



Virtual Laboratory

TECHNOLOGY

Robot design Guide for Participants

User manual



Table of Contents

Terms and definitions.....	4
1 General information	5
2 System requirements	6
3 «Robocompetition» website.....	7
3.1 Home page.....	7
3.1.1 The «Site Header» panel.....	7
3.1.2 Search bar	8
3.1.3 Filters	8
3.1.4 List of tournaments	9
3.1.4.1 User status.....	10
3.1.4.2 Tournament status.....	10
3.2 Tournament page.....	11
3.2.1 Information block	11
3.2.2 The stage panel	13
3.2.3 Main Content block	13
3.3 Team page	14
3.3.1 Navigation block.....	14
3.3.2 Team member block	15
3.3.2.1 Team Member Status.....	15
3.3.3 A block with action buttons.....	16
4 Registration	17
4.1 Registration via the Website.....	17
4.1.1 Single Tournament	18
4.1.2 Team tournament.....	18
4.1.2.1 Team Captain.....	19
4.1.2.2 Team member	20
4.2 Register via the Application	21
4.3 Register using a special link.....	23
5 Tournament mode	25
5.1 Switching to Tournament mode	25
5.1.1 Switching to tournament mode via the Website.....	25
5.1.2 Switching to tournament mode via the Application	25
5.2 Scene in tournament mode	27
5.2.1 «Exit Tournament» button.....	27
5.2.2 «Stage Information» button	28
5.2.3 The «Team» button.....	29

5.2.4 Timer	31
5.2.5 Status icons for team members	31
5.2.5.1 «Creative» stage	31
5.2.5.2 The «Creation» sub-stage of the «Creation and Solution» stage.....	31
5.2.5.3 «Solution» sub-stage of the «Creation and Solution stage»	32
5.2.5.4 The «Prepared tasks» stage.....	32
6 Completing tasks.....	33
6.1 «Creative» stage	34
6.1.1 Challenge status.....	37
6.2 Stage «Creation and solution».....	37
6.2.1 «Create» sub-stage.....	37
6.2.2 «Solution» sub-stage.....	38
6.3 The «Prepared tasks» stage	38
7 Tournament results.....	40

Terms and definitions

Term	Definition
Administrator	Is an Authorized Portal user who has rights to organize and manage all tournaments
Captain	Is an Authorized Portal User who has rights to manage a team. The user gets this role when creating a team or when transferring the role of captain by the previous team captain
Click	An action that follows: • when using the mouse — move the mouse pointer to the object, press and release the left mouse button without moving the pointer; • when using the touch screen — press the finger on the object and release without moving the finger
Moderator	Is an authorized Portal user who has rights to organize and moderate all tournaments
Organizer	Is an Authorized Portal user who is assigned one of the roles: Administrator, Moderator or Tournament Creator
Portal	Resource of the company «42» LLC, which provides users with access to educational materials and virtual laboratories
Application	Software «Virtual Laboratory «Technology», section «Robot design»
Robocompetition website, Website	An Internet resource site that contains information about tournaments, registration and participation in them
Tournament creator	Is an authorized Portal user who has rights to organize and moderate only their own tournaments
Scene	Virtual three-dimensional space within which the user can interact with Application objects. The concept of «scene» also includes data from the current scenario (the position of objects, their parameters, etc.)
Participant	Is an authorized Portal user who has rights to participate in the tournament

1 General information

This instruction describes the functions of the Virtual Laboratory «Technology» application, the «Robot Design» section (hereinafter referred to as the Application), which provide users with the opportunity to participate in tournaments.

Viewing the list of tournaments is available to users without registering on the Portal. To participate in tournaments, you must register on the Portal and purchase a license for the Application.

Tournaments vary in format: in the **single** format, participants compete individually, while the **team** format involves the distribution of participants into teams and the subsequent rivalry between them.

Tournaments vary in the level of accessibility: **private** tournaments are available exclusively via a special link and are displayed in the tournament list only after registration of the participant, while **public** tournaments are available to all registered users.

The same set of stages is provided for all tournaments:

- 1) The «**Creative**» stage — participants create challenges in the Application and send them to the tournament Organizer. The organizer checks all the challenges received (thereby assessing the level of the participants' skills to create challenges) and selects participants from among the challenge authors for the next stages.
- 2) The «**Creation and solution**» stage — participants create challenges in the Application, send them for moderation, and then pass the challenges of other participants.
 - a) The «**Creation**» sub—stage the participants of the tournament create a challenge in the Application at a set time and send it for moderation. The organizer selects from the received challenges those that will be used at the decision stage.
 - b) The «**Solution**» sub-stage — participants pass challenges created by other participants of the tournament in the Application. The challenge results are generated automatically. Information about the challenge results is available to the Organizer.
- 3) The «**Prepared tasks**» stage — participants undergo challenges that were previously prepared by the tournament Organizer.

