consequences when a player takes damage from a zombie. The following options are available:
 - Infection – When a zombie hits a player, the player transforms into a zombie and joins the zombie team.
 - Change Team – When a zombie hits a player, the player only changes teams without turning into a zombie.
 - Off – A zombie kills a player after two hits.

1.3.2.2.4.1. Weapon Firing Mode Change

Attention: The weapon firing mode change feature is available for taggers with firmware version 19_5_0D44CA98 or higher. To update the tagger firmware to version 19_5_0D44CA98 or higher, contact technical support. The current technical support contacts are listed on the company's website at: <https://lasertag.net/support>. You can use a QR code for quick access to the website.

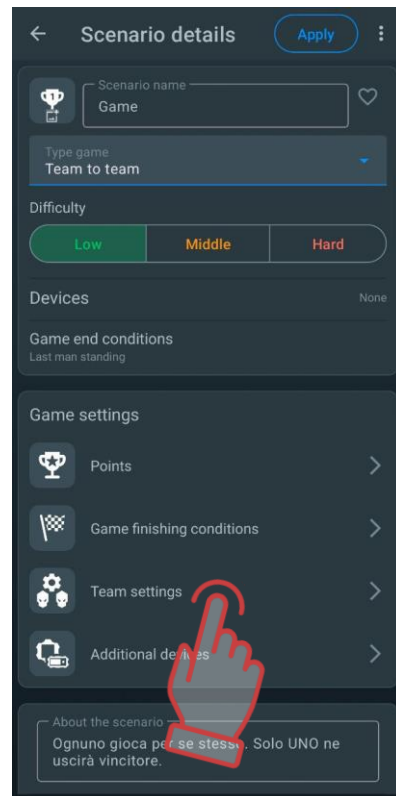
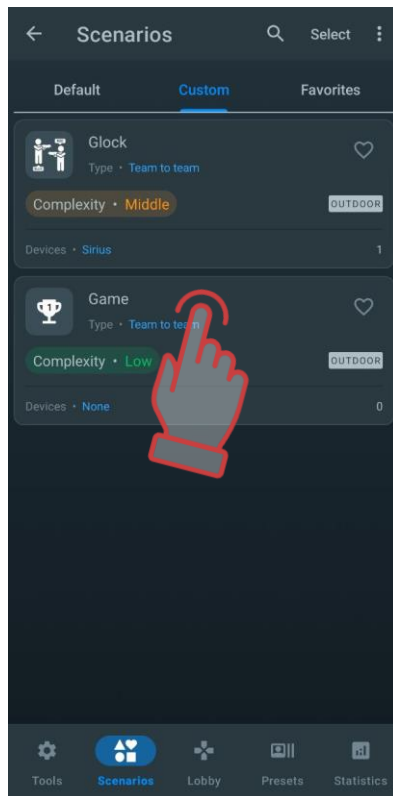
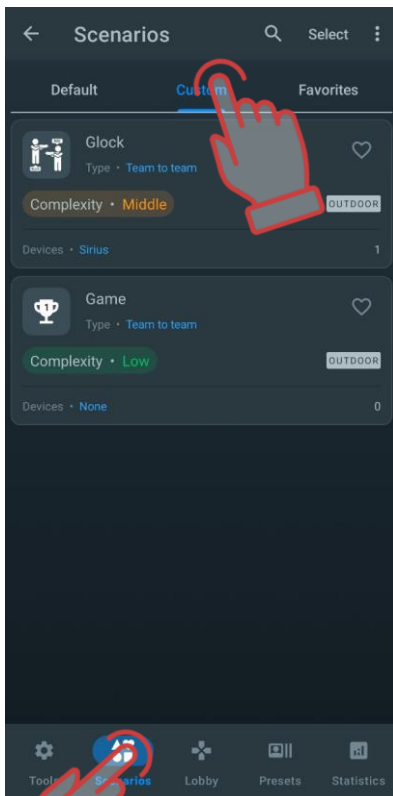



In the current version of the application, three firing modes are available:

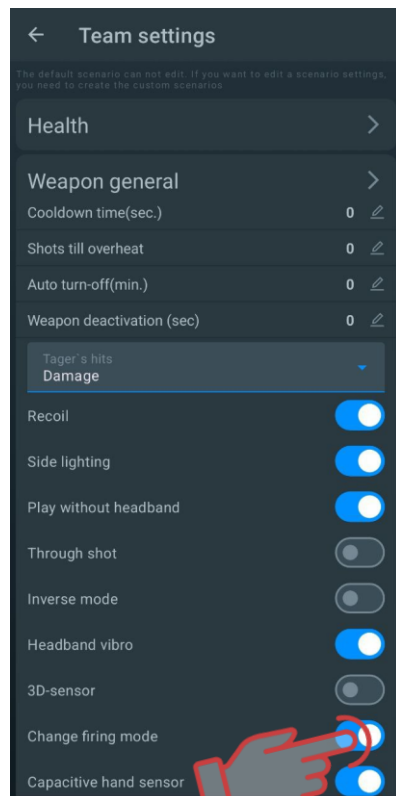
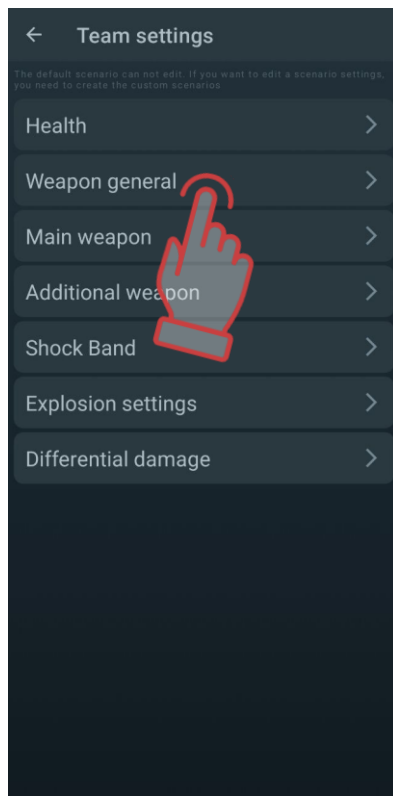
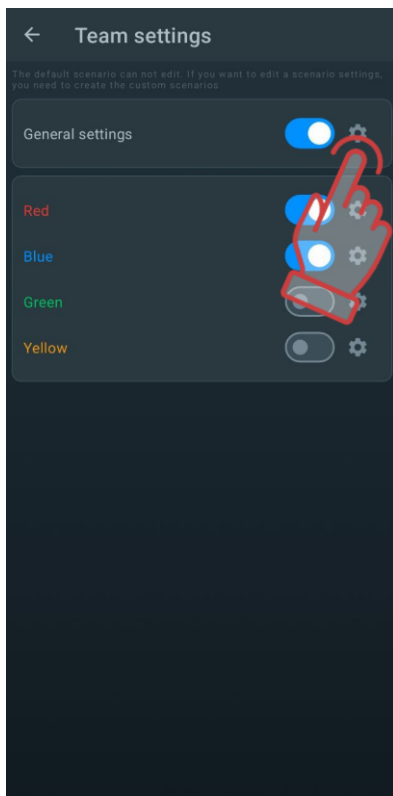
- "Automatic";
- "Single" – single shot firing;
- "Shot burst" – firing in bursts of 3 shots.

To enable the option to change the firing mode using the "Reload" button during gameplay, follow these steps:

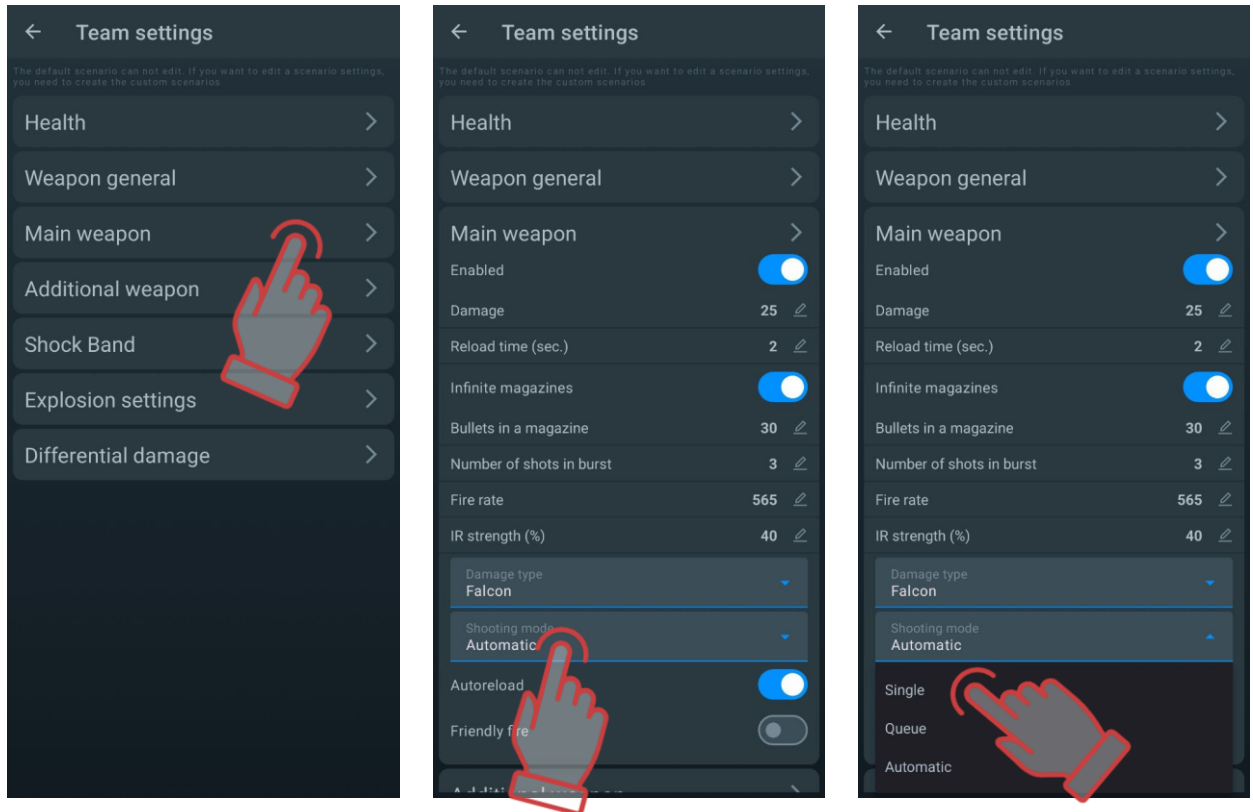
1. Open the "Lasertag Operator" application.
2. Go to the "Scenarios" menu.
3. Open the "Custom" tab.
4. Select the required scenario from the list by clicking on its name or create a new one. The process of creating a scenario is described in section 1.3.2.2.1.
5. After opening the scenario settings, select "Team Settings." You can change the settings for all players at once (in the "General Settings" section) or for individual teams participating in the game.




6. Click on the gear icon  next to the selected team or general settings.
7. In the opened menu, select " Weapon General".
8. Find the "Change firing Mode" parameter and activate it by moving the slider to the right.



9. Then go to the "Main Weapon" section and select the initial firing mode from the drop-down list.
10. Similarly, select the initial firing mode from the drop-down list in the "Additional Weapon" section.



If the "Change firing Mode" parameter in the "Weapon General " menu is disabled, the player will not be able to change the firing mode using the reload button. In this case, the firing mode set in the "Main Weapon" and "Additional Weapon" settings will be used.

The feature is similarly customized for individual players after adding players to teams - by clicking on the icon  in the individual player settings.

1.3.2.2.5. Additional devices

This option allows you to add additional devices to the game (Sirius, MS (MULTI STATION), DB Smart, Supernova (Bomb Supernova)) and change their settings.


A video tutorial on how to add and configure a Sirius station to a scenario is available by clicking [here](#) or by scanning the QR code.

A video tutorial on how to add and configure a SMART control point in a scenario is available by following the [link](#) or scanning the QR code.


IA video tutorial on how to add and configure a SUPERNOVA bomb in a scenario is available by following the [link](#) or by scanning the QR code.

To add a SMART Domination Box, SIRIUS, Multistation or laser tag bomb Supernova to a scenario, go to the ADDITIONAL DEVICES tab and click on the corresponding button at the bottom of the window.



To do this, go to the Additional Devices tab and click on the plus button  located at the bottom of the additional device icon.

The number of each device is limited to 15 units, but this is quite enough to implement the most complex scenario.

The added devices will appear in the window. To remove them, click the trashcan button  to the right of the added device name; to set them up, click the tile.

In the window that appears, depending on the device being configured, you can change the device ID number, adjust the IR beam power of the emitters, set the volume of the sounds played (for Control Point Smart and MULTI STATION), select the team color with which the additional device will interact (for Sirius and MULTI STATION), and set the required game mode for the device.

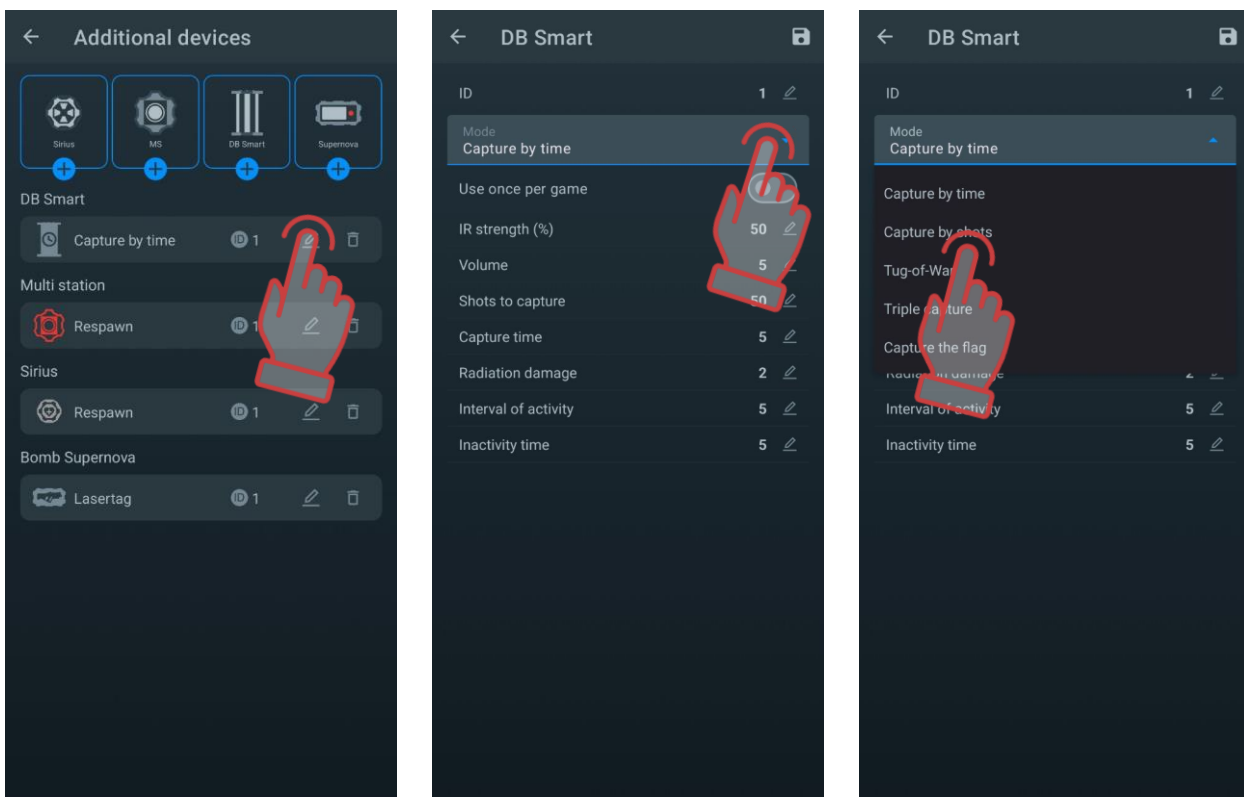
To select a mode, click on the tile and select the desired game mode from the drop-down list.

For each of the modes there is an individual setting for both numerical values (damage for deactivation, interval of activity, time of inactivity, etc.), and the ability to affect all or certain teams.

Deactivation damage is the amount of damage that must be dealt by shots to the device to deactivate it (1-254).



The interval of activity is the interval after which the device produces some effect on the players (1-254 s.).

Inactivity time is the time it will take for the device to renew its effect on players after it has been deactivated (1-254 s.).





The SMART domination box is configurable to one of five available modes:

- CAPTURE BY TIME - the classic mode, in which the device controls the holding time of the point of each of the teams. The indication in all columns is the same. Up to 4 teams can participate.
- CAPTURE BY SHOTS - capture occurs by the number of shots fired by players into the DB receiver. In game, only from 2 to 4 teams are allowed to participate.
- TUG OF WAR is a capture by time, but the indication shows the percentage balance of the hold. 2 teams are participating.
- TRIPLE CAPTURE is also a capture by time, in which the degree of capture is displayed for each of the teams in different indicator columns. 2-3 teams can participate.
- CAPTURE THE FLAG - a mode for 2 teams, in which the capture occurs according to the number of hits in the receiver of the device. The indication is made according to the following principle - one team raises the LED column with shots, and the second tries to lower it.

To confirm the settings, press the disc button , to cancel the changes, press the button  to return to the previous page.

The SIRIUS station can be used in eight modes:



- RESPAWN - during its activity, the station restores the starting value of health and ammunition units of deactivated players, as well as the starting type and firing mode of the weapon. When impacting on a player who still has health units, only the last clip and only the main weapon are replenished.
- RADIATION MODE - the station at regular intervals reduces the supply of units of health for ordinary players, and in the roles of Zombie and Vampire, it increases.
- MEDKIT - the device periodically replenishes the players' health units (but no more than the value at the start of the game). Another function is to stop "bleeding" in kits that have this parameter enabled by software. It worsens health for Zombie or Vampire.
- ARSENAL - the device adds to the player the number of cartridges or clips set in the application (but not more than the starting value).
- RANDOM - when activated, one of the three game commands is distributed in random order: "Double lives", "Arsenal" or "Radiation".
- BONUS MODE - after firing a shot at the device, all kits within the range of influence of the SIRIUS IR-emitters double their health units (up to 999 units). There is no automatic distribution.
- BASE - when triggered, the device sends out two game commands at once - Respawn for its players and Radiation for opponents.
- FLAG is a new mode that allows you to play "Capture the Flag" (CTF) scenarios. During the game, SIRIUS generates virtual flags which players of the opposing team can capture by shooting several times at the device. After receiving confirmation of the capture, the player becomes a flag carrier. and then he must fetch the flag to his base. To surrender the flag, the flag carrier must also fire at his SIRIUS before receiving the FLAG ACCEPTED confirmation.

To confirm the settings, press the disc button , to cancel the changes, press the button  to return to the previous page.

The multistation in scenarios can operate in seven game modes. The functions of the device in the modes MEDKIT, ARSENAL, RADIATION, BASE and RESPAWN are similar to the functions of the same modes in the SIRIUS station.

Besides, Multistation has two more game modes:

- DOM BOX capture is an analogue of the Domination box, but with its own specifics. The capture is made by shots, and points are awarded for holding the box.
- MS: BOMB - the mode allows to conduct scenarios reminiscent of an episode of the PC game "Counter-Strike", namely, "Laying the bomb". Initially, the players are divided into two teams - miners, who plant a bomb with shots at the device and sappers who must defuse it.