2 System requirements

Minimum system requirements for the Virtual laboratory «Technology», section «Robot Design»:

- **Processor:** Intel core i5 Gen 12, Apple Silicon M1 and newer.
- **RAM:** 16 GB or more.
- **Graphics Card:**
 - Integrated: Intel Iris Xe and newer;
 - Discrete: GeForce 1050 and newer.
- **Screen Resolution:** 1920x1080 / 1920x1200 or more (4K and Retina displays require a more powerful graphics card for comfortable operation).
- **Supported Browsers:** Chrome, Yandex.Browser, Opera 44+, Firefox 51+, Edge 79+, Safari 15+.
- **Supported Operating Systems:**
 - Microsoft Windows 10 (x64 versions) or higher with WebGL 2.0 driver support;
 - MacOS X Snow Leopard 10.6 or higher with WebGL 2.0 driver support;
 - Linux or Debian with WebGL 2.0 driver support.
- **Mobile devices:** Running on mobile devices is not supported at this time!

3 «Robocompetition» website

The Robocompetition website is designed to receive information about tournaments, register and participate in them. The user can go to the Website by following the link <https://olympiarium.ru/>.

3.1 Home page

The Website's home page displays the «Website Header» panel and a list of tournaments (Figure 1).

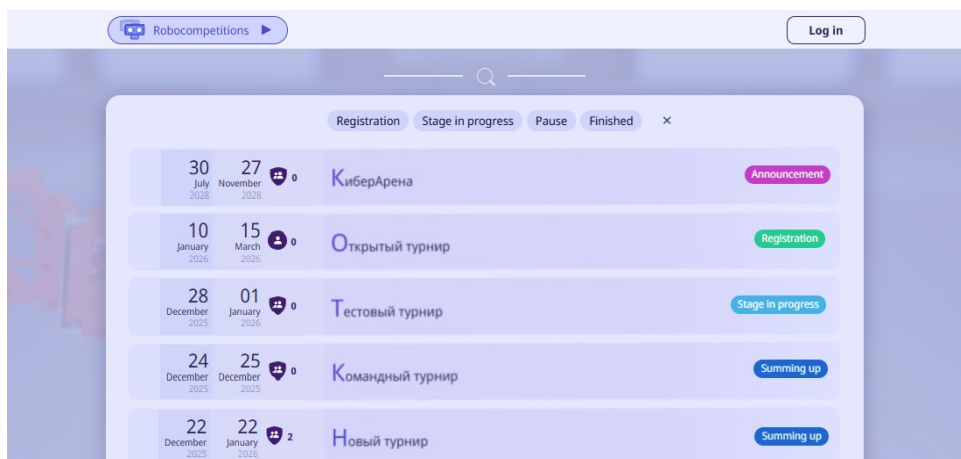


Figure 1 – The start page of the Website

3.1.1 The «Site Header» panel

The «Site Header» panel is displayed on all pages of the Website (Figure 2).



Figure 2 – The «Site Header» panel

If the user is not logged in, then the button  is displayed on the right side of the «Site Header» panel. Clicking on the button takes you to the authorization page. Otherwise, if the user is logged in, then the button  (the user's name and the first letter of the user's last name, the «User» icon) is displayed on the right side of the «Site Header» panel. Clicking on the button opens the user's menu (Figure 3).

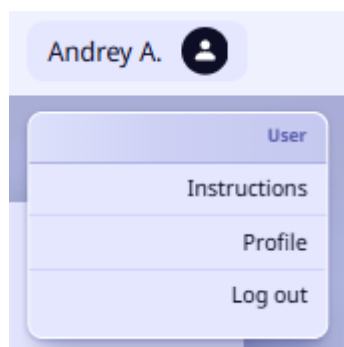


Figure 3 – User Menu

The user menu consists of the following items:

- user role — displays the current user role (this menu item is inactive);

- «Instructions» — opens an additional submenu with a list of instructions (Figure 4);
- «Profile» — opens the «User Profile» page on the Portal;
- «Log out» — opens the start page of the Website. The current account is logged out.

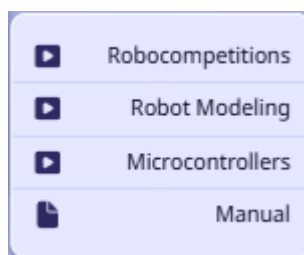


Figure 4 – A submenu with a list of instructions

When opening the instructions:

- text documents open in a new tab;
- video instructions open in the player in the current window.

3.1.2 Search bar

The search bar is located at the top of the home page (Figure 5). Using the search bar, you can quickly find tournaments by their name.



Figure 5 – Inactive search bar

When you click on the icon  a field is displayed for entering the substring that will be searched for (Figure 6). As you enter characters into the search bar, only tournaments with the entered substring remain in the list of tournaments.

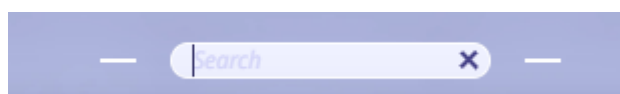


Figure 6 – Active search bar

3.1.3 Filters

Filters allow the user to refine the list of tournaments, leaving only those in the list that meet the selected criteria (Figure 7). The list of tournaments displays tournaments that simultaneously meet the filtering and search conditions (if the search is active) (see [3.1.2 «Search bar»](#)). All filters are disabled by default.

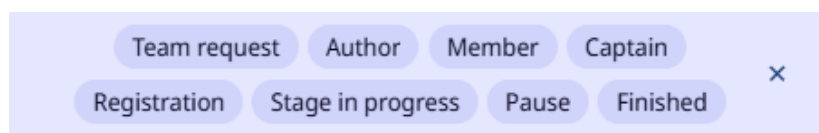


Figure 7 – Tournament Filter

The filters are divided into groups:

- The «Tournament Status» group is available to all users and filters tournaments by their current status:
 - **Registration** — tournaments for which registration is open;
 - **Stage in progress** — tournaments that are currently taking place;
 - **Pause** — tournaments that are currently underway, but there are no active stages at the moment;
 - **Finished** — completed tournaments.
- The «User Role» group is available to authorized users and filters out tournaments based on their connection with the user:
 - **Team request** — tournaments in which the user has applied to the team;
 - **Member** — tournaments in which the user is registered, is or was previously a Participant;
 - **Captain** — tournaments in which the user is the Captain of the team;
 - **Author** — tournaments that are created by the user.

Clicking on the disabled filter activates it — the filter changes color. If several filters are selected, the tournaments that match at least one selected filter remain in the list. Pressing the button  removes all previously selected filters.

3.1.4 List of tournaments

The list of tournaments (Figure 8) shows only public tournaments or private tournaments in which the user is or has previously been a participant. The tournament list items are sorted in descending order by the registration start date (new ones at the top).

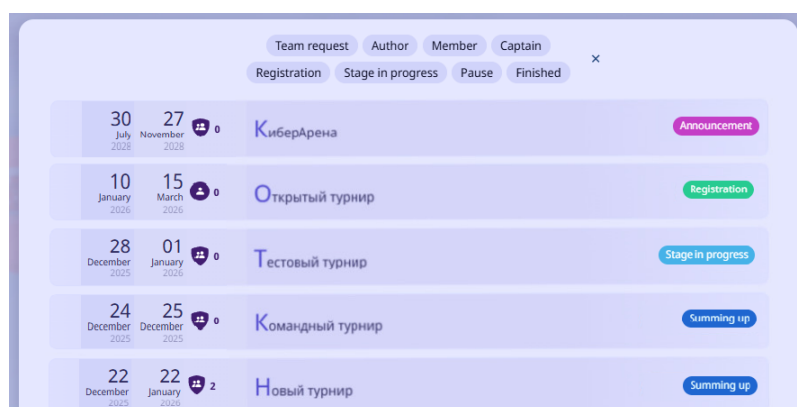
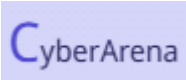


Figure 8 – List of tournaments

Each tournament card contains (Figure 9):



Figure 9 – Tournament card

-  — user status (see 3.1.4.1 «User status»);
-  — dates of the event;
-  — tournament type (single tournament type  or team tournament type );
-  — the number of registered Participants or teams;
-  — name of the tournament;
-  — tournament status (see 3.1.4.2 «Tournament status»).

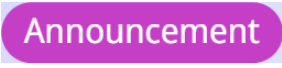
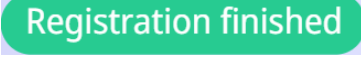
3.1.4.1 User status

The element displays the current status of the user in the tournament. Only one status is displayed in order of priority:

- 1)  — a prize has been awarded;
- 2)  — disqualified Participant or team member;
- 3)  — a Participant or a team member who is not allowed to participate in the tournament;
- 4)  — team Captain;
- 5)  — member or team member;
- 6)  — the author of the tournament.