To confirm the settings, press the disc button , to cancel the changes, press the button  to return to the previous page.

Bomb Supernova can be used in the following modes: laser tag or paintball. For the "laser tag" mode, the algorithm for using the device corresponds to that described in part 2 of this manual. The "paintball" mode does not provide for confirming the activity of the player's kit with a shot from a tagger before planting and demining a bomb. Also, there is no need to start with the Remote Control button - after its turning on, the bomb is ready to be installed on the platform.

The Bomb Supernova also has its own settings:



Damage on defeat - the number of health points taken from players of all teams when a bomb explodes.

Demining time (sec) - holding time of the control button to deactivate the bomb.

Clockwork (180-600 s) - the time during which the sapper team needs to deactivate (clear) the bomb after it was activated by the miners team.

Miner team - you can choose the color of the team that plants the bomb.

Sappers - defuse the device - select the colour of the team that will defuse the bomb.


To confirm the settings, press the disc button , to cancel the changes, press the button  to return to the previous page.

! The damage is done via Wi-Fi and this function is supported only by kits with the tagger's firmware 19.4 and higher.

To read about modes in which the accessories work and how to set up them, see Netronic platform equipment user manual for working with WiFi router Part 2 "Additional devices", "Manuals for using the Multistation "Bomb" mode" <https://lasertag.net/support/manuals/outdoor>.



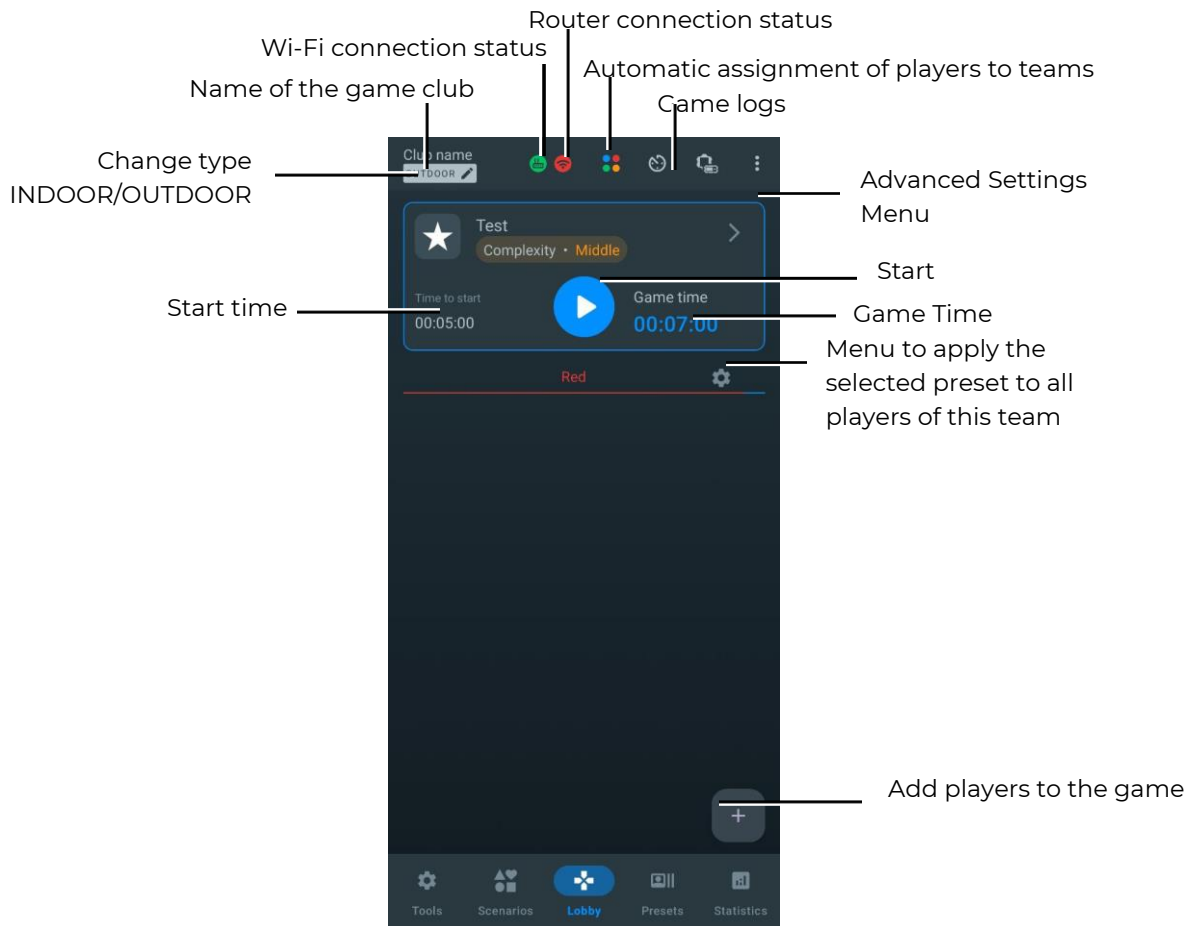
1.3.2.3. Favorites

The Favourites tab allows you to quickly find and easily manage your favourite scripts, as it is designed to store your favourite or most used scripts. Each time you click the heart icon  next to a scenario's name, it is automatically added to this tab.

You can add both standard and custom scenarios to your Favourites.

1.3.3. Lobby tab

The Lobby is the most visited place in the LTO mobile app. This tab is used to add players to the game, assign a team colour, view current game statistics and start the game. The main elements of the window are shown in the image below.





1.3.3.1. Changing the type of equipment

The LTO application automatically recognizes the type of connected equipment and sets the corresponding operating mode: OUTDOOR or INDOOR. It is recommended not to connect two types of equipment simultaneously, as some functions may not work correctly.

1.3.3.2. Wi-Fi network connection status



There are two statuses of the Wi-Fi connection:

- green  - the signal is stable;
- red  - the signal is not stable or the game participants are far from the Wi-Fi network.

For the devices to work properly, it is important that the Wi-Fi indicator is green during the game.


1.3.3.3. Router connection status

There are two statuses of the router connection:

- green  - the router is connected to the correct network;
- red  - the router is connected to the wrong network.

If the icon is red, you need to change the selected network to the network specified in 1.1.

1.3.3.4. Advanced settings Menu

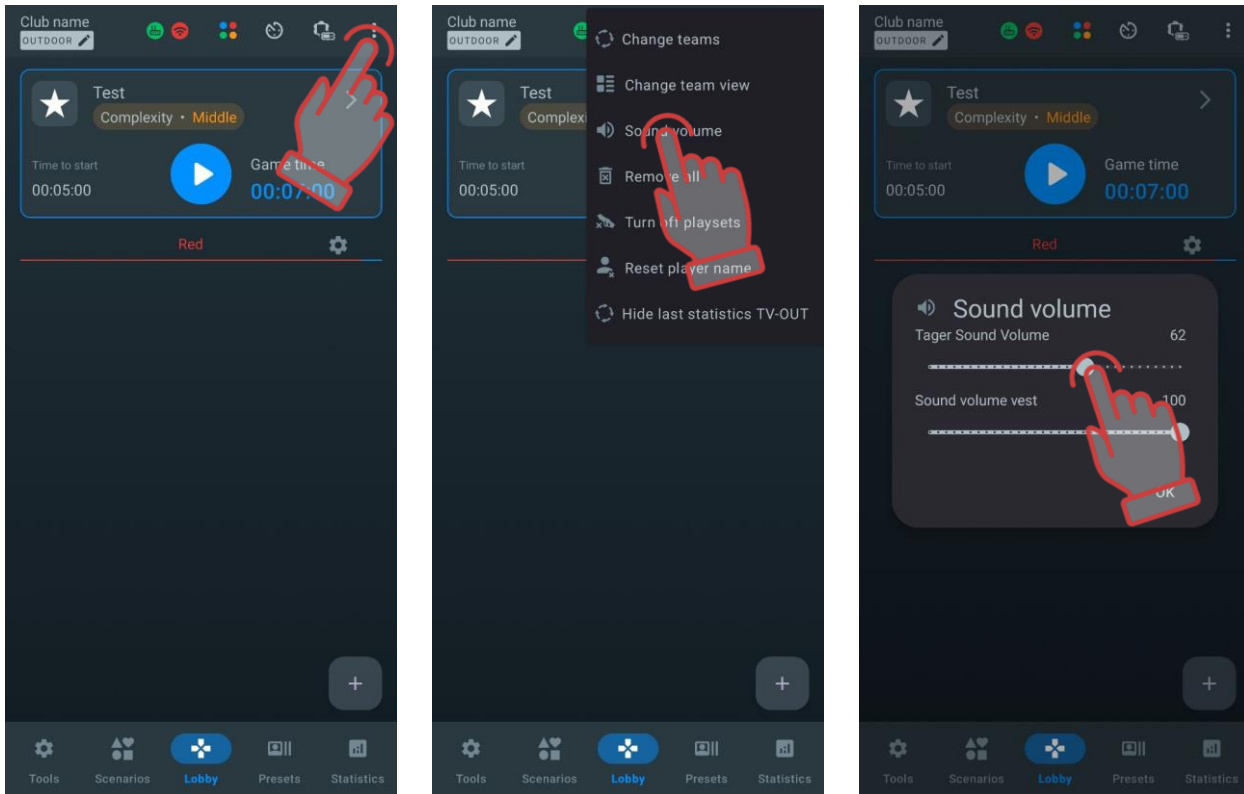
Pressing the three-dot button  opens an additional menu containing the following items:

- Change teams - allows you to change teams;

- Change team view - allows you to change the display type of the player's card (table or tile);
- Sound volume - allows you to change the volume on the main device (tagger);
- Remove all - allows you to delete all players that have been added;
- Turn off playsets - allows you to turn off all game kits.
- Hide last Tv-Out statistics – allows you to hide the latest Tv-Out statistics.


To select an item, tap the name of the desired item.

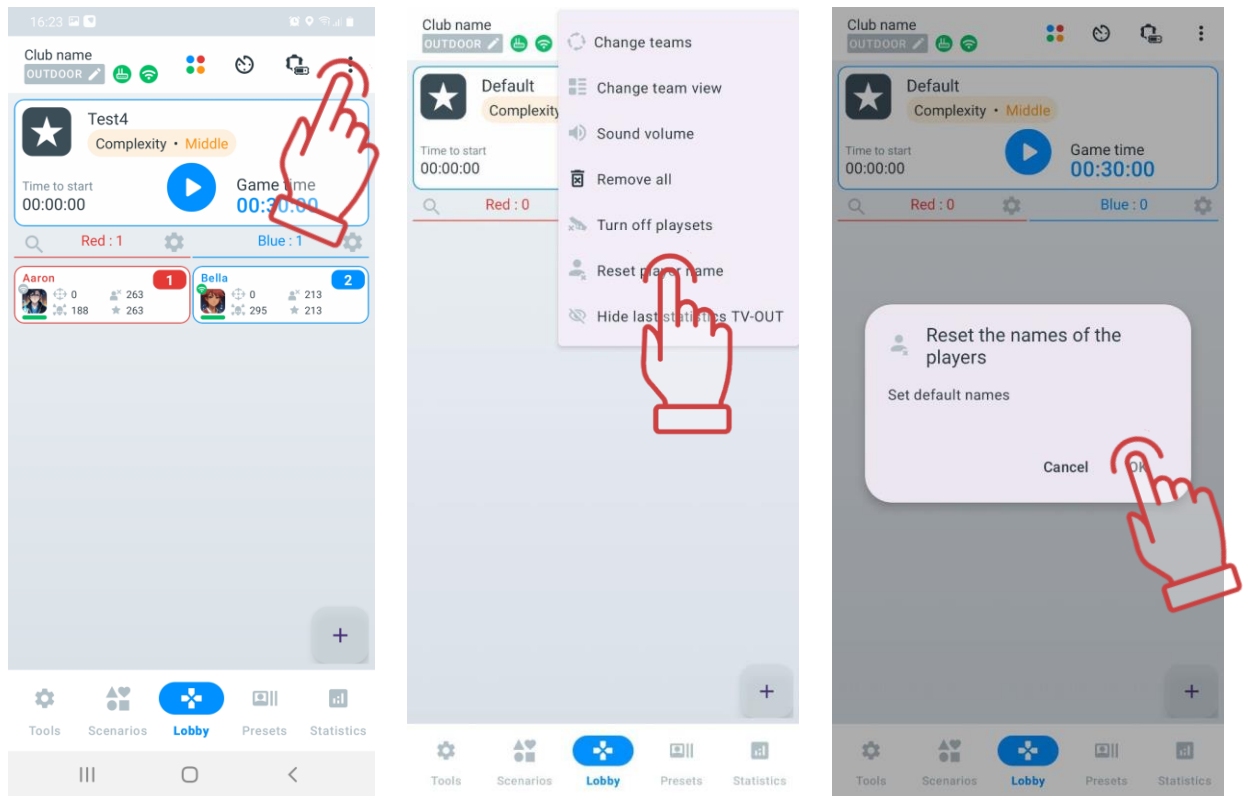
In some menu items, after selection, a pop-up window appears. Here you should select the options and click the OK button to confirm your choice.



1.3.3.4.1. Resetting Player Names in the "Lobby"

To reset all custom names assigned through the player card to the default theme values, follow these steps:

- 1 In the "Lobby," click the button  in the upper right corner of the screen.
- 2 In the options list, select "Reset Player Names."
- 3 Confirm the action in the pop-up window by clicking "OK."





After resetting, player names will revert to the default settings of the custom themes in the "Personalization of Players" menu, while the avatar will remain unchanged.

1.3.3.5. Game Log Filter

Starting from version LTO 3.2.0.a5ff03f7d, a new feature has been added – the game event (log) filter.

As a result, the option to enable/disable detailed game logging in the "Options" section of the "Settings" tab is no longer available.

Instead, a quick access button for configuring game events  is now available in the "Lobby." Here, the user can not only enable or disable the display of events but also configure their display separately.

To enter the event display settings menu, click the button  located in the upper-right corner.



By default, the display of all events is enabled. The filter is applied simultaneously to both LTO and Lasertag Tv-Out."

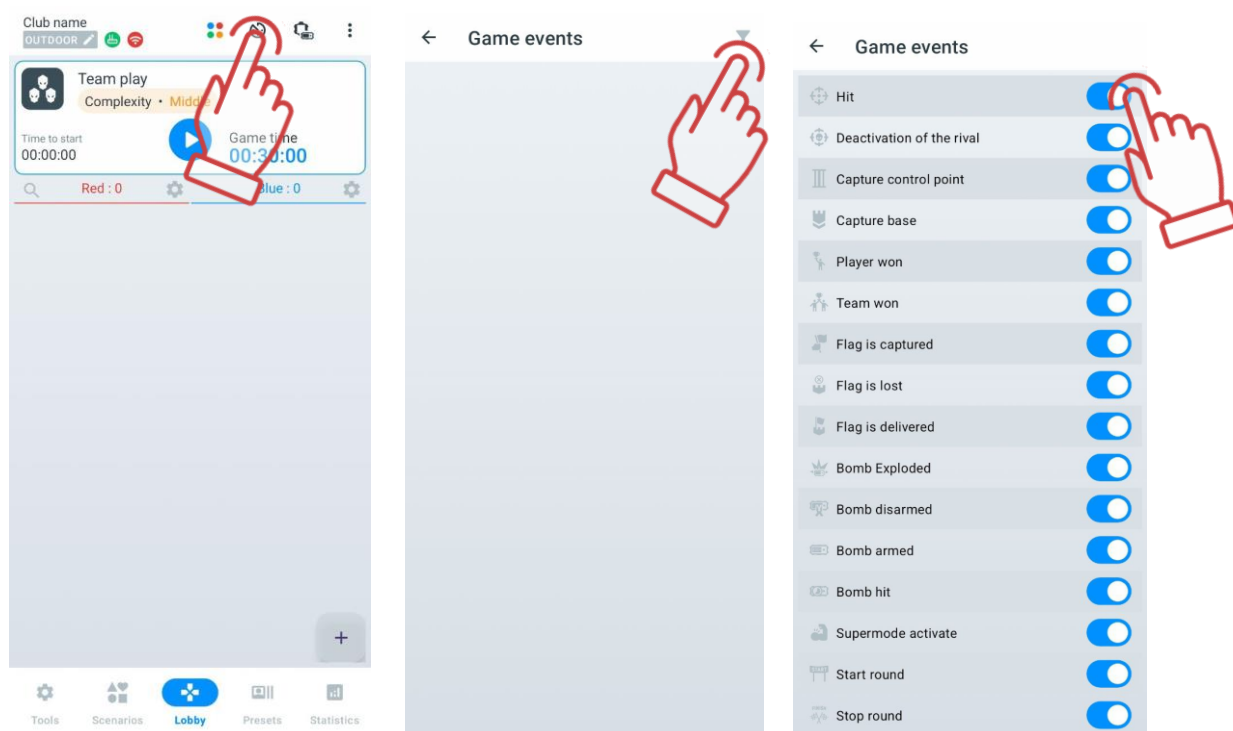
The list of game events that can be enabled or disabled is as follows:

- Hit;
- Deactivation of the rival;
- Capture control point;
- Capture base;
- Player won;
- Team won;
- Flag is captured;

- Flag is lost;
- Flag is delivered;
- Bomb Exploded;
- Bomb disarmed;
- Bomb armed;
- Bomb hit;
- Supermode activate.

In addition to the listed events, you can also enable or disable notifications for the start (Start Round) and end (Stop Round) of a round.

The switch, located to the right of the event name, allows you to enable (state ) or disable (state ) any logs from the list individually.



According to these settings, events received from the server will be displayed on the Lasertag Tv-Out screen during the game based on the active filter. If the filter is changed after events have been displayed on the screen, the log will be displayed according to the new settings when the log packet is resent.

It is important to note that the full list of events is stored in the LTO logs (*Settings => File Explorer => Logs*), regardless of any changes made to the filters during the game.

1.3.3.6. Setting the game start timer and the game time

A video on how to set the game timer and pre-launch is available at this [link](#) or via QR code.