3.1.4.2 Tournament status

The element displays the current status of the tournament. The background of the element changes color depending on the current status. One of the following statuses is possible for the tournament:

-  — the competition has started, registration has not started yet;
-  — registration is underway;
-  — registration is completed, the tournament stages have not started yet;

- **Stage in progress** — one of the stages of the tournament is currently underway;
- **Pause** — the tournament is currently underway, there are no active stages at the moment;
- **Summing up** — the stages of the tournament have been completed, the tournament has not yet been completed by the Organizer;
- **Finished** — the tournament is completed by the Organizer.

3.2 Tournament page

Access to the tournament page is possible in the following ways:

- from the Website page (Figure 1): the user clicks on the tournament card, after which they navigate to the selected tournament page;
- by direct link: The user gets access to the tournament page using a special link that can be obtained from the tournament organizer or from other sources.

The tournament page provides basic information about the tournament (Figure 10).

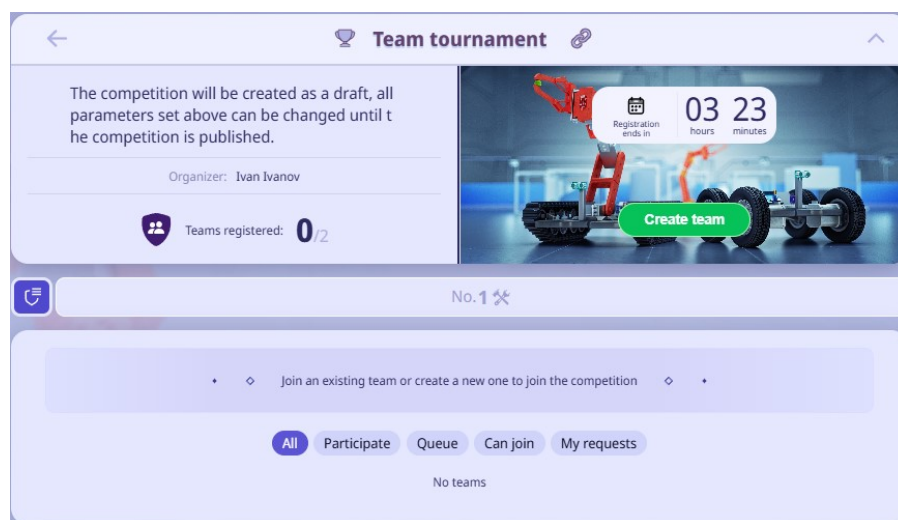


Figure 10 – Tournament page

The tournament page consists of the following blocks:

- 1) Information block (see 3.2.1 «Information block»).
- 2) The Stage Panel (see 3.2.2 «The stage panel»).
- 3) Main content block (see 3.2.3 «Main Content block»).

3.2.1 Information block

The information block (Figure 11) contains:

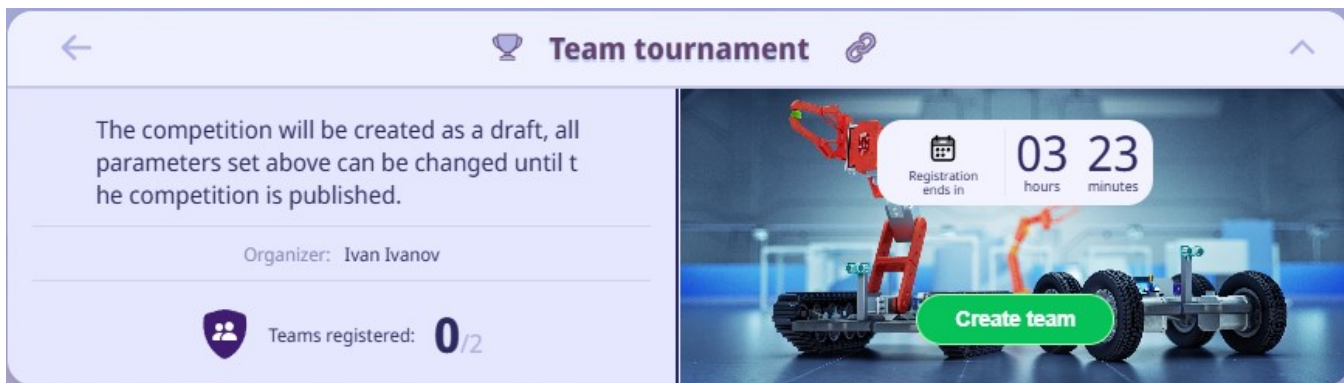


Figure 11 – Information block

- 1) The «Name and navigation» element, which displays the name of the tournament and contains function buttons in the form of icons:
 - a) **Team tournament** — tournament name;
 - b)  — tournament icon;
 - c)  — the «Link to the tournament» button (copies the link to the tournament page);
 - d)  — the «Back» button (navigates to the Website page (Figure 1));
 - e)  — the «Collapse» and «Expand» buttons (switch between the full and collapsed view of the information block).
- 2) The «Tournament Information» element, which displays information about the tournament:
 - a) description of the tournament;
 - b) information about the tournament organizer;
 - c) image of the tournament.
- 3) Interactive elements that change in real time and as a result of user actions:
 - a) information about the number of participants or teams:
 -  Teams registered: **0/2** — for a team tournament;
 -  Participants registered: **3/3** — for a single tournament;
 - b) timer, the data of which depends on the stage:
 -  **19 06** (announcement) — countdown to the start of registration;
 -  **03 23** (registration) — countdown to the end of registration;
 -  **06 55** (the period between the end of registration and the start of the first stage) — countdown to the start of the first stage;

-  (break period before the next sub—stage) - countdown to the start of the sub-stage;
-  (period of the sub—stage) - countdown to the end of the sub-stage;
-  (period of absence of upcoming sub—steps) - there is no timer;
-  (the tournament is over) — there is no timer;

c) an action button, the available action of which depends on the type of tournament:

-  — registers the user as a participant in a single tournament (see 4.1.1 «Single Tournament»);
-  — allows the user to create a team with a unique name to participate in a team tournament (see 4.1.2 «Team tournament»).

3.2.2 The stage panel

The stage panel (Figure 12) contains:



Figure 12 – The stage panel

- 1)  /  — the button that opens the list of participants or teams;
- 2)  — the tournament stage button, which opens the page of a specific stage in the main content block.

3.2.3 Main Content block

The main content block (Figure 13) contains:

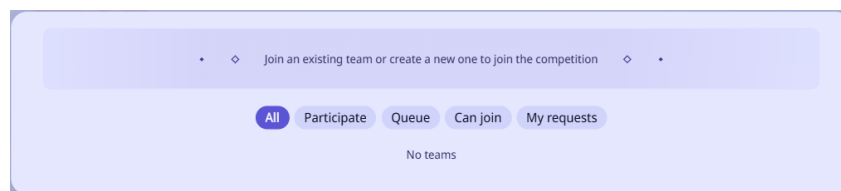
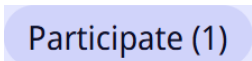


Figure 13 – Main content block

- 1) A list of participants or teams that participate in the tournament.
Filters allow the user to refine the list of commands, leaving only those that meet the selected criteria:
 - a)  — all teams that applied for participation in this tournament;
 - b)  — teams that were included in the list of participants of the tournament;

- c) **Queue** — teams that applied for participation in this tournament, but were not included in the list of participants;
- d) **Can join** — teams that applied for participation in this tournament and did not reach the maximum number of participants.
- e) **My requests** — teams that the user sent the request to.

2) Detailed information about the selected stage.

The stages tab provides detailed information about the selected stage of the tournament. The tab content changes dynamically depending on the current tournament status (see 3.1.4.2 «Tournament status»).

3.3 Team page

The commands page provides basic information about the command (Figure 14).

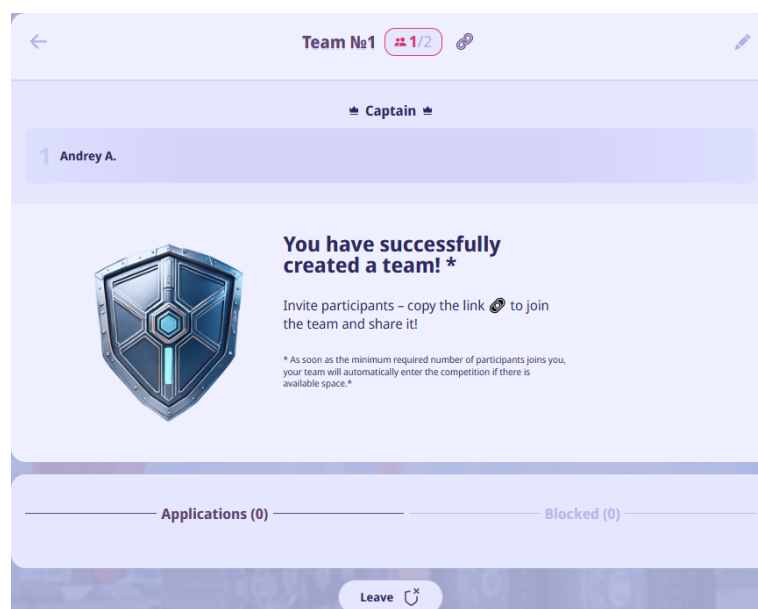


Figure 14 – Team page

The team page consists of the following blocks:

- 1) Navigation block (see 3.3.1 «Navigation block»).
- 2) Block of team members (see 3.3.2 «Team member»).
- 3) A block with action buttons (see 3.3.3 «A block with action buttons»).

3.3.1 Navigation block

The navigation block (Figure 15) contains:

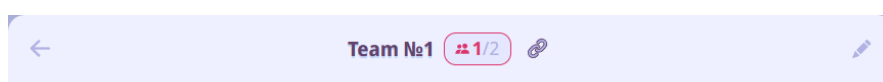


Figure 15 – Navigation block

- 1) **Team №1** — name of the team;
- 2) **5/6** — number of team members;
- 3)  — the «Link to team» button, which copies the link to the team page;
- 4)  — the «Edit» button (available only to the Team Captain), which opens the edit field for the team name;
- 5)  — the «Back» button, which takes you to the tournament page.

3.3.2 Team member block

The team members block (Figure 16) contains:

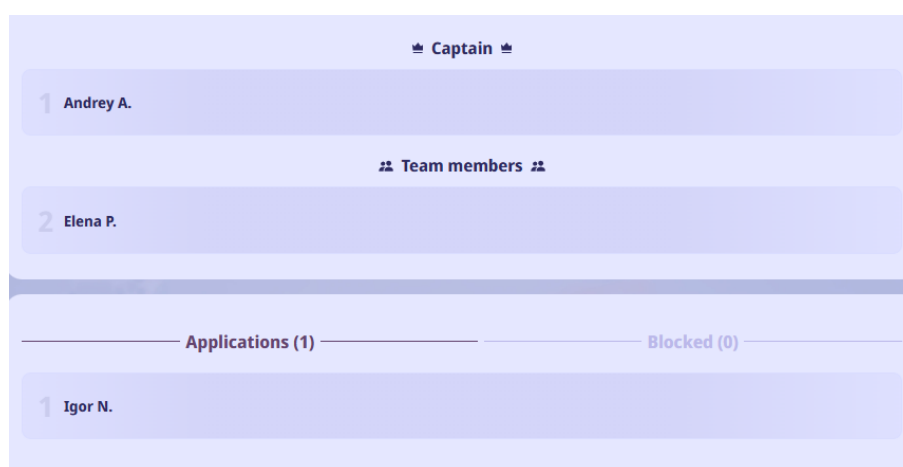


Figure 16 – Block of team members

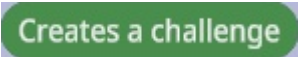
- 1) A list of current team members (available to all users), which includes: «Captain» and «Team Members».
- 2) A list of potential team members (available only to team members), which includes: «Applications» and «Blocked».

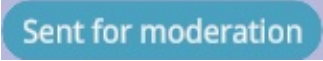
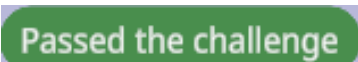
The «Applications» tab displays the current list of applications for the team. The «Blocked» tab displays the current list of blocked participants. Blocked participants are restricted from creating and executing challenges.

During the tournament, the team member block consists of two lists: «Team Members» and «Disqualified». Participants who are blocked at the registration stage are not included in the «Disqualified» list.

3.3.2.1 Team Member Status

Each team member has a specific status displayed during the tournament:

-  — the user is currently creating a challenge;

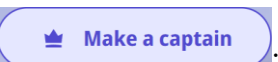
-  — the user created and submitted a challenge for moderation to the Captain;
-  — the challenge of this user was sent by the Team Captain to the Organizer for moderation;
-  — the user is out of the tournament mode of the App and out of the Website;
-  — the user has started passing the stage challenge;
-  — the user passed at least one challenge and got the result.

3.3.3 A block with action buttons

At the registration stage, the block with action buttons (available for users or team members) contains:

-  /  — the user is not a member of the team participating in this tournament;
-  — the user is a member of the team.

Buttons for managing team members (visible only to the Captain) are displayed in the inactive state by default. When you select a row from the list of participants, the buttons corresponding to this list are displayed in the active state:

- during registration for the list:
 - «Team members»:  / ;
 - «Applications»:  / ;
 - «Blocked»: ;
- after the first stage starts for the list:
 - «Team members»:  / ;
 - «Blocked»: .

4 Registration

To register for the tournament, the user must be logged in to the Portal and have a license for the Application.

Ways to register for the tournament:

- via the Website (see 4.1 «Registration via the Website»);
- via the Application (see 4.2 «Register via the Application»);
- follow the special link (for private tournaments) (see 4.3 «Register using a special link»).

4.1 Registration via the Website

To become a Member, follow these steps:

- 1) Launch your web browser.
- 2) Enter in the address bar: <https://portal.vr-labs.ru/laboratory/7>. The page «Virtual Laboratory «Technology» opens, the section «Robot design» (Figure 17).

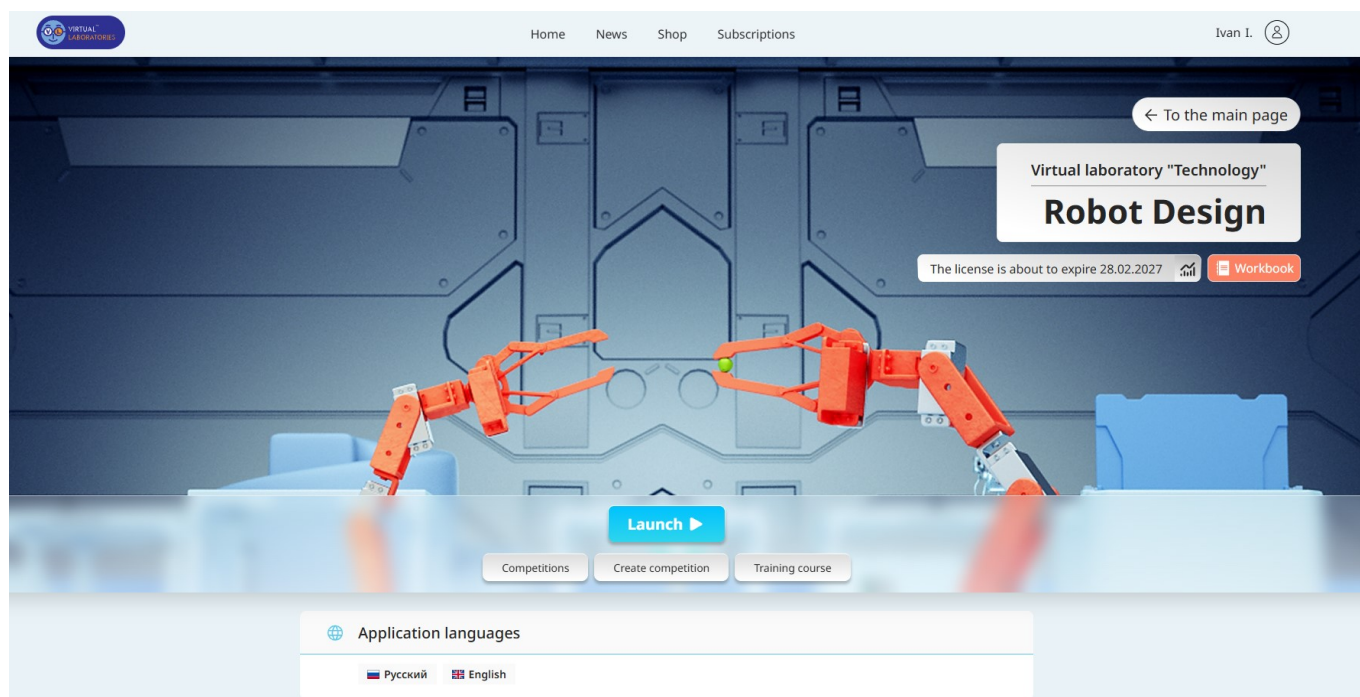
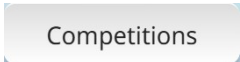


Figure 17 – Page «Virtual Laboratory «Technology», section «Robot design»

- 3) Click the button . The Website home page opens (Figure 18).