1.3.3.6.1. Setting the game start timer

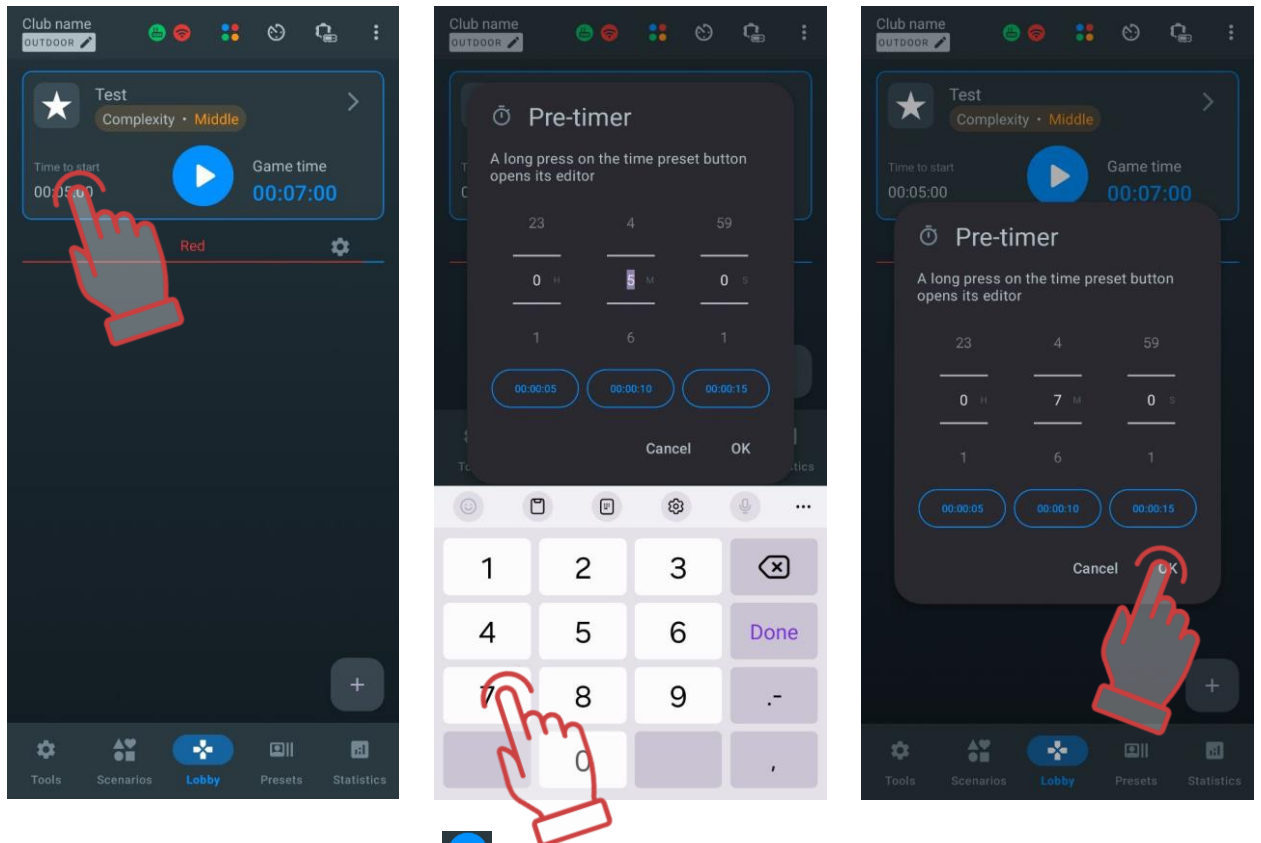
The Time to Start function allows you to select a convenient time to start the game by clicking on it.


This function allows you to select the hours, minutes and seconds. To select the desired value, swipe up or down on the screen. For your convenience, the set time before the game starts is also shown at the bottom. To select the suggested time, click on the desired timer. To

save the set time, click OK, to cancel, click Cancel. Possible time before start to set: from 0:0:0 to 23:59:59.

To change the suggested time, you need to:

- 1 Hold down with your finger the timer that you need.
- 2 When a separate window appears, use the slider or keyboard to select a convenient time. You can also select one of the suggested time options in the blue boxes below.
- 3 Click OK to save the changes. To cancel the action, click Cancel.



Pressing the Start button  will start the countdown to the start of the game. The countdown is accompanied by a special sound and is displayed in large numbers on the screen. When the countdown is over, the game will begin.

1.3.3.6.2. Setting the round time

The duration of the round is chosen depending on the scenario and the availability of conditions for the end of the game.

The Game Time function shows how long the game session will last. The default game time is 30 minutes. Click on the timer to set a more convenient time.


Setting the time is similar to setting the timer in the Time to Start function (see 1.3.3.5).


The screen also shows the colours of the teams. The team colours may change depending on which scenario you have selected for the game. The colours can change to yellow and green.

1.3.3.7. Adding players to the game

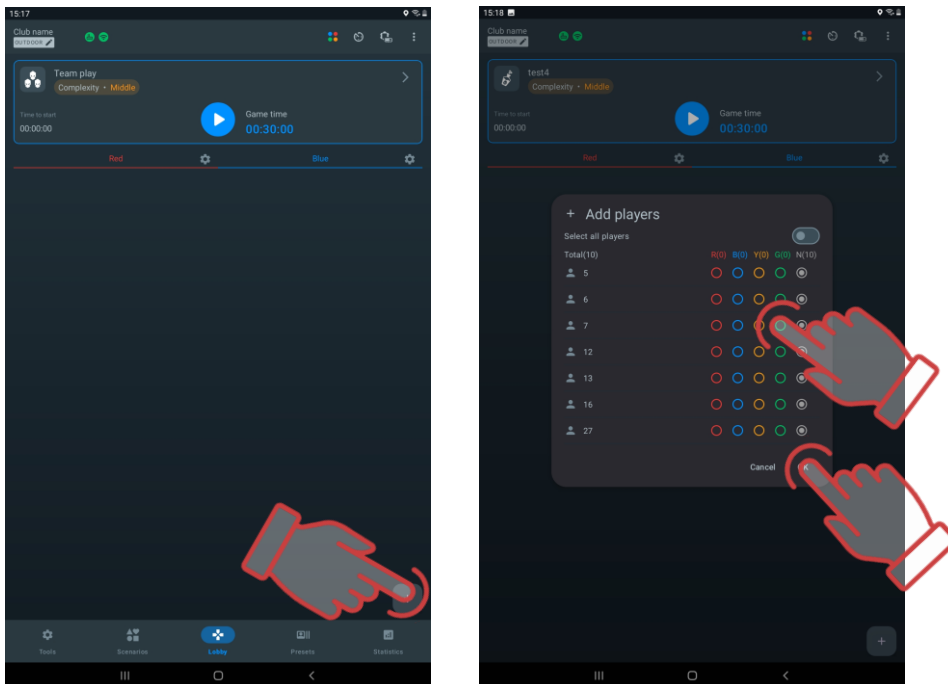
You can learn more about how to add players to your team in the video tutorial at the [link](#) or by scanning the QR code.



To add players to the game, click on the button  located in the lower right corner of the window.

Before you click the button , the command panel will be empty. In most cases, the lobby will show 2 commands - blue and red. However, if you create your own scenario or choose a different one, the command colours may be different.

If there is a team, the name of the team will be highlighted in the team's colour, if there is no team, the name will be grey.




1.3.3.8. Forming teams

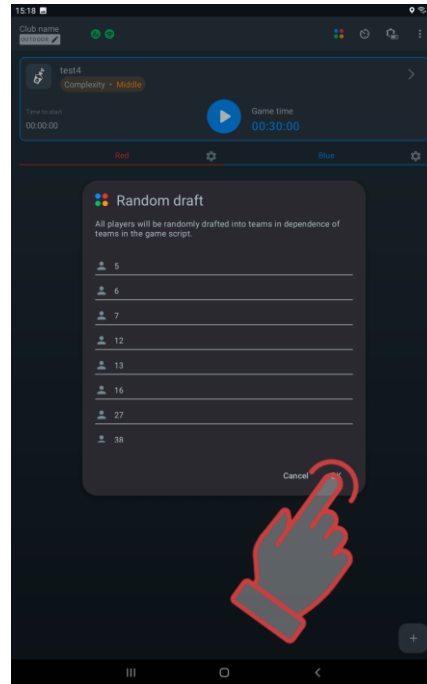
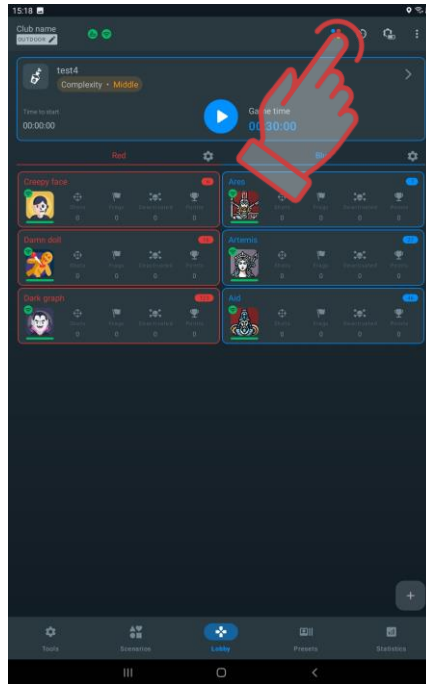
There are four teams in the app: red, blue, yellow and green.

Even if the scenario is carried out according to the principle "death match", it is recommended to assign different colors to the kits to improve the visibility of statistics and add color to the game.


You can assign players to teams automatically or manually.

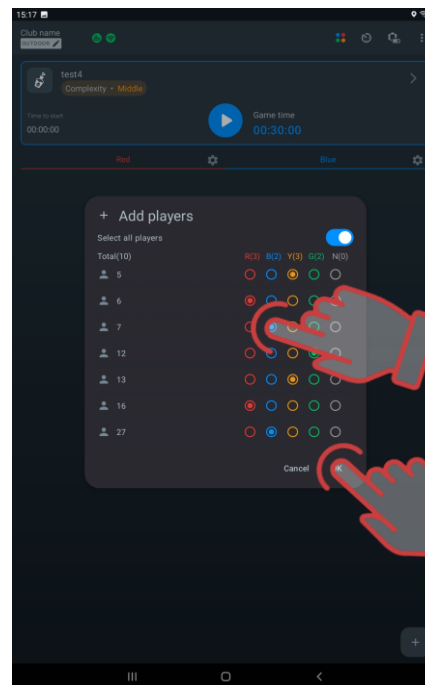
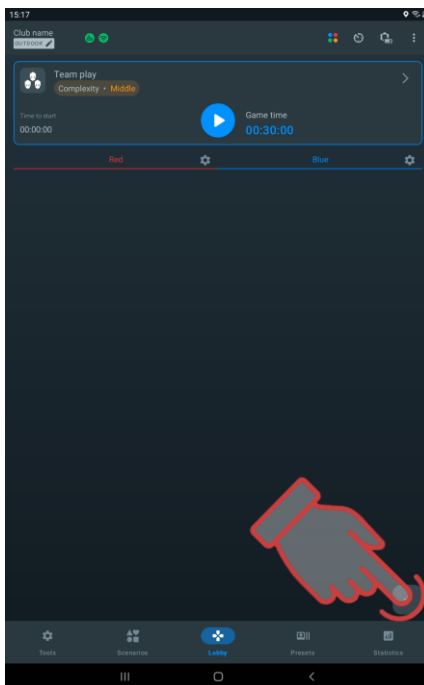
To automatically assign players to teams, click the button  located at the top of the screen.

In the window that opens, click OK to confirm. Players will be randomly assigned to teams.

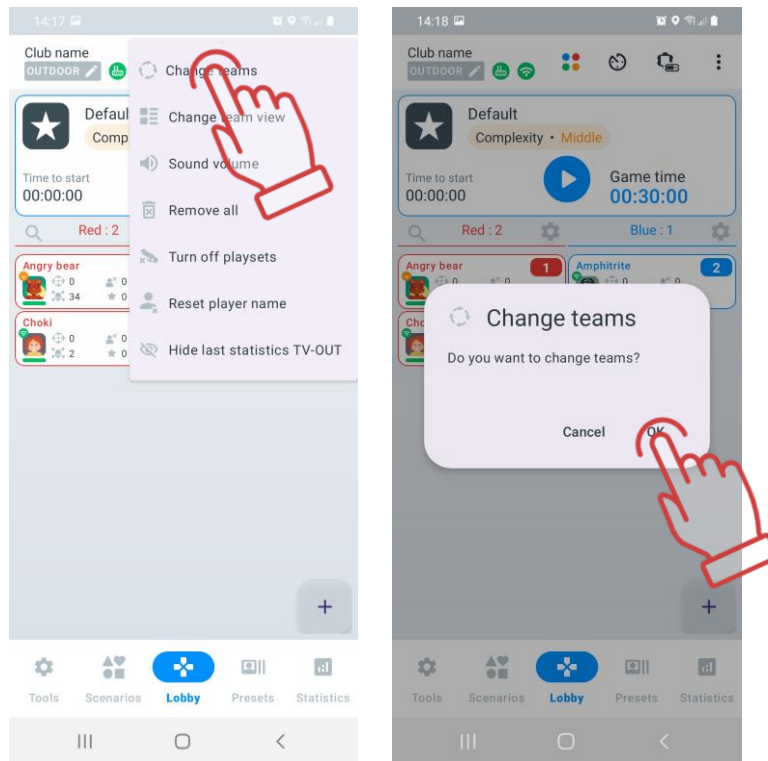


To assign players to teams manually, you need to:

- 1 Click on the plus button  located in the lower right corner of the window.
- 2 When assigning players to teams, you will need to place a circle next to the user's team.
- 3 Click OK. If you do not want to use automatic assignment, click Cancel.

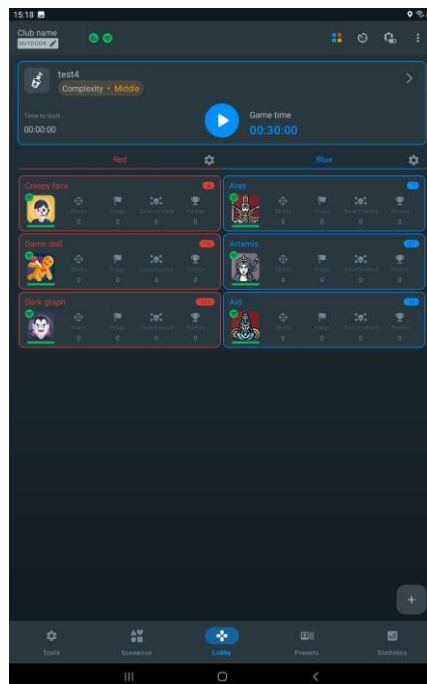


The application provides one more opportunity for editing the distribution by teams - pressing the Change teams button changes the color of the teams. If there are more than two teams, the color change is performed “circle wise”.











1.3.3.9. Setting up player cards


The player card features double-sided design. One side displays the player's game statistics, which automatically appears after players are assigned to teams. The other side of the card, called the "service" side, shows information about equipment firmware versions, battery charge level, and RSSI level (received Wi-Fi signal strength).












The main screen of the card may contain the following information:

- Angry bear – player's name;
- ID 125 – player's ID;

- Wi-Fi connection strength:
 -  – high;
 -  – medium;
 -  – low;
 -  – none.
-  – player's health level;
-  75% – tagger charge level;
-  75% – charge level of the bandage;
-  47% – charge level of the shock bracelet;
- firmware numbers of the devices.

To see the information on the other side, click on the three dots  in the upper right and select the Change Card function.

The second screen of the card contains the following information:

- Iron Man – player's name;
- ID 125 – player's ID;
- Wi-Fi connection strength:
 -  – high;
 -  – medium;
 -  – low;
 -  – none.
-  – player's health level;
-  – hitting the opponent with a shot;
-  – deactivation of the opponent;
-  – deactivation of the player with this card;
-  – points earned during the game.

A video tutorial on how to change the name and avatar on your player card can be viewed by clicking on the [link](#) or scanning the QR code.



1.3.3.10. Individual kits settings

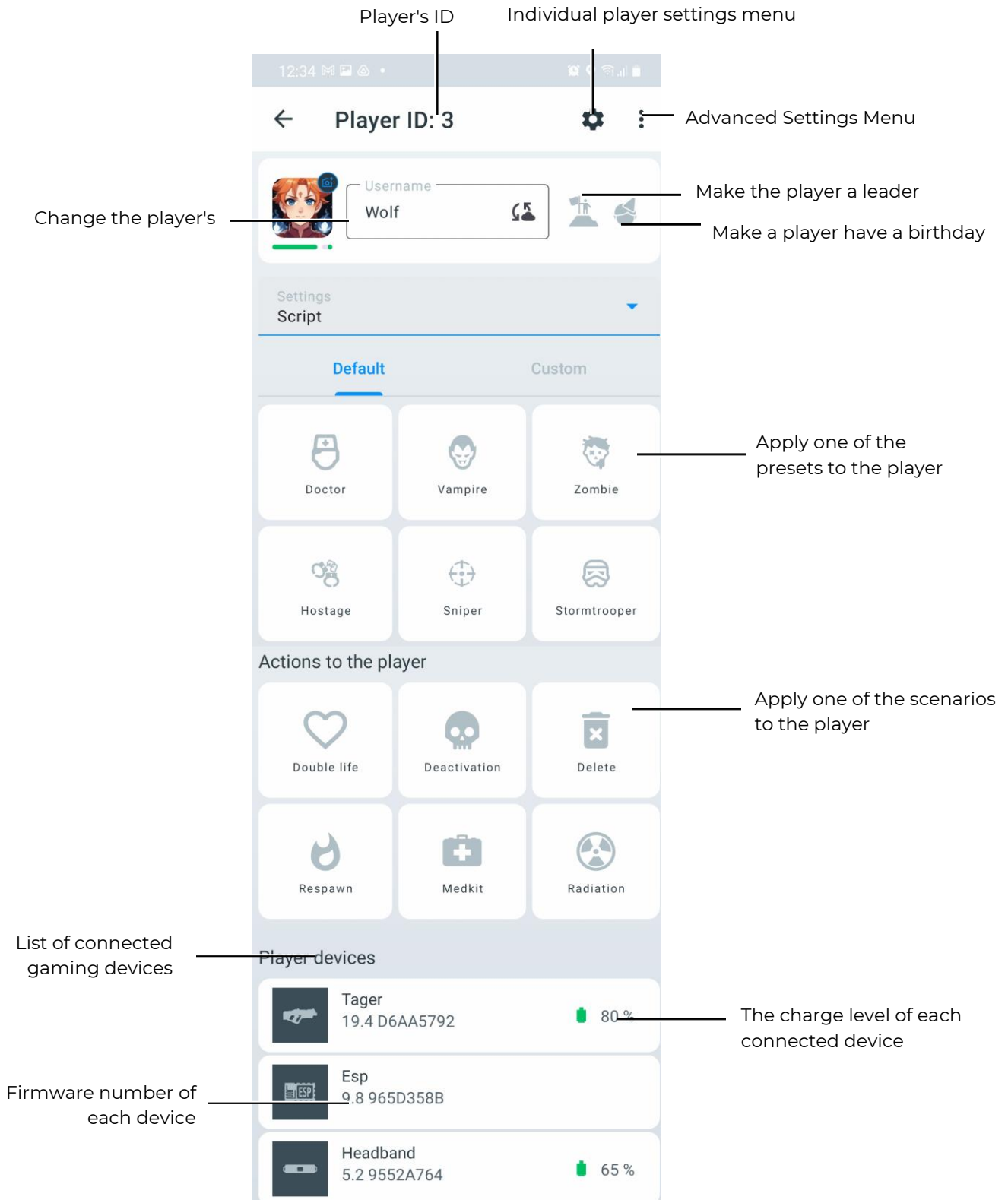
As a rule, in the scenario, the kits of players are assigned either general settings that are the same for everyone, or team settings that are different for different teams, but the same within the team. But there is a need to single out individual players, endowing them with specific abilities and capabilities. It can be both the birthday person and the animator participating in the game. It is useful to designate some players as medics or snipers.

In the application, in addition to using scenario settings, there are three options for assigning specific abilities to a player - individual settings, presets (pre-formed preset settings) or settings from the remote control.

Individual kit settings are called only after the kits are connected to the server, and they will be selected in one of the teams.

You can change the settings for each player during the game session. This card is also available after the game.

To open a player's card, click on it.

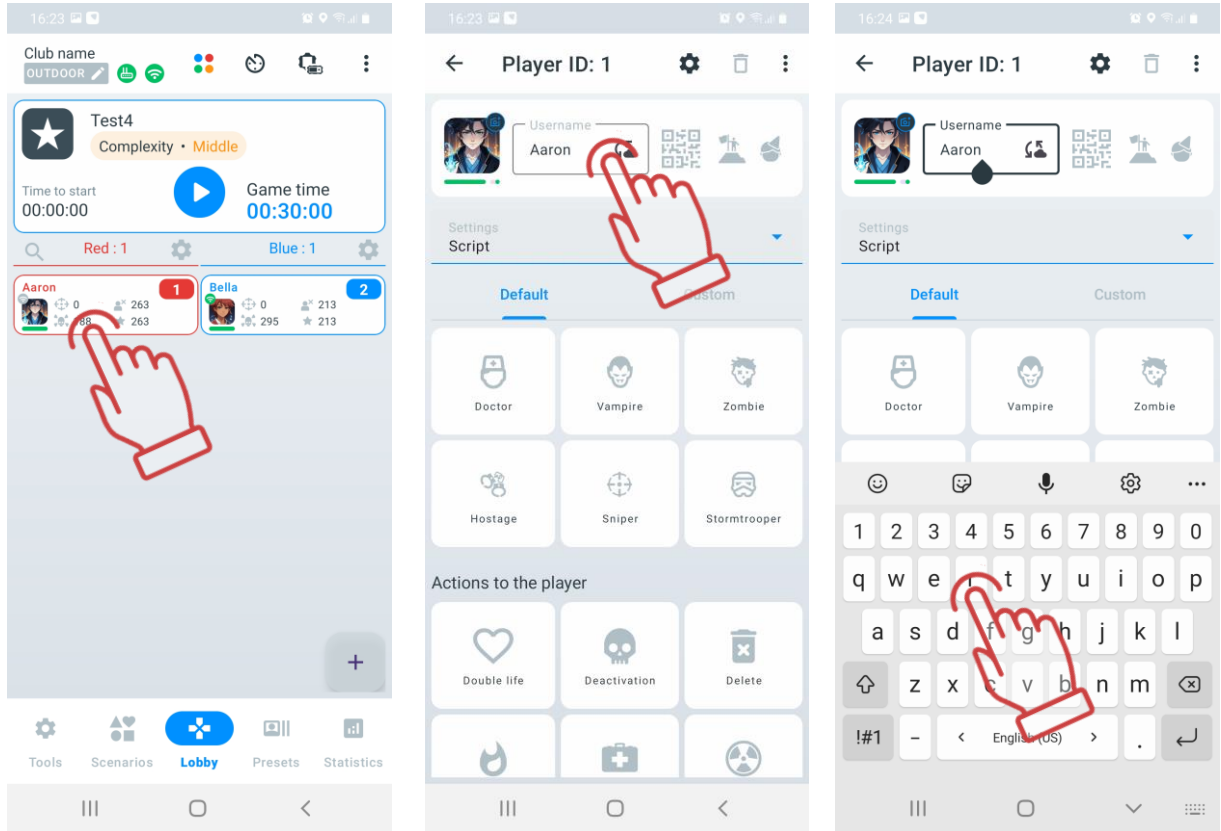


1.3.3.10.1. Changing the Player Avatar and Name in the "Lobby"

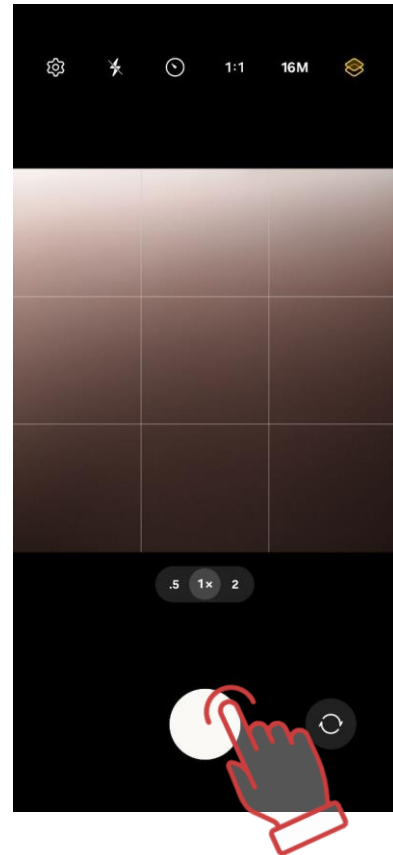
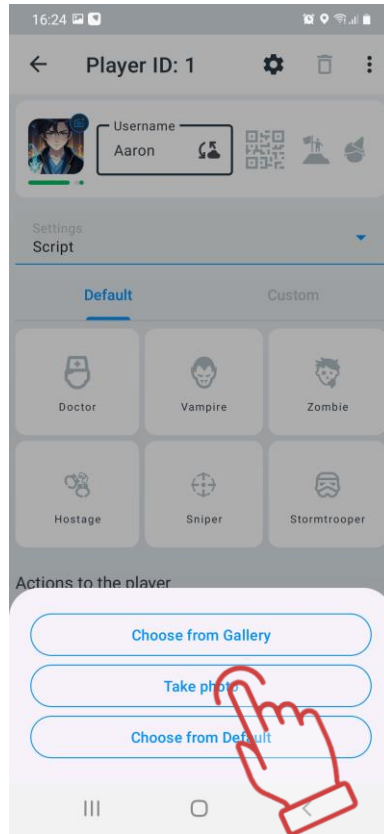
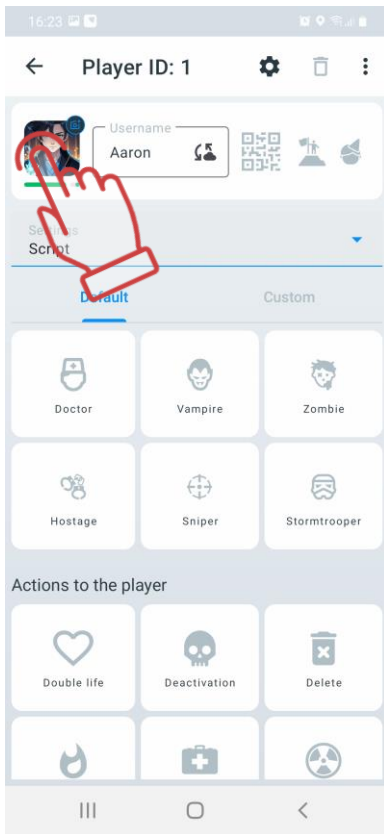
! Note: When you change a name and avatar through the player card in the "Lobby," the changes are saved only until the application is closed or the equipment is turned off. The data entered in the "Personalization of Players" menu will not be displayed.

To change the avatar and name on the player card:

- 1) In the "Lobby" tab, click on the player card.
- 2) Enter a new name in the "Username" field.



- 3) Click on the current profile icon to open the menu.
- 4) Choose one of the available options:
 - Choose from Gallery: Upload an image from your device (phone/tablet) or select an icon file from Google Photos.
 - Take a Photo: Select the "Take a Photo" option. The app will open your device's camera. Point the camera at the desired object or person and press the capture button.
 - Choose from Defaults: A window with available icons will open, including pre-installed and previously uploaded ones. Select the desired icon and confirm by clicking "OK."



5) Click the disk-shaped button  to save the changes.



6) Return to the "Lobby" (the arrow button  in the upper left corner) — the updated avatar and name will be displayed on the player card.

1.3.3.10.2. Assigning a Role to a Player

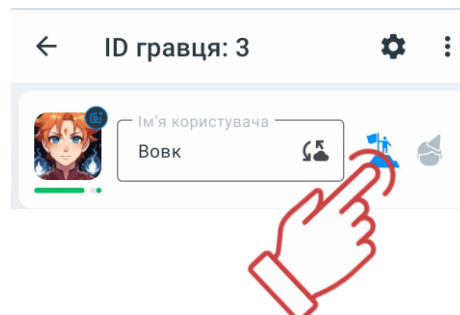
The application currently offers two roles for quick assignment:

- Leader – the team commander role; the leader's tagger will produce a corresponding sound.
- Birthday Player – a role for celebratory games.

To assign a role to a player, click the corresponding icon to the right of the user's name:

-  –to assign the Leader role.
-  – to assign the Birthday Player role.


Once a role is assigned, the corresponding icon will be highlighted in blue.

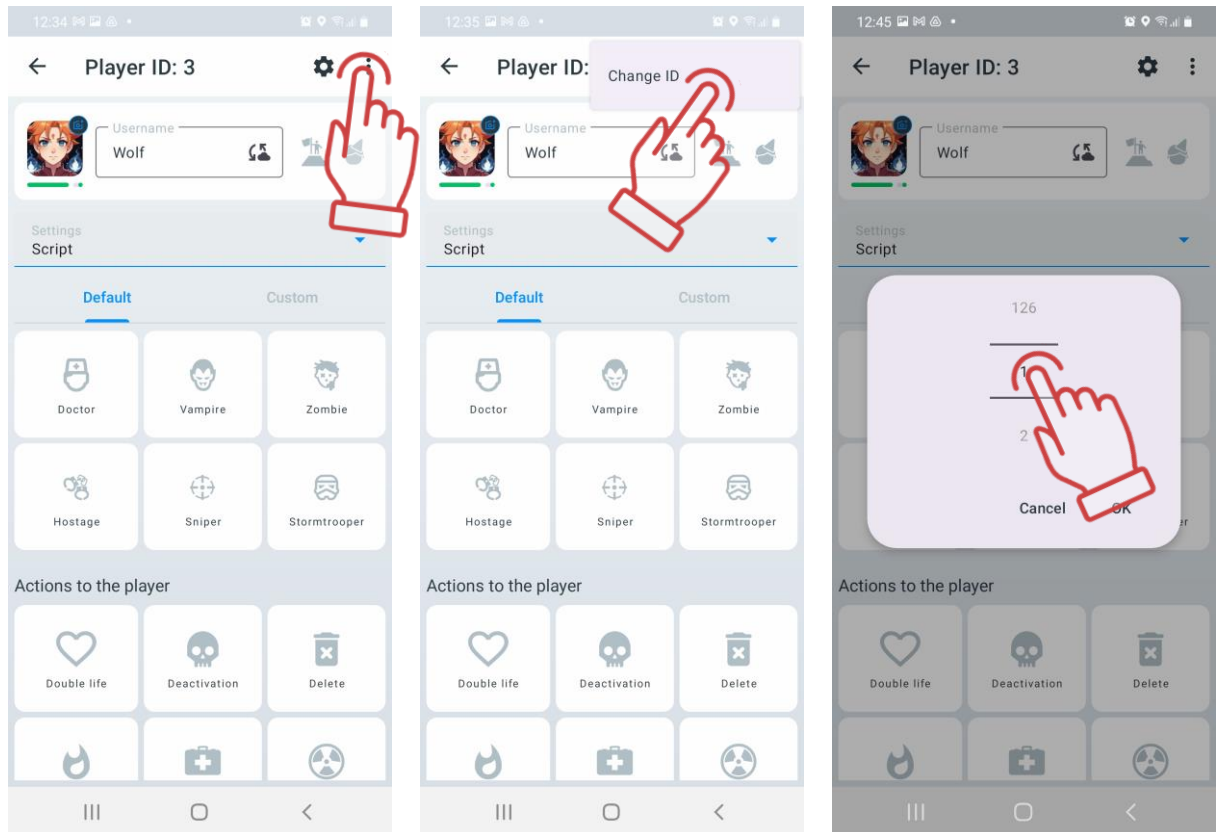


The selected player role will be displayed in the game statistics.

1.3.3.10.3. Changing a Player's ID Number

To change the ID:


- 1) Click the  to open the settings menu.
- 2) Select "Change ID".
- 3) From the dropdown list, select an ID (from 1 to 126).
- 4) Click "OK" to confirm.



1.3.3.10.4. Selecting the Settings Type

When players are added to a game, scenario settings (those defined in the selected scenario) are applied by default.






To choose the settings type in the player's settings menu:

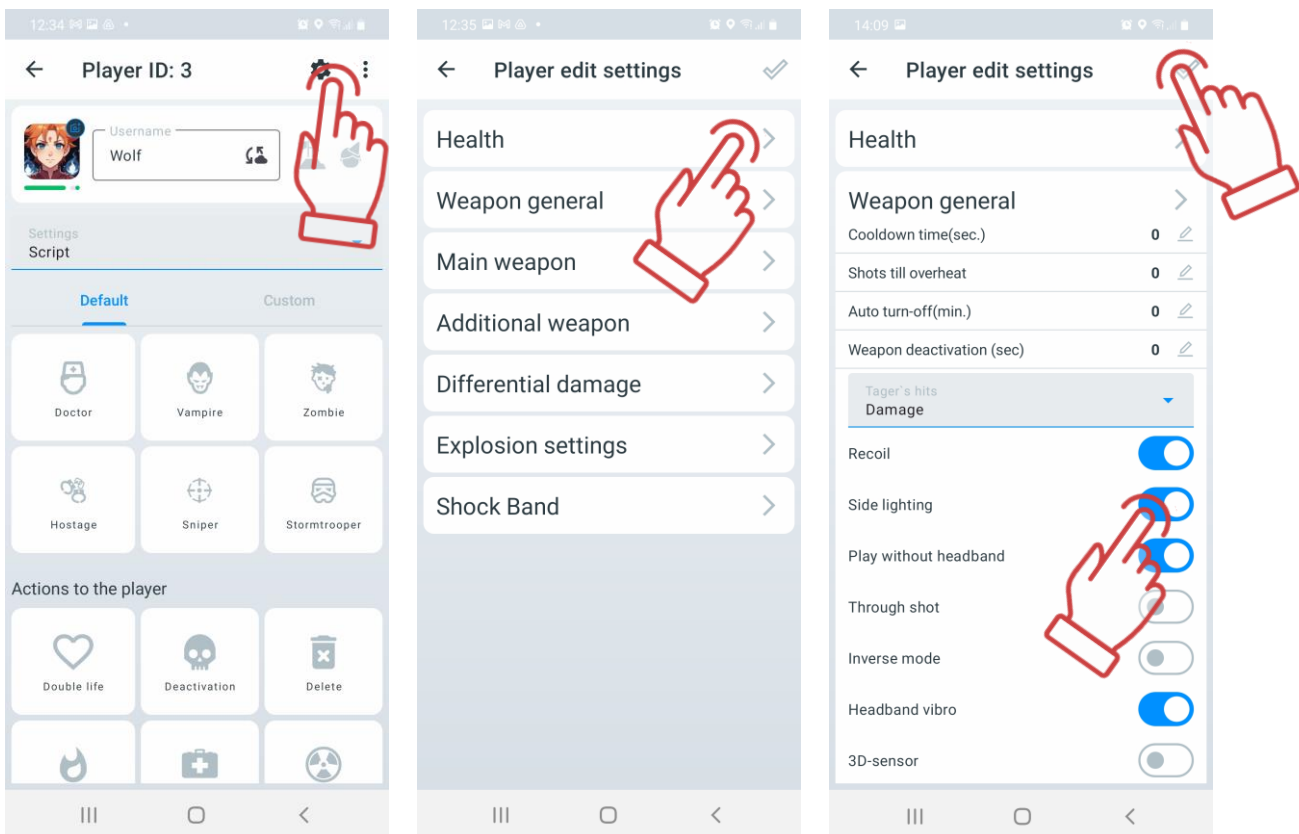
- 1) Click the arrow to the right of "Settings" .
- 2) From the dropdown menu, select a settings type:
 - Scenario Settings – uses the standard scenario settings.
 - Custom Settings – applies individual scenario settings.
 - Preset Settings – applies the settings of a selected preset.
 - Remote Control (currently in development).

Note: If parameters are changed in the player card, the settings type will automatically switch accordingly.

1.3.3.10.5. Individual Player Parameters

To modify a player's parameters:

- 1) Click the  in the top-right corner of the window. The individual settings menu will open, displaying options corresponding to the scenario's team settings.
- 2) To expand a section, click its name or the arrow next to it .
- 3) To modify a specific parameter within a section, click its name – a window will appear where you can make changes or toggle the switch ( -Active /  -Inactive).
- 4) To apply the changes, click the  in the top-right corner of the window.



After saving, you will return to the player card settings page, where "Custom Settings" will be automatically selected in the Settings menu.

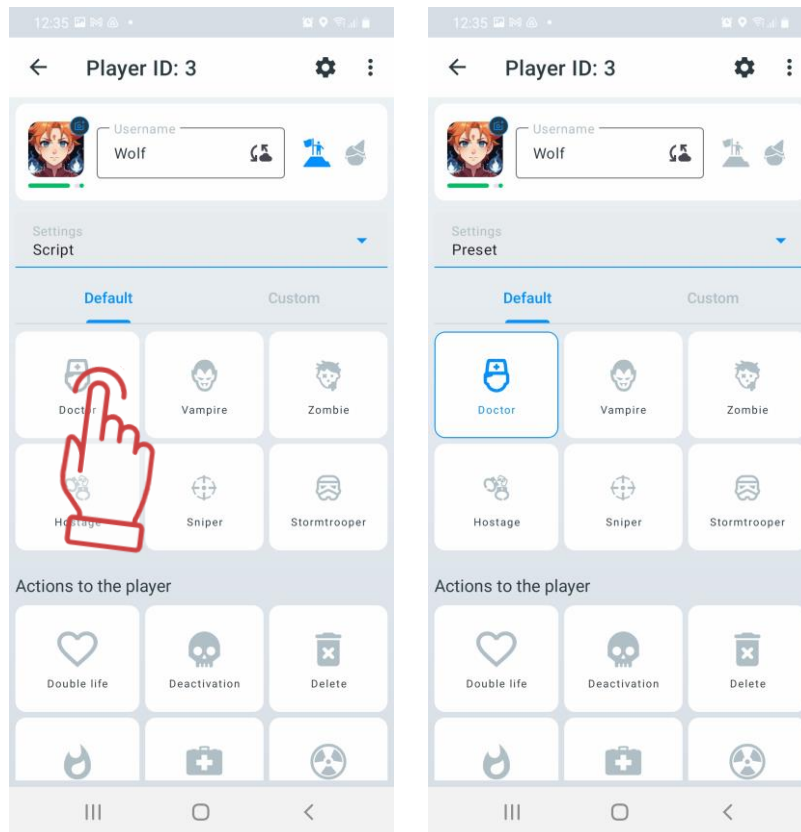
A video tutorial on customising player settings is available by clicking [here](#) or via QR code.



1.3.3.10.6. Applying a Preset to a Player

To apply a preset:

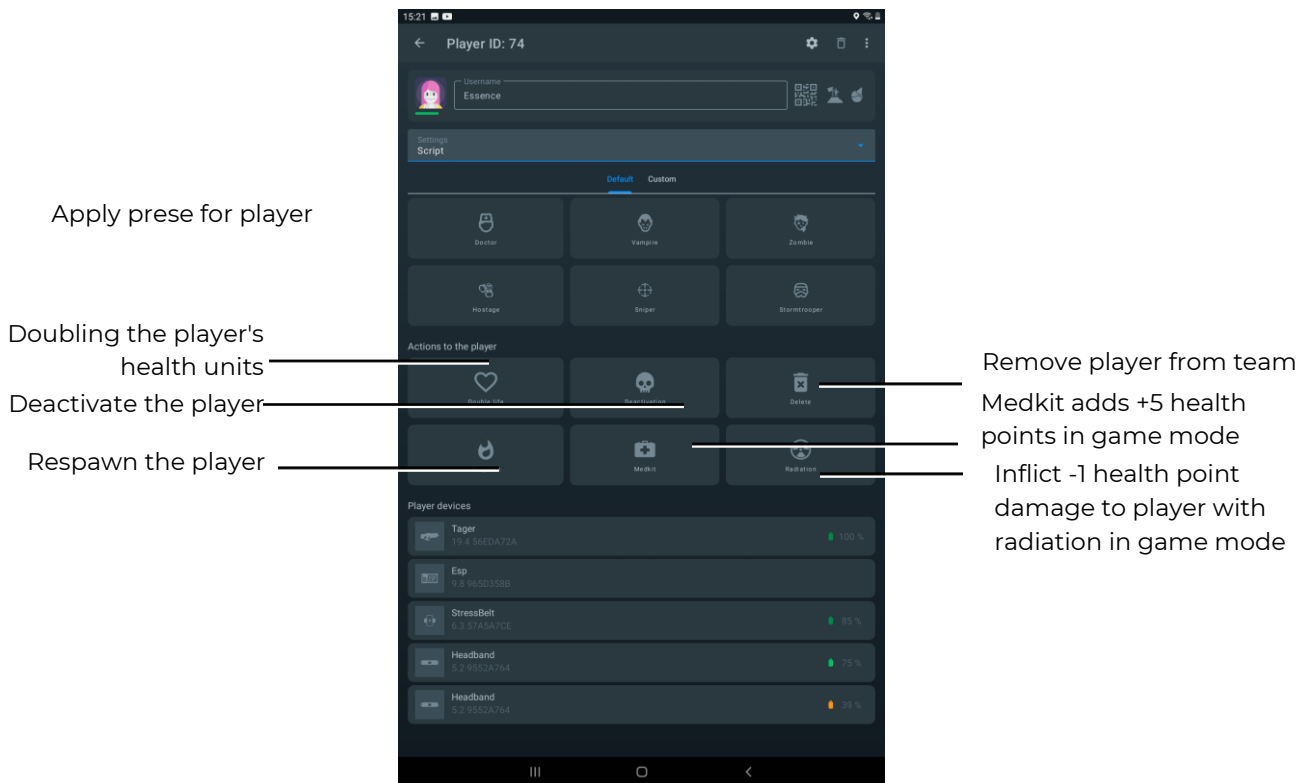
- 1) Select either the "Default" or "Custom" tab.
- 2) Click on the preset icon with its name.
- 3) Once the preset is applied, the icon will be highlighted in blue, and "Preset Settings" will be automatically selected in the Settings menu.



To revert to scenario settings, click the selected preset icon again or choose "Scenario Settings" in the Settings menu.

1.3.3.10.7. Applying Actions to a Player

Quick Command box that allows you to send a protocol command to the selected set directly from the server will be located below.



When selected (by pressing the corresponding button), the icon will be highlighted in blue.

The Deactivate function is used only during the round to deactivate the selected player.

The Double Life function is only used during the round to double the player's health. For example, if the player currently has 75 health, clicking the Double Life button will increase the player's health to 150. After another click, the player's health will be 300, and so on.

The Radiation function is only used during the round to hit a specific player with radiation. This function is not turned off, but accepted in real time. The number of units lost is equal to the number of times you click the Radiation button. Each click costs the player 1 health.

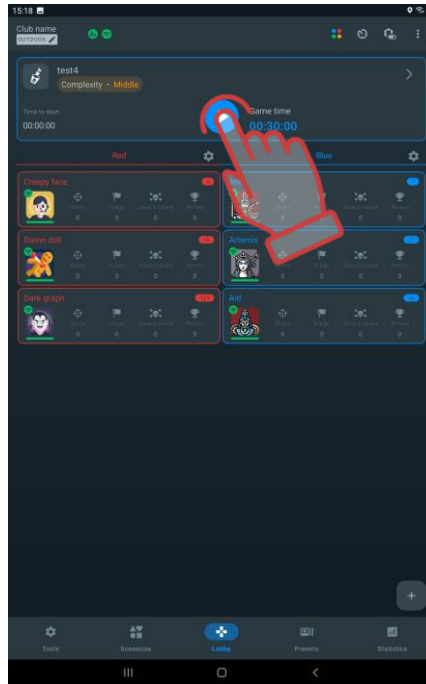
The Medicine function is used during the round to restore health to the selected player. Health is added up to 100 units. No health is added if the player already has 1 unit of health. The Medicine function does not turn off in real time (during the game) and each click on the Medicine button adds 1 unit of health to the player.

The Rebirth feature is used during a round to respawn the player to continue the game.

The Delete function is used to remove a player.

1.3.3.11. Game Start

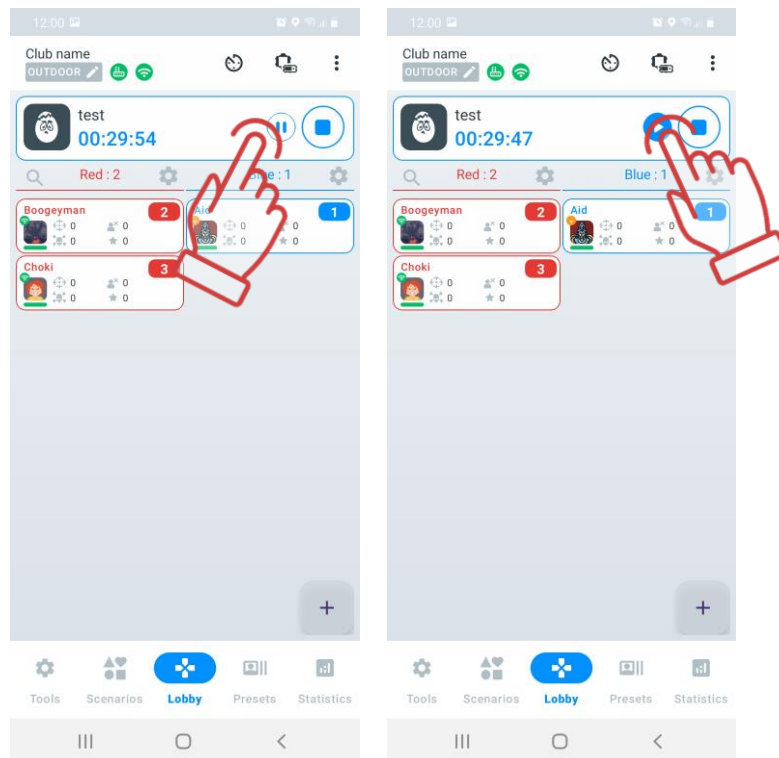
Once you have added players to the teams and changed the player and timer settings if necessary, you can start the game by clicking Start.



Attention: It is not recommended to change settings using the remote control (RC) during the game or between rounds when using the server. This may lead to incorrect equipment configurations and errors in statistics!

1.3.3.12. Pause

For Kits starting from firmware version 19.5, after the start it is possible not only to finish the game, but also to pause the game for some time. Instead of the “Start” button, two buttons appear at once - the “Pause” button and the “Stop” button. The game is paused/restarted/ended by pressing the corresponding button in the menu.



The Lasertag Tv-Out application also shows that the game is paused (see section 2.3.4).

! Warning! If the firmware of the tagger is lower than 19.5, the game will pause in the application, but the timer will continue to work on the taggers themselves and pausing will not happen, players can continue to interact, which may lead to errors in the game statistics. Before using the pause function, we recommend updating the firmware after contacting the company's technical support.

1.3.3.13. Finishing the game

The term GAME means a gameplay in which the same teams play a certain number of rounds. It can be either one or several rounds.










ROUND is a gameplay with a certain scenario, limited either by time frames, or ending when a condition specified in the scenario occurs (capture of DB, reaching a specified level of points, etc.).

The round can also end forcibly - by pressing the STOP button in the main menu, which appears in place of the START button.

After the end of the game round, access to full statistics is provided through the 'Statistics' menu (see section 1.3.5). To return to the main menu, press the 'Lobby' button located at the bottom of the screen.

Pressing the 'Start' button will launch the game with the same team composition, parameters, and game conditions that were applied in the previous game.

This screen also displays player cards with personal information, which you can use to perform the following actions:

-  – change player's name;
-  – change player's ID;
- Monitor the Wi-Fi signal strength:
 -  – high;
 -  – medium;
 -  – low;
 -  – none.
-  – monitor the level of player health;
-  – monitor the connection of devices;
-  – monitor the charge level of devices.

Game logs (actions) should be viewed from bottom to top.

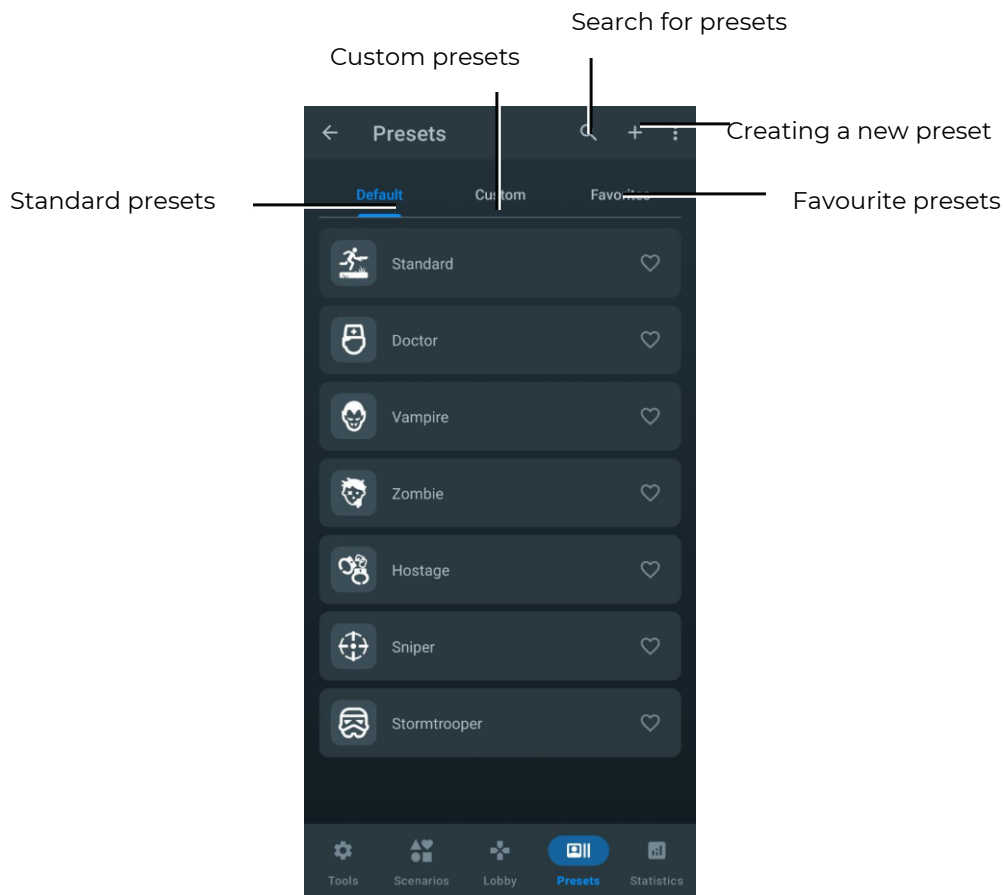


The display shows:

- world time, and then at what minute of world time the game actions were performed.
- Game events from the list configured in section 1.3.3.5 (at what minute of the round and which of the two teams performed the game actions. Blue and red are the colours of the teams. Thor and Frash are the names of the teams).

1.3.4. Presets tab

Presets are ready-made setups that can be quickly assigned to individual players after connecting devices to the app.



If the game is controlled from a tablet, the kits connected to the server receive the settings set in the Lasertag Operator application.

Factory settings are used by default, but you can create your own presets.

Moreover, it is possible to do this without kits connected to the server.

When connecting to LTO, sets with previously assigned presets from the remote control immediately apply the scenario settings of the last activated scenario. Depending on the settings applied - a default preset, a custom preset, changing individual settings for a set or applying a preset to the whole team - a notification will appear in the Settings box in the window when you click on the player icon.

The Presets section contains three tabs:

- Default – Standard presets that cannot be changed or deleted;
- Custom – A tab for creating and storing your own presets;
- Favorites – The tab that contains the presets that the user has added to their favourites.

1.3.4.1. Default

The LTO mobile app has 7 built-in presets that give the kit specific abilities.

By clicking on the appropriate icon, the player can choose one of the following roles: Doctor, Vampire, Zombie, Hostage, Sniper, Stormtrooper or Standard. In this case, the selected icon will become brighter, highlighting the preset you have chosen.

The following settings are recommended for different types of weapons:

Damage type/ Parameter	Dama- ge, health units	Auto- reload	Recha- r-ging time, sec	Fri- endly fire	Endless maga- zines	Number of maga- zines, pcs.	Number of cartridges in magazine, pcs.	Shots in the burst, pcs.	Speed of fire, shots/ min	IR- beam power, %
Falcon	25	-	2,0	-	-	10	30	3	565	40
Assault rifle	25	-	3.0	-	-	10	30	3	565	40
Grenade	100	-	6.0	-	-	3	1	1	100	30
Sniper	100	-	4.0	-	-	5	10	1	30	100
Gun	25	-	2.0	-	-	3	15	1	180	50
Healing	25	-	2.0	-	-	10	30	1	300	40
Vampire	25	-	2.0	-	-	10	30	1	300	40
Zombie	50	-	2.0	-	☐	10	30	1	300	40
RPK	50	-	3.0	-	-	10	45	3	565	40
Radiation	25	☐	2.0	-	☐	10	30	1	300	40
Hostage	0	☐	2.0	☐	☐	100	100	3	565	2

1.3.4.1.1. Doctor preset



Doctor: Restores health with your main weapon and deals damage with an additional weapon - a pistol.

By default, Doctor has 100 health. He has two weapons - a first aid kit, which restores 25 health when hit by a team member, and a pistol (15 damage).

1.3.4.1.2. Vampire preset



Vampire: A player who regains health by inflicting damage on opponents. Radiation replenishes the health of the player playing with this preset.

In the factory settings, Vampire has 250 health.

It has one weapon - a bite, which not only takes 25 health units from the opponent player, but also attaches them to itself. The peculiarity of this preset is that during the game the kit loses 1 unit of health every 5 seconds (the so-called "thirst"), as well as the fact that radiation adds units of health to it, and the Medkit takes away.

1.3.4.1.3. Zombie preset



Zombie: Deals heavy damage by turning players into zombies that can infect other players. Radiation restores health.

In the factory settings, Zombie has 100 health units.

By default, the scenario settings for the "Zombie" role are configured with the "Infection" parameter, meaning that when a zombie hits a player, they transform into a zombie and join the zombie team.

If friendly fire is enabled, zombies can attack their allies. However, if both infected players are on the same team and use the "Zombie" preset (custom or default), they cannot damage each other or become re-infected.

A player can only be infected once. Re-infection is impossible due to immunity. If a player leaves the game or disconnects from the server during gameplay, their infected status will be preserved upon reconnecting. When infected, the player receives the same settings as the "Zombie" that shot him, if he is connected to the server. When playing the game without a server, the settings of the default Zombie preset are applied.

It has an inverse glow of the kit - the headband or vest is constantly glowing. Doesn't respawn. Doesn't hit zombies. Just like a vampire, radiation adds health units, and a Medkit takes away. In firmware version 19.4 and higher zombies have the ability to kill zombies in the

opponent team. However, the damage done and received in the statistics may not be displayed correctly.

1.3.4.1.4. Hostage preset



Hostage: A story role in which a player must be transported unharmed from one point on the field to another. Their weapon cannot harm other players, but they can be hit by all of them.

In the factory settings, Hostage has 300 units of health.

The weapon is a recorder, with which the hostage is marked upon reaching the final point of the route. The glow color of the kit is purple. Can be hit and healed (with kits as a Medic) by players of any team.

1.3.4.1.5. Sniper preset



Sniper: Deals high damage with a sniper rifle with a long reload time. The second weapon is a pistol.

In the factory settings, Sniper has 100 health, two weapons - a sniper rifle (100 damage) and a pistol (25 damage). Strikes players of any team, including own one.

1.3.4.1.6. Stormtrooper preset



Stormtrooper: Armed with an assault rifle with medium damage. The second weapon is a grenade launcher.

In the factory settings, Stormtrooper has 100 units of health. Only affects players of other teams. Has two weapons - an assault rifle (damage 25 units), which shoots in bursts, and an under-barrel grenade launcher, which has 6 sec. of recharge, but damage is 100 units.

1.3.4.1.7. Standard preset



Standard: Fast game mode.

In the factory settings, a player with the standard preset has 100 health. The weapon is an assault rifle with medium damage. Treatment - the influence of the doctor.

1.3.4.2. Custom

This tab contains the presets you have created. You can create presets based on the built-in standard presets.


A video tutorial on how to create a custom preset is available at the [link](#) or via QR code.

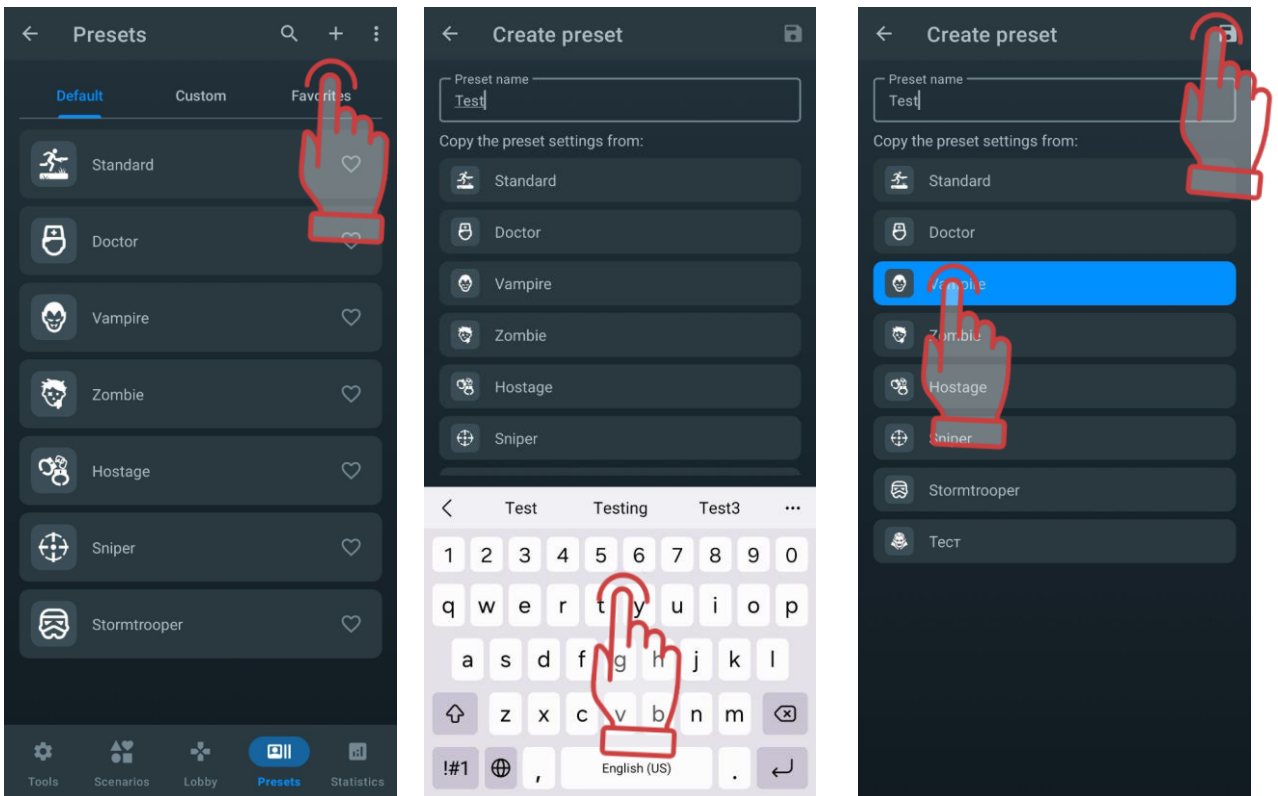


1.3.4.2.1. Creating your own presets

To create your own preset, click the button  located in the upper right corner of the window.

In the Preset Name field of the window that opens, enter the name of the preset and select the preset from the list of default presets on which the new preset will be based.

To confirm, click the disc button  in the top right-hand corner of the window.



In the window that opens, you need to set the new preset settings.

To change the icon of a new preset, click on the preset icon and select a new icon in the window that opens.

In the Description field, you can change the short description of the preset, select the base role from the drop-down list below, and customise the settings.

The role selection algorithm is described in paragraph 1.3.4.2.1.1.

To open each setting, click on the arrow button .

The settings table is similar to the individual settings table.

If you do not configure any of the suggested parameters, the value of the internal, unconfigured parameters will be 0 or set by the application by default.

To edit the values of the parameters, click on the icon , and then you can set and adjust the values as needed.


Each preset can be assigned 2 virtual weapons. Each type of weapon has a different effect (adding or subtracting health) and a different sound.

! If the player has two weapons in the preset, to switch between them, hold down the reload button on the tagger for 3 seconds until you hear a beep.

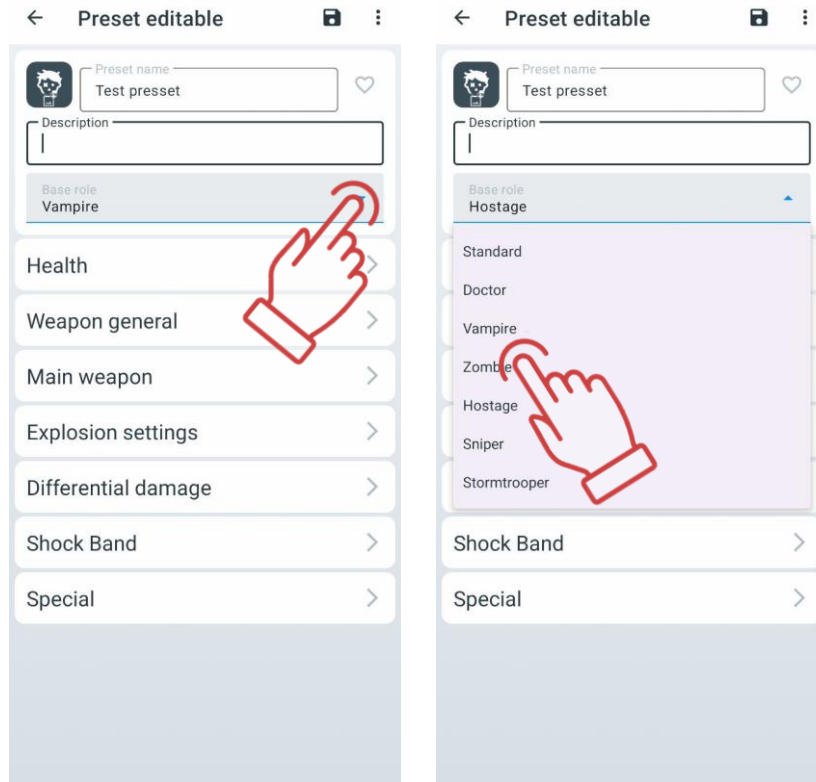
1.3.4.2.1.1. Configuring "Zombie" and "Vampire" Roles


To activate the "Zombie" or "Vampire" role, which were previously selectable through team scenario settings or individual player settings, you now need to select the corresponding role in the preset settings. To do this:

1. Click on the name of the desired preset to open its settings.

2. Locate the "Base Role" parameter and click the button  to the right of the role name.
3. Select the desired role from the drop-down list.

Note: After selecting the "Vampire" or "Zombie" role, it will no longer be possible to change the type of damage in the additional weapon settings!





To save the settings, click on the button .

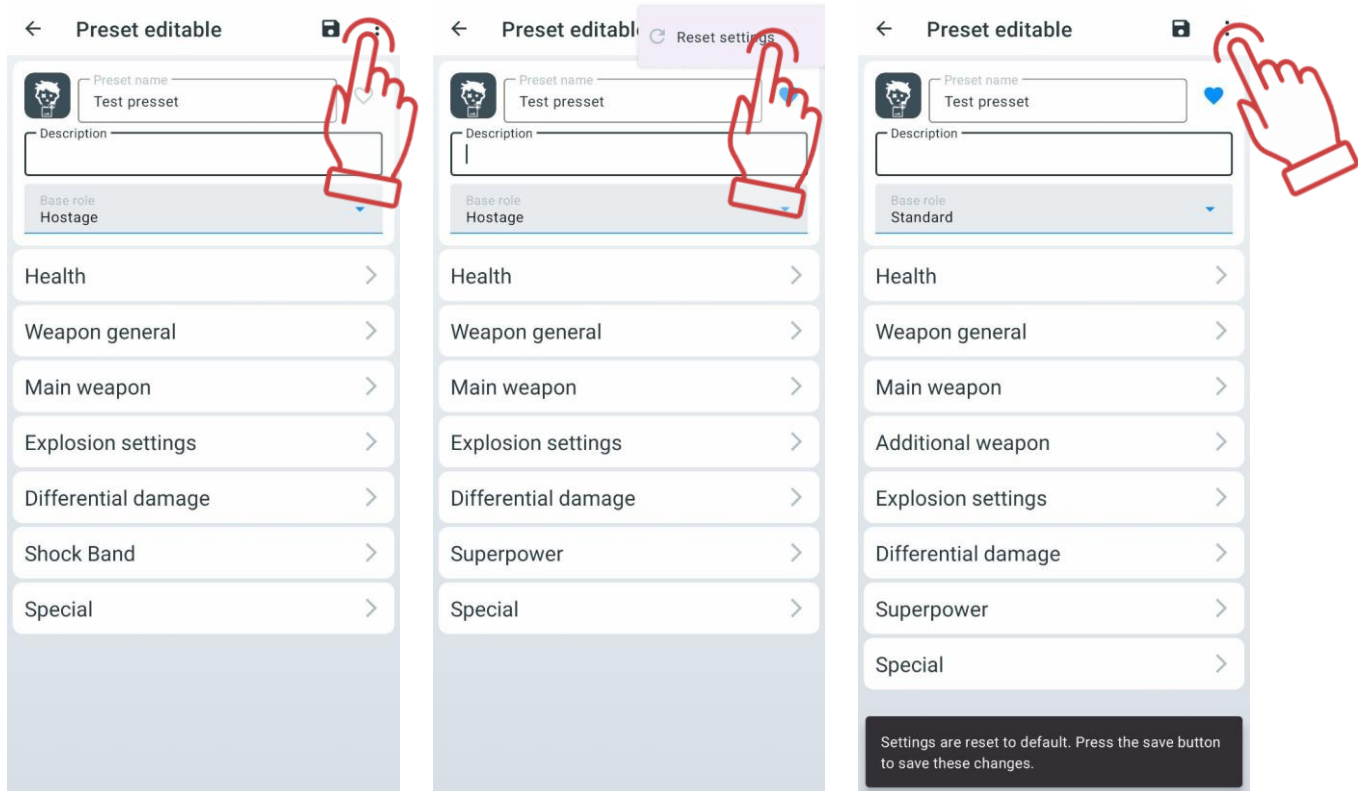
Settings can be selected both before the round and changed during the running game. If the scenario does not change between rounds, then the individual settings are saved for the next game.

1.3.4.2.2. Resetting Preset Settings



Resetting a preset's settings is necessary to return the player to the default preset configuration corresponding to the base role.

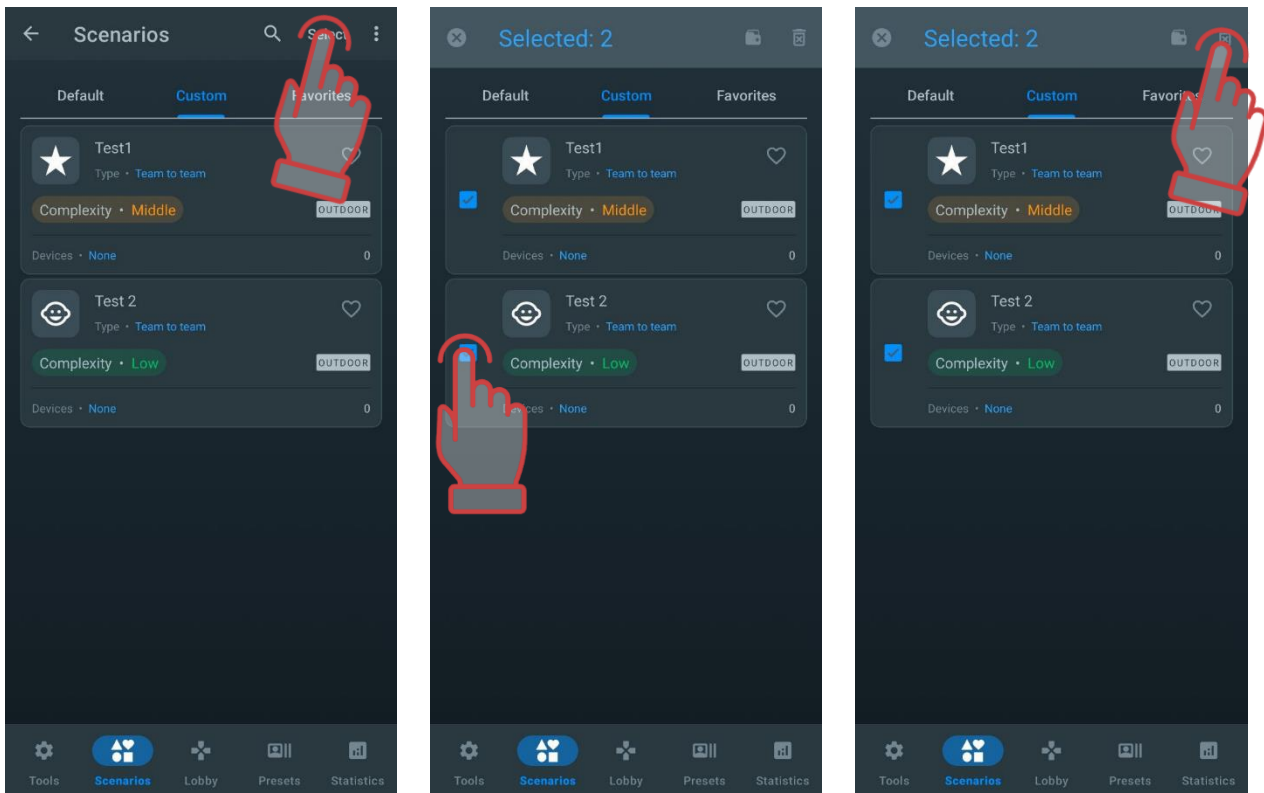
To reset a preset's settings:

1. Open the preset settings menu by briefly clicking on its name.
2. In the upper-right corner of the screen, click the button .
3. From the dropdown menu, select "Reset Settings."
4. To save the changes, click the  button in the upper-right corner of the window.




1.3.4.2.3. Exporting and deleting preset

To export or delete presets created manually, you need to go to the "Custom" tab, click on "Select", check the necessary files, and then press the corresponding button in the top right corner of the window ( for export,  for delete).



1.3.4.3. Favorites

The Favorites tab allows you to quickly find and easily manage your favorite presets, as it's designed to store your favorite or most used presets. Clicking the heart icon  next to a preset name automatically adds it to that tab. When you click on the heart, it turns blue to indicate that it is the selected preset.

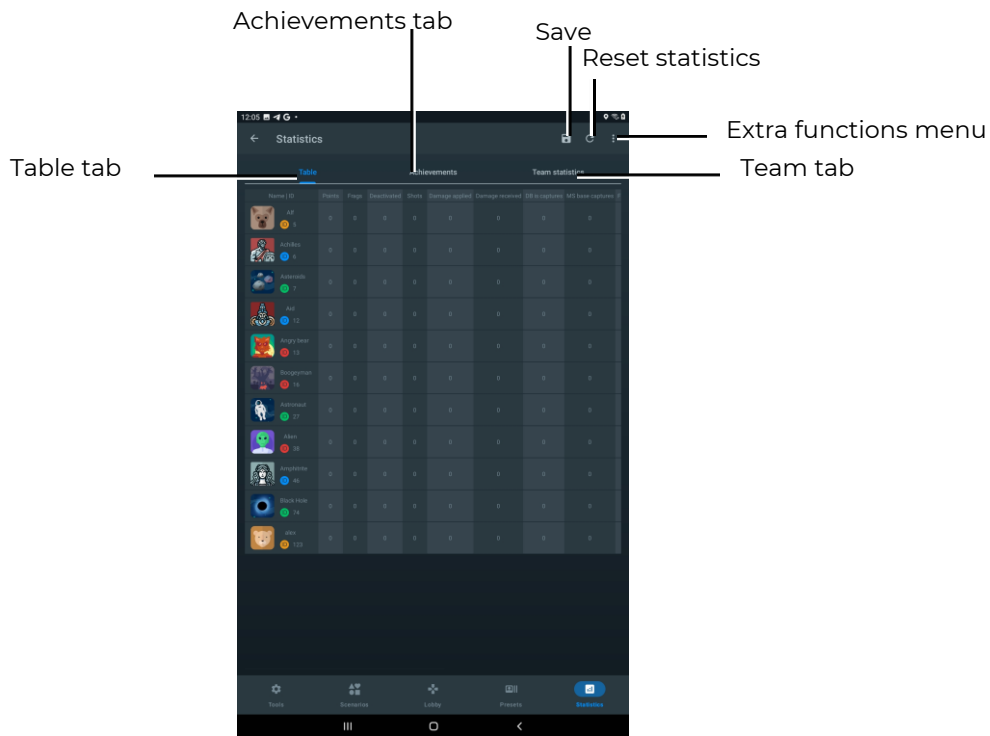
You can add both standard presets and ones you've created yourself to Favorites.


To remove a preset from Favorites, click the heart icon  again.


1.3.5. Statistics tab


The Statistics window contains the Table, Achievements and Team tabs. These tabs are opened by clicking on their names. When you click on it, the selected tab is highlighted in blue.

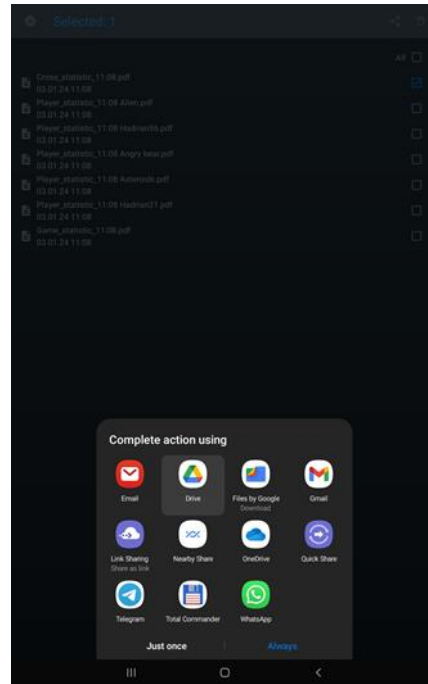
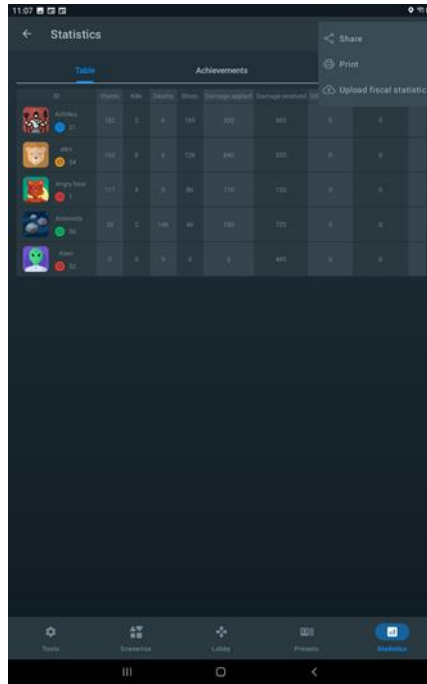
You can view the overall game statistics of all players and team statistics both during the game and after its completion.



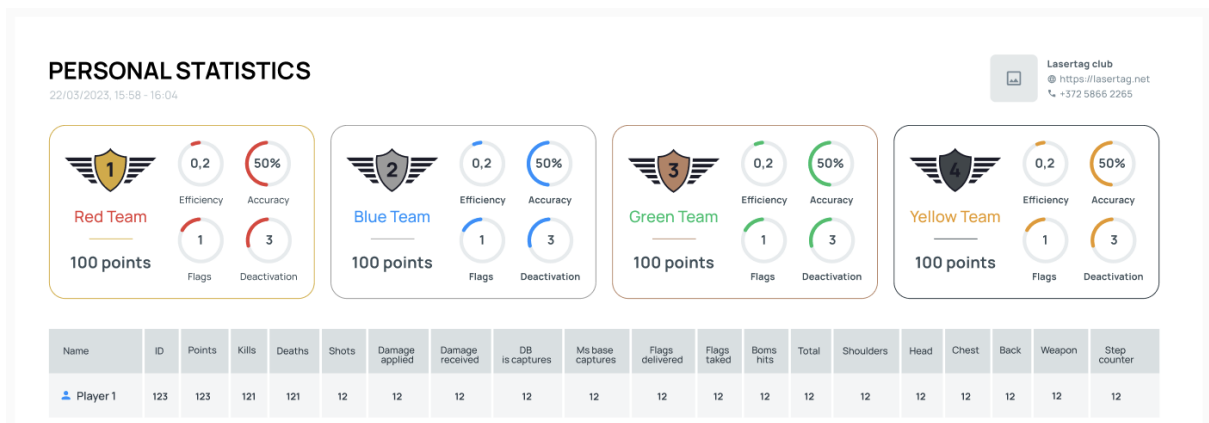
To save the stats to your mobile device, click on the button . The stats are saved to a PDF file.

To reset (clear) all the statistics that were recorded during the game, press the button .

To share/print/send the final stats for all players, click on the button  and select the desired action from the menu that opens.



The printed statistics on the form will look as follows:



On the personal and team statistics forms, in addition to information about ratings, achievements, and other metrics, the club information will be displayed in the upper right corner, provided it was previously entered in the "Options" section of the settings menu.

If the club information is not displayed, follow the steps outlined in section 1.3.1.4 of this instruction.

1.3.5.1. Table

The TABLE tab in real time and at the end of the game shows for each kit participating in the game, the number of frags, shots fired, captures of Domination Boxes, points scored, damage done and received. The table also displays the number of captured, lost and fetched flags, bomb shots and differential damage.

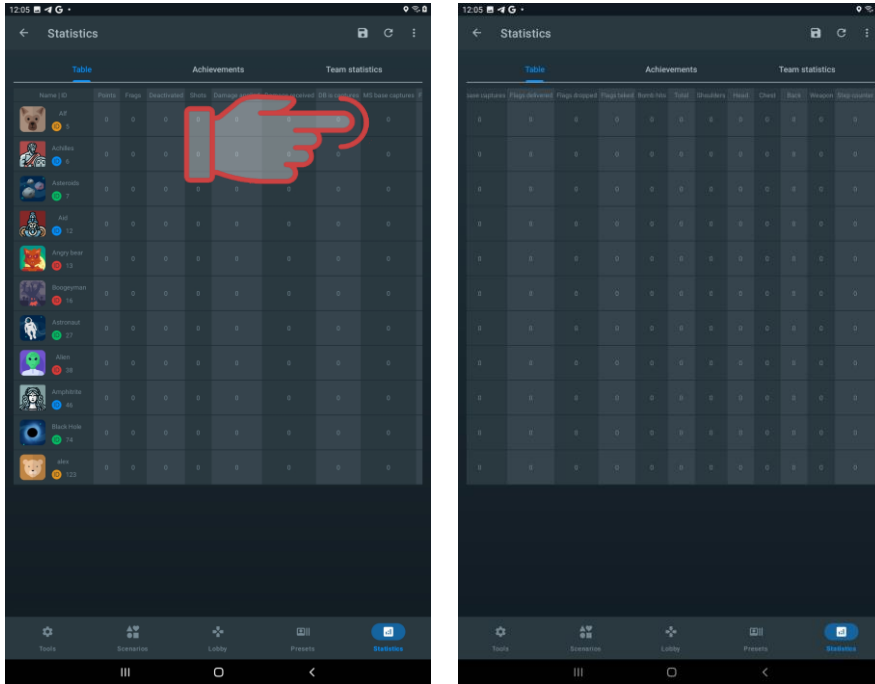
The stats table will be empty if no players have been added to the game. If players have been added, the table will display the players sorted by the player's kit ID.

When the first actions are taken by the players, the table will automatically redistribute the players who have results in the game and move them up the table. Advancement is based on the number of points scored.

At the end of the game, the table will generate the final stats of the players' actions, displaying the success of each player from the two teams from top to bottom. The players who have scored the most points will be at the top of the table, and the players who have performed the least number of successful actions will be at the bottom of the table.

At the end of the game, the table will also show the winning team. Each player in the table will be highlighted in the colour of their team (blue, red, yellow, green).

To see the full stats, swipe from left to right.




1.3.5.2. Achievements

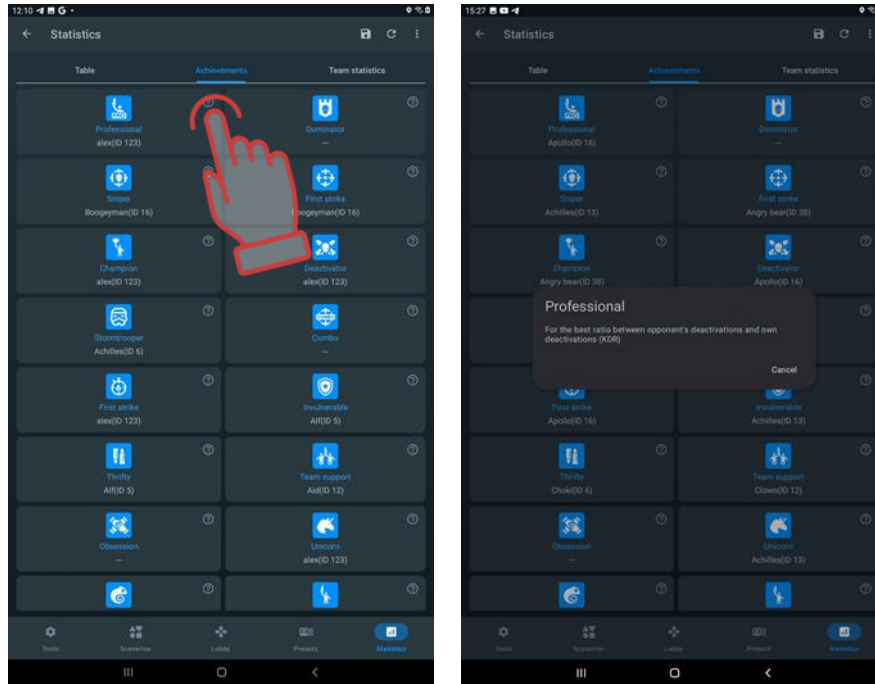
The achievements tab displays the current comic nominations depending on game indicators - accuracy, number of hits, number of points scored, etc.

Achievement statistics will only be available after the end of the game round and will show achievements for players from two teams (or more than two, depending on the scenario settings). Multiple players can be ranked in one of the suggested categories for best achievements.

The tab will show:

- names of achievements;
- brief description of the achievement;
- player's name.

When you click on the icon in the form of a question mark , located in the top right corner of the nomination tile, a window with the description of the nomination opens.



1.3.5.2.1. List of achievements of the nomination assigned to players



Professional. This title is awarded to the player with the highest KDR (Kill-Death Ratio), which is a numerical parameter equal to the number of eliminations performed by the selected player divided by the number of eliminations by opponents. In case of a tie, the winner is determined based on the maximum number of game points.



Champion. This accolade is bestowed upon the player who has accumulated the highest number of points during the game. Different criteria for awarding game points apply in each scenario.



Dominator. This title is granted to the player with the highest number of captured bases, specifically: capturing Control Points, Multistations set to "Base" mode. The statistics will consider how many times a player successfully captures an opponent's base (inflicting damage to it with shots to render it inoperative). If a player inflicts the most damage to a base, they are awarded this achievement.



Deactivator. The achievement is awarded to the player who has achieved the maximum number of opponent eliminations. In case of a tie, the winner is determined based on the maximum number of game points.



Sniper. The achievement is awarded to the player who inflicts damage to opponents with the highest precision, calculated as accurate shots made divided by all shots taken. In case of a tie, the winner is determined based on the maximum number of game points.



Stormtrooper. The achievement is awarded to the player for successfully thwarting enemy attacks that come too close to allied bases. The statistics will track hits and eliminations of enemies attempting to capture the base. In case of a tie, the winner is determined based on the maximum number of game points.



Combo. The achievement is awarded to the player who, throughout the game scenario until their deactivation, manages to execute a combo of in-game actions. These actions include hits, eliminations, and capturing the opponent's base (achievement for scenarios involving base capture). The number of attempts during the scenario is not limited. The calculation is based on the most successful attempt by a single player. In case of a tie, the winner is determined based on the maximum number of game points.



First strike. The achievement is earned by the player who achieves the highest number of eliminations within the first minute of the game scenario starting. In case of a tie, the winner is determined based on the maximum number of game points, with the condition that the number of points cannot be zero.



Invulnerable. The achievement is awarded to the player who receives the least amount of damage during the round of the game.



Thrifty. This title is awarded to the player who has made the fewest number of shots in the game. The number of shots must be greater than 0. In case of a tie, the winner is determined based on the maximum number of game points.



Team Support. The achievement is awarded to the player who has provided assistance in deactivating the opponent on three occasions. This means that the nominee's ally failed to deactivate the opponent (only managing to injure them), while the player who receives this accolade successfully deactivated the opponent entirely.



Sapper. This achievement is granted to the player who successfully defuses the highest number of bombs (for scenarios utilizing the SUPERNOVA Bomb device). In case of a tie, the winner is determined based on the maximum number of game points.



Friendly fire man. The achievement is awarded to the player who inflicts the most damage on their teammates (this achievement will be in scenarios where friendly fire is enabled). In case of a tie, the winner is determined based on the maximum number of game points.



Miner. This achievement is awarded to the player who successfully defuses the highest number of bombs (in scenarios utilizing the SUPERNOVA Bomb device). In case of a tie, the winner is determined based on the maximum number of game points.



First Shot. The achievement is awarded to the player who first hits an opponent. The statistics record the first in-game action in the round, which can also include deactivating an opponent with the first shot.



Break through. The achievement is awarded to the player who, at the beginning of the game scenario, manages to deactivate 3 opponents within the first minute of the game without being personally deactivated (killed). In case of a tie, the winner is determined based on the maximum number of game points.



Leader. This achievement is assigned to one individual within a team. The achievement is granted by the instructor who conducts the game. While observing the game, the instructor can identify a player who serves as the leader or captain for their team. This achievement is at the discretion of the instructor.



Last hero. The achievement is awarded to the player who remains the last survivor from their team at the end of the round. The number of players on the team must be greater than 1. In case of a tie, the winner is determined based on the maximum number of game points.



Unicorn. The achievement is awarded to the player who was not deactivated throughout the game scenario. In case of a tie, the winner is determined based on the maximum number of game points.



Phoenix. This achievement is awarded to the player who respawned at the base the most number of times. In case of a tie, the winner is determined based on the maximum number of game points.



Modest. The achievement is awarded to the player who, after the end of the game scenario, was unable to make any opponent deactivations. In case of a tie, the winner is determined based on the maximum number of game points, ensuring that the number of points cannot be 0.



Obsession. The achievement is awarded to the player who deactivates the same opponent 10 times within a single round of the game. In case of a tie, the winner is determined based on the maximum number of game points.



Laser Hero. This nomination is automatically given to every player who has not been assigned any other nomination. Essentially, it is recognition for participating in the game when other achievements are absent.



Birthday person. This achievement is awarded to one person on the game field – the birthday celebrant. The achievement is granted by the instructor who conducts the game. The achievement can be assigned to multiple players.

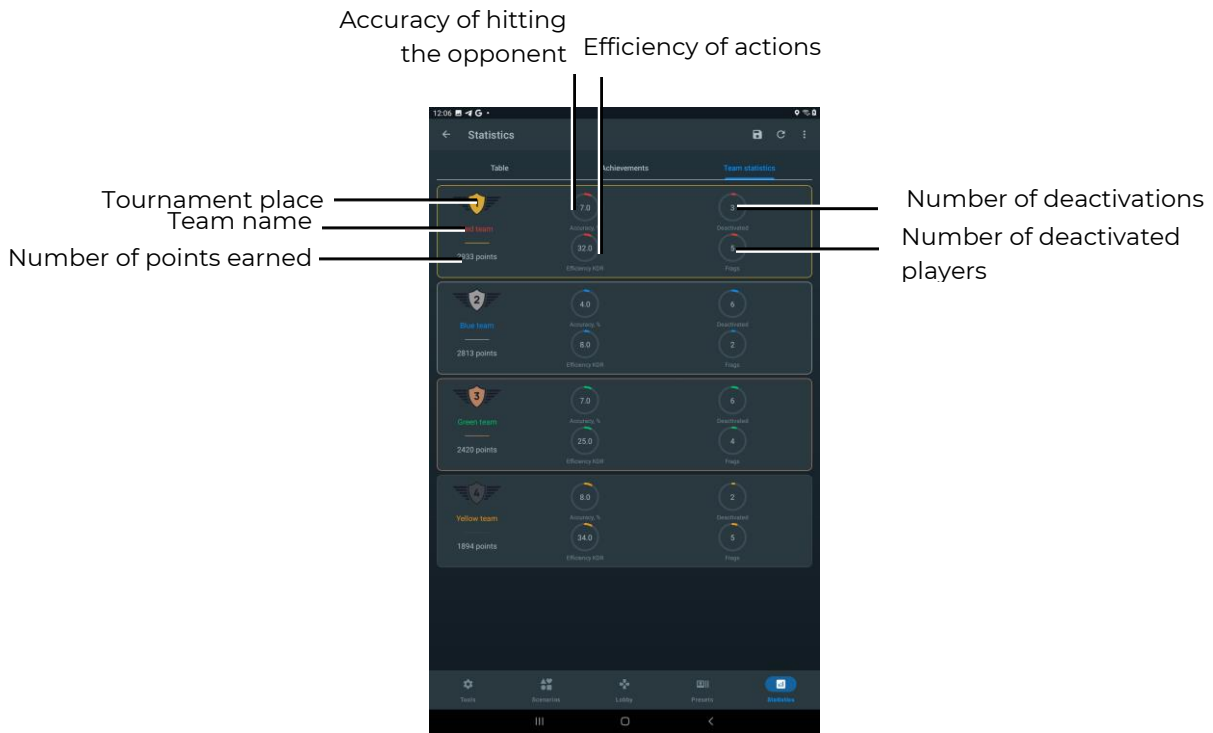
1.3.5.3. Team

The Team tab displays team stats.

At the end of the match, statistics analyses each team's performance, then summarizes the data and provides the team stats.

At the end of the game, the teams take places:

- 1st place - gold medal;
- 2nd place - silver medal;
- 3rd place - bronze medal;
- 4th place - iron medal.



2. Streaming stats on an external screen using the Lasertag Tv-Out app

The app is installed on android set-top boxes.

Minimum requirements for installing the app:

- CPU 4-8 cores with a frequency of 2.0 Ghz+;
- RAM 4 GB
- ROM 16 GB
- Android operating system version 10.0 and higher.

If you are using a set-top box with a version lower than 10.0, the animations provided by the Lasertag Tv-Out app will not be displayed.

Before selecting an Android set-top box, you need to check the availability of Google Play services for the chosen model. The list of models with supported services is available at the following link: https://storage.googleapis.com/play_public/supported_devices.html The list is updated regularly. For convenience, you can use the QR code:



Note: If the device is not on this list, issues with installing the application on the set-top box may occur!

A list of Android set-top boxes that customers can use:

- A95X F3 Air (Amlogic S905X3, 2-4GB/16-32GB, LAN, Android 10.0);
- A95X F4 (Amlogic S905X4, 2-4GB/16-32GB, LAN, Android 10.0);
- H96 Max (Rockchip RK3318, 2-4/16-64, LAN, Android 10.0);
- H96 Max X3 (Amlogic S905X3, 4GB/32GB, LAN, Android 10.0);
- Tanix W2 (Amlogic S905W2, 2GB/8GB, Android 11);
- TOX1 (Amlogic S905X3, 4GB/32GB, LAN, Android 10.0);
- UGOOS X3 Cube/Pro (Amlogic S905X3, 2-4GB/16-32GB, LAN, Android 10.0);
- X96 Max Plus (Amlogic S905X3, 2-4GB/16-32GB, LAN, Android 10.0);
- Xiaomi Mi Box S (Amlogic S905X-H, 2GB/8GB, LAN, Android 10.0) TV BOX.

In order for the Lasertag Tv-Out application to work correctly, you must install the app with a minimum screen resolution of:

- WUXGA – 1920x1200 px;
- 2K DCI (Cinema 2K) – 2048x1080 px;
- QWXGA – 2048x1152 px;
- QXGA – 2048x1536 px;
- UWHD – 2560x1080 px;
- WQXGA (WQHD) (QHD 2K) – 2560x1440 px.

2.1. Installing the Lasertag Tv-Out app

Installing the Lasertag Tv-Out app:

1. Connect the Android box to a Wi-Fi network with Internet access.



2. You can download the installation file of the "Lasertag Tv-Out" application from the following address: <https://lasertag.net/support> or from the Play Market application of the Lasertag Tv-Out application:



<https://play.google.com/store/apps/details?id=com.lasertag.tvout>

2.1 Launch the app store by clicking on the Play Market icon.

2.2 In the Play Market search field, enter the name of the app - Lasertag Tv-Out.

3. Press the Lasertag Tv-Out application icon.

4. After opening the menu with information about the application, press the "Install" button.

5. Launch the "LTO" application, then launch the "Lasertag Tv-Out" application. Both devices running the applications must be connected to the same access point with one of the following names: (LASERTAG, LASERTAG-NET, MGO, Test mode, OTK (in Latin letters), TechSupport).

If the connection is successful, Lasertag Tv-Out will be displayed on the screen:

- selected teams and players;
- the required scenario;
- game round parameters;
- extra devices.

2.2. Lasertag Tv-Out settings in the Lasertag Operator software

After installing and opening the Lasertag Tv-Out app in parallel with the LTO app, go to the Tools tab in the LTO app and open the Lasertag Tv-Out Settings option. If the connection is successful, the startup screen will appear on the monitor and the LTO app will display the correct connection settings in the Lasertag Tv-Out Settings parameter.

The functions that can be configured in the Tv-Out Settings menu are described in 1.3.1.7.


2.3. Lasertag Tv-Out app operation

To start the Lasertag Tv-Out app, click the application icon on the screen. The app will then start automatically. When the app starts, you will be greeted with the app loading screen. The duration of the download depends on the speed and stability of the Wi-Fi signal connection.



Download screen

After successfully connecting to the LTO and Lasertag Tv-Out apps via Wi-Fi, you will be taken to the pre-game screen.

If the image in the Lasertag Tv-Out app does not fill the entire width of the screen, you need to hide the navigation bar. To do this, press the button with the two down arrows  in the bottom left corner of the screen. This can be done with a computer mouse connected to the set-top box or from the Android set-top box's remote control.

2.3.1. Pre-game screen

When the kits are connected to the server, the screen displays the images of the players' tiles and the color of their team (teams are displayed depending on their allocations through the LTO app).

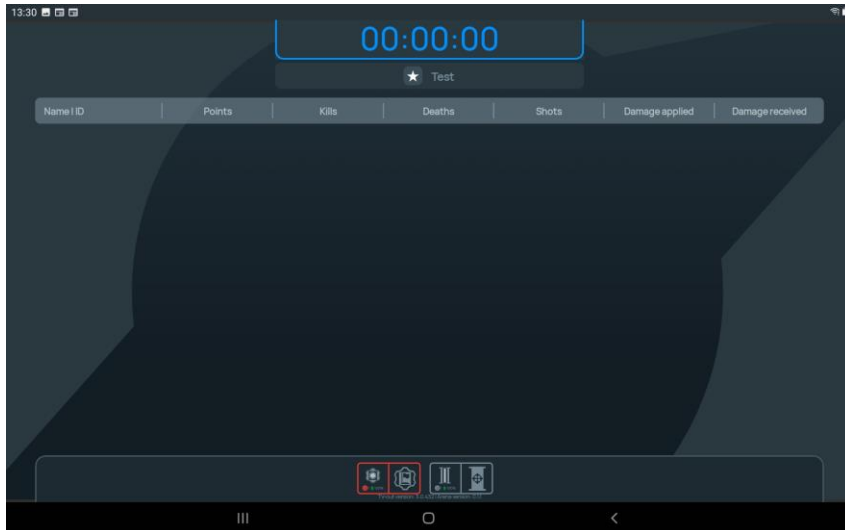
If you select a scenario with blue and red teams, the screen will display the colors of those teams, and the same applies to yellow and green teams. However, if there are a large number of participants, the teacher can divide the players into four teams, in which case all four teams will be displayed on the screen.

The Lasertag Tv-Out screen can only display 7 players from two teams or 3 players from the four teams and 10 additional devices. However, if the number of players and additional devices exceeds this limit, the software will automatically split the display into pages. The procedure for setting up the screen display is described in section 2.

A general view of the pre-game screens is shown in the figures below.



Display in the form of tiles



Pre-game screen. Display in the form of a table

The screen will remain blank until:

- players and additional devices are added;
- a game scenario is selected;
- the time of the game scenario is selected.

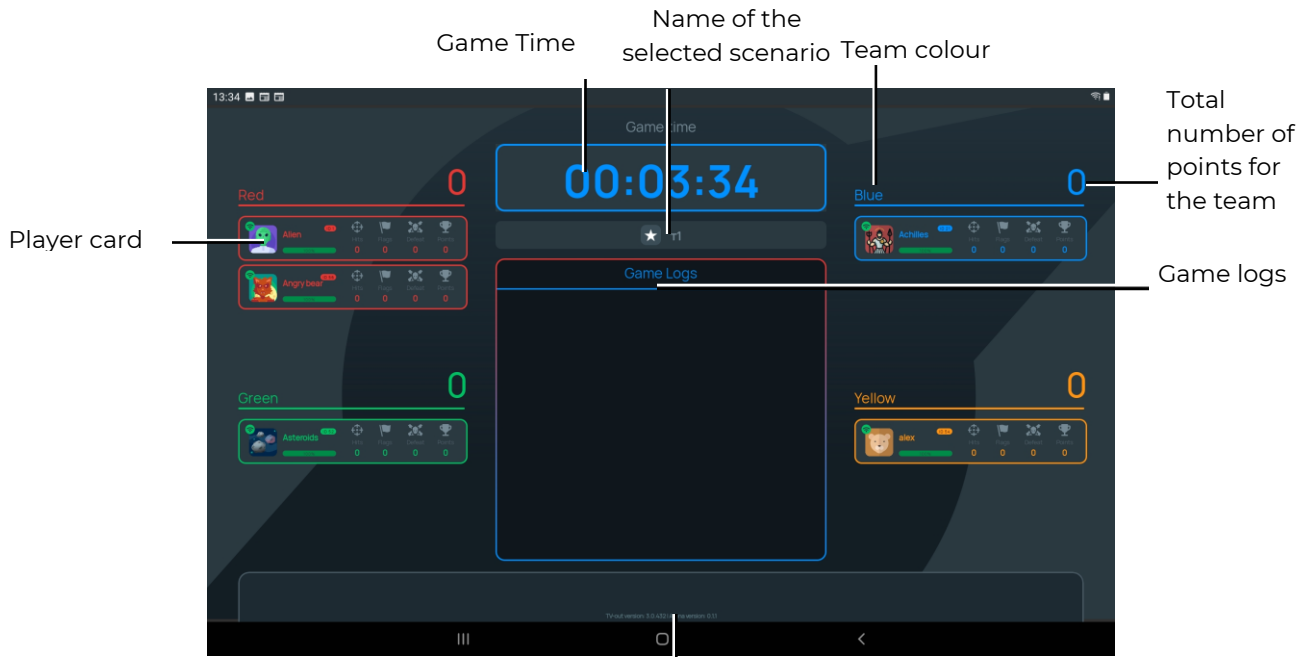
The central Game Logs tab will remain empty until the scenario is started and the first game events occur.

2.3.2. Pre-start screen

Once teams and additional devices have been added in the LTO app, the game round time (as well as the time before the game starts) has been set and the scenario has been selected, all these parameters are automatically displayed on the Lasertag Tv-Out screen.

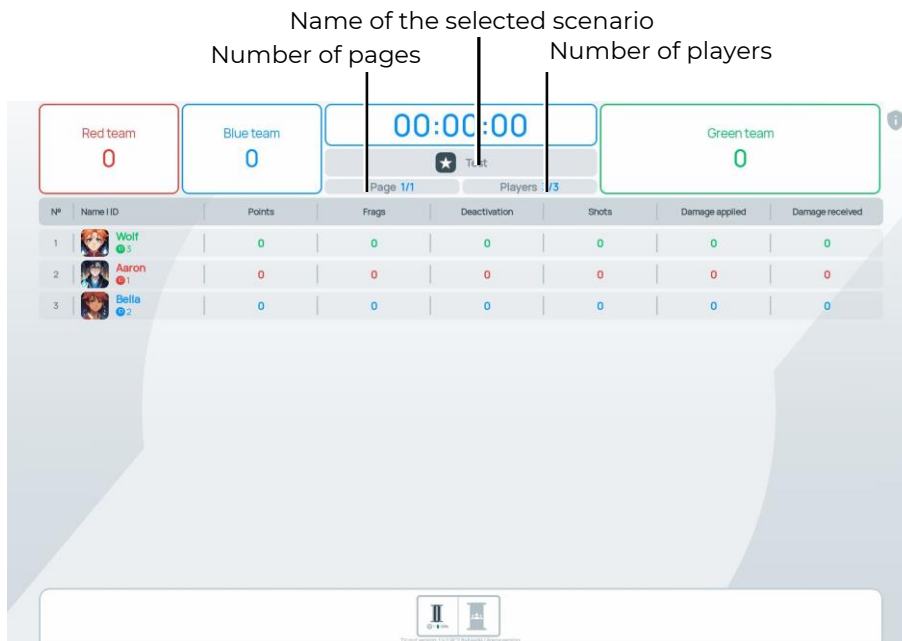
Each tile in the set shows the performance of each player in real time. If additional devices are used in the scenario, their tiles will also appear on the screen.

For screens with two, three, and four teams, the parameters are the same.



Additional devices added to the scenario

Pre-start screen for four teams. Display in the form of tiles

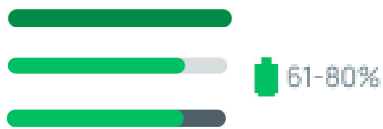










Pre-start screen for three teams. Display in the form of a table

A team's total score can be up to six digits. If players exceed this limit, the points will be displayed as a number + a letter, for example 18.6 mil.

The player's card shows:

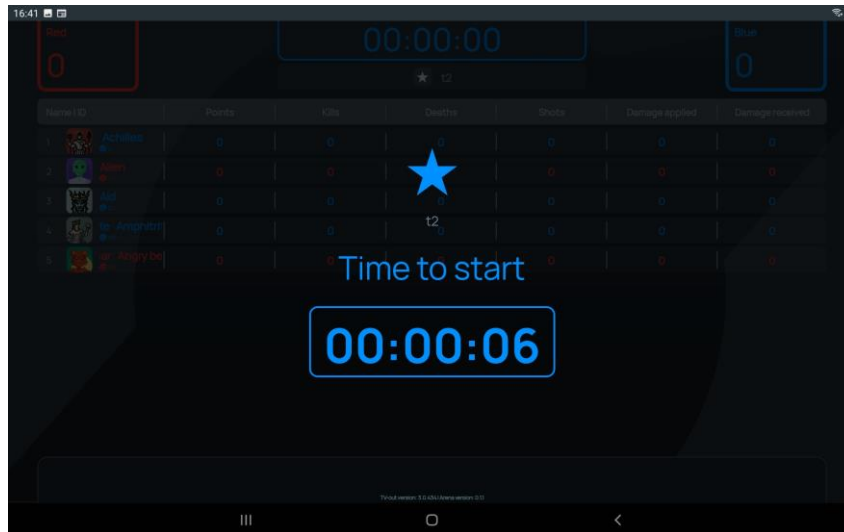
- player's name;
- battery level;



- Wi-Fi strength:
 - green  – stable signal;
 - orange  – medium signal;
 - red  – unstable signal;
 - grey  – no signal.
- personal performance of the player:
 -  – hitting an opponent with a shot;
 -  – deactivation of the opponent;
 -  – deactivation of the player with this card;
 -  – points earned by the player during the game;
 - ID 125 – player's ID.
- extra devices that are added to the scenario:
 - device ID;
 - battery level;
 - the mode in which the device operates and its capture rate.

2.3.3. Timer until the start of the game round

When the instructor clicks on the Start Game button in the LTO mobile app, an animated timer is displayed on the screen showing the time until the game starts, which will be accompanied by a voice countdown starting 10 seconds before the game starts.

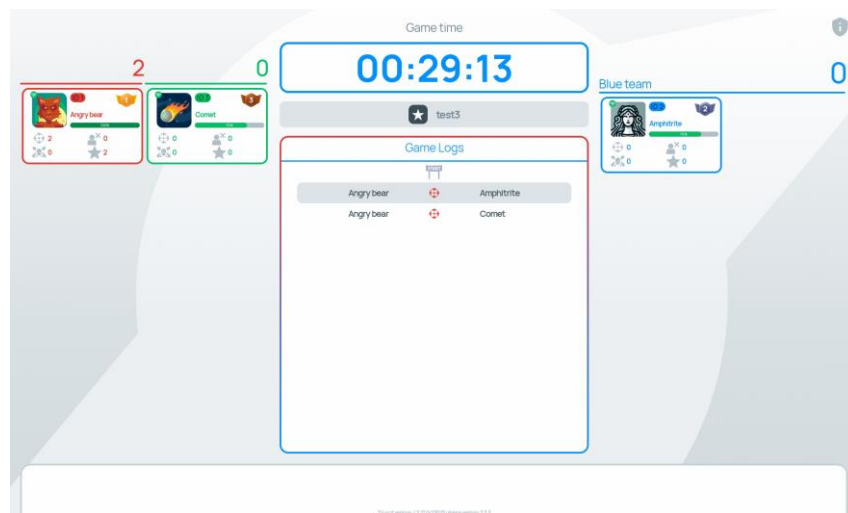


Timer until the start of the game round

2.3.4. Game screens

On game screens, animations may be present during the "page flipping" of player cards, additional devices, and player lists if the corresponding parameter is enabled in the Lasertag Tv-Out settings in the Lasertag Operator program (see section 1.3.1.7).

Game activities (logs, game events) should be viewed from top to bottom and from left to right. From the list of game events, only those enabled during the game event configuration (see section 1.3.3.5) will be displayed on the screen:

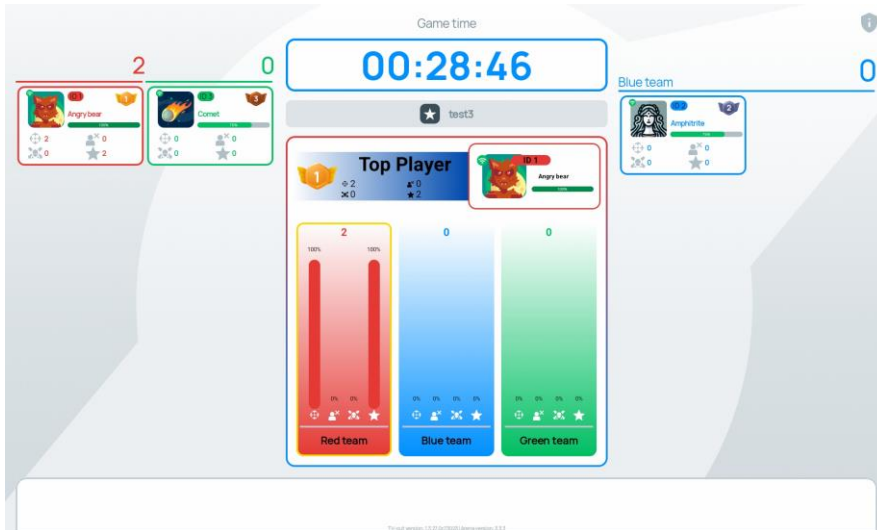


Game screen for three teams. Display in the form of table – logs

In the "Statistics" display mode, four main parameters are shown: the percentage of shots hitting an opponent, opponent deactivations, player deactivations, whose card it is, and points earned during the game.

Additionally, the most effective player at the current moment is displayed.

If all players are on the same team, the "Statistics" display mode shows the top 3 players.



Game screen for three teams. Table display – statistics

Game time: 00:28:03

Red team: 0, Blue team: 0, Green team: 0

Page 1/1, Players 3/3

Nº	Name ID	Points	Frags	Deactivation	Shots	Damage applied	Damage received
1	Wolf 3	0	0	0	0	0	0
2	Aaron 1	0	0	0	0	0	0
3	Bella 2	0	0	0	0	0	0

Game screen for three teams. Display in the form of a list – full list

When the results filter is enabled, only the selected results are displayed:

Game time: 00:27:41

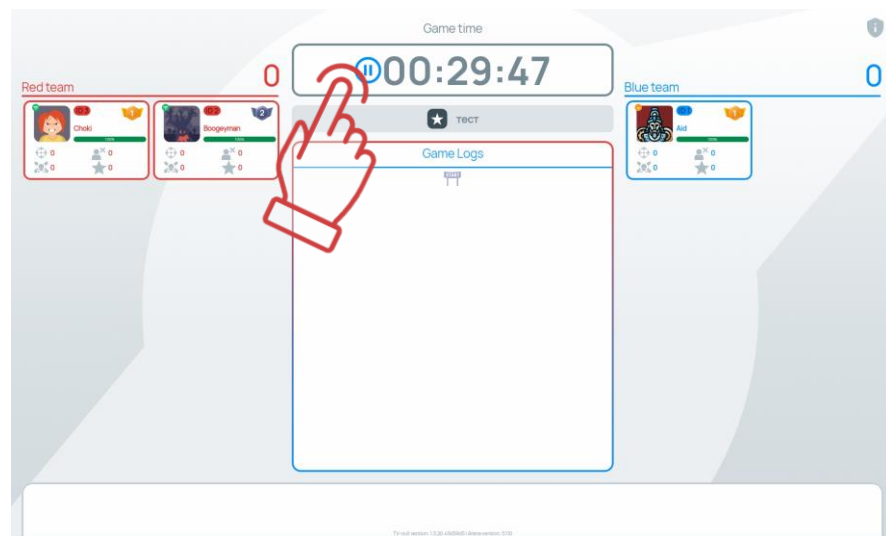
Red team: 0, Blue team: 0, Green team: 0

Page 1/1, Players 3/3

Nº	Name ID	Points	Frags
1	Wolf 3	0	0
2	Aaron 1	0	0
3	Bella 2	0	0

Game screen for three teams. List display – two selected parameters

Starting with application version 1.3.20.45d59d5, the corresponding icon is displayed on the screen during a game pause.

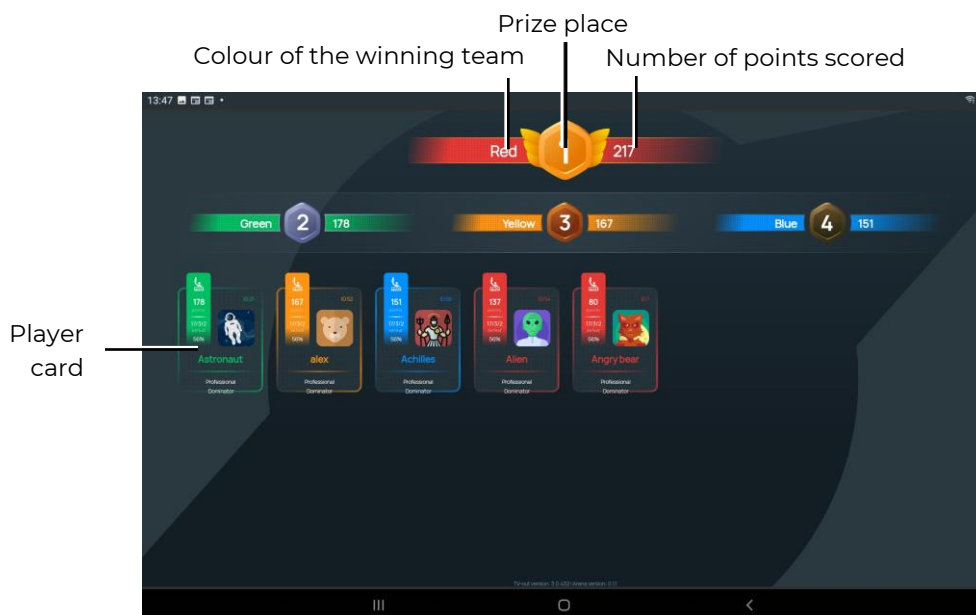


2.3.5. Statistics

When the game is over, the Lasertag Tv-Out screen automatically displays animated screens that show the game stats. These screens are automatically scrolled with adjustable interval (no manual scrolling is possible).

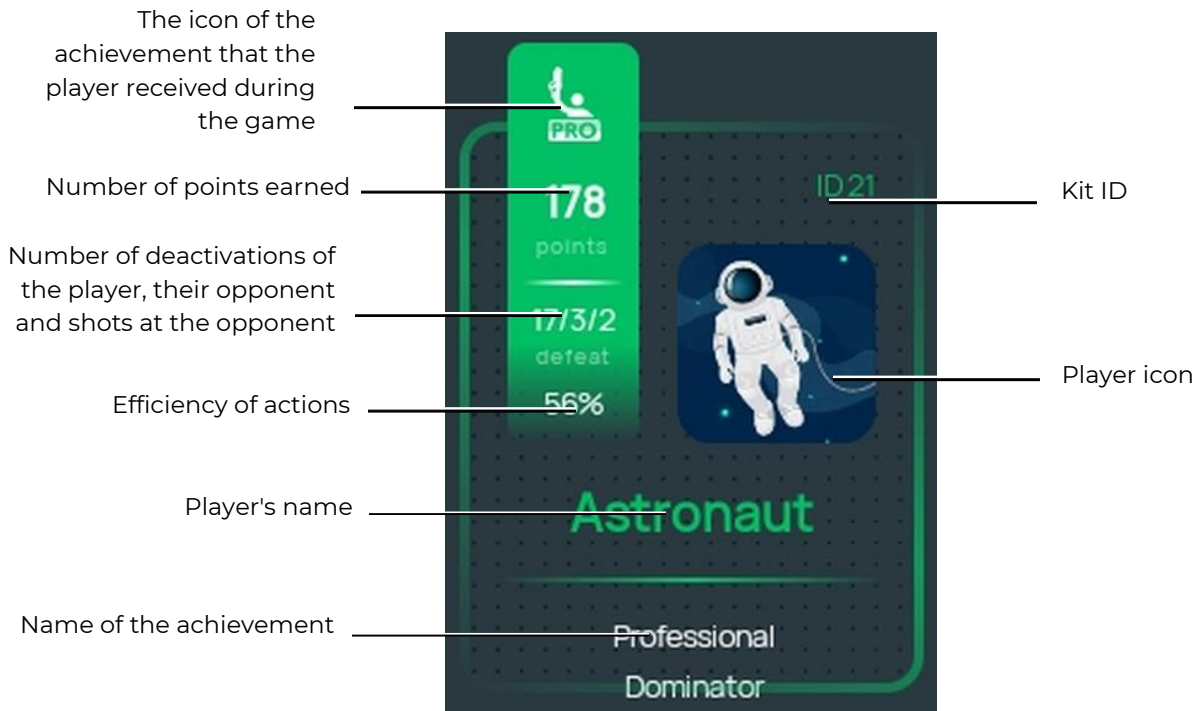
In case the number of players from two teams exceeds 16, the Lasertag Tv-Out screen will automatically flip player cards, the flipping time will depend on the "automatic player switching time" parameter set in the LTO settings under "TV OUT settings".

If there are more than 16 players from two teams, the app will automatically flip through the player cards on the Lasertag Tv-Out screen with animation and special sound.



Personalized "Statistics" screen - display in the form of cards

The player card on the Stats screen contains the following information:



If the "Table" display type is selected, the final screen will display the same parameters as in the list display mode during the game.

2.4. Installing the Lasertag Tv-Out app update

To install the Lasertag Tv-Out app update, you must:

1. Connect the Android box to a Wi-Fi network with Internet access.
2. Launch the app store by clicking on the Play Market icon.
3. In the Play Market search field, enter the name of the application - Lasertag Tv-Out.
4. Click Update
5. Wait for the update.
6. Download Lasertag Tv-Out app.
7. Open the LTO app and check the connection (Tools/TV OUT/Connection settings).