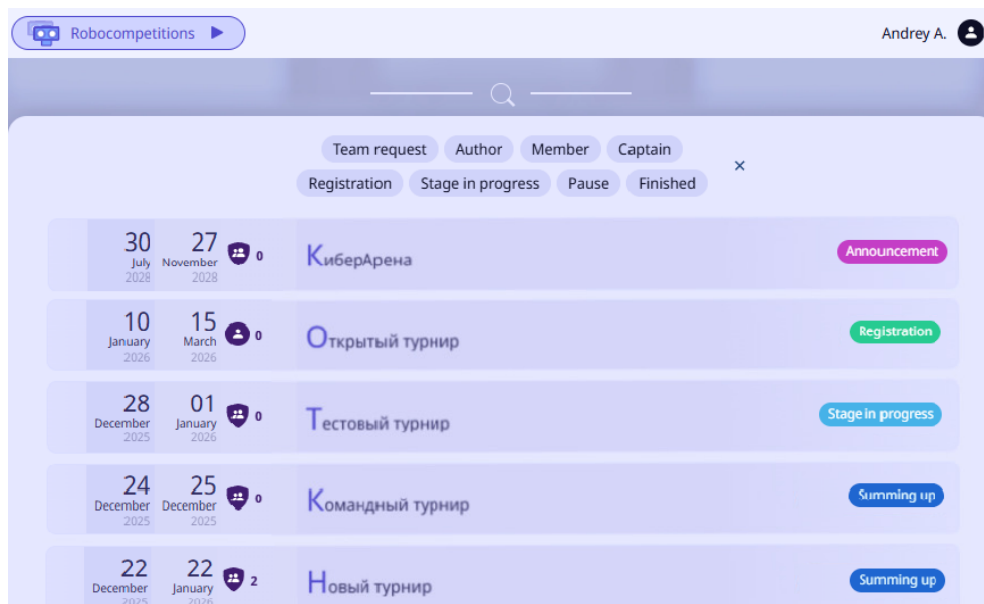


Figure 18 – Home page of the Website

4) Click on the line of the tournament you are interested in with open registration (see 3.1.4.2 «Tournament status»).

4.1.1 Single Tournament

If you have selected a single tournament, the single tournament page opens (Figure 19).

1) Click the button .

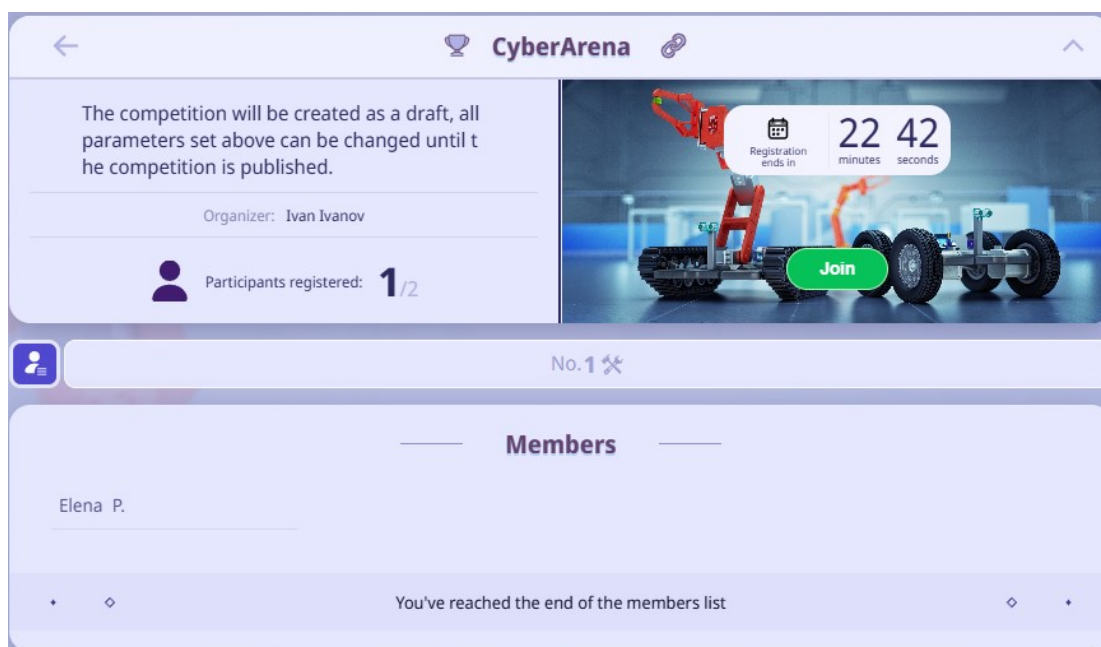


Figure 19 – Singles Tournament page

4.1.2 Team tournament

If a team tournament has been selected, the team tournament page opens (Figure 20).

4.1.2.1 Team Captain

To participate as a team Captain:

- 1) Click  (Figure 20).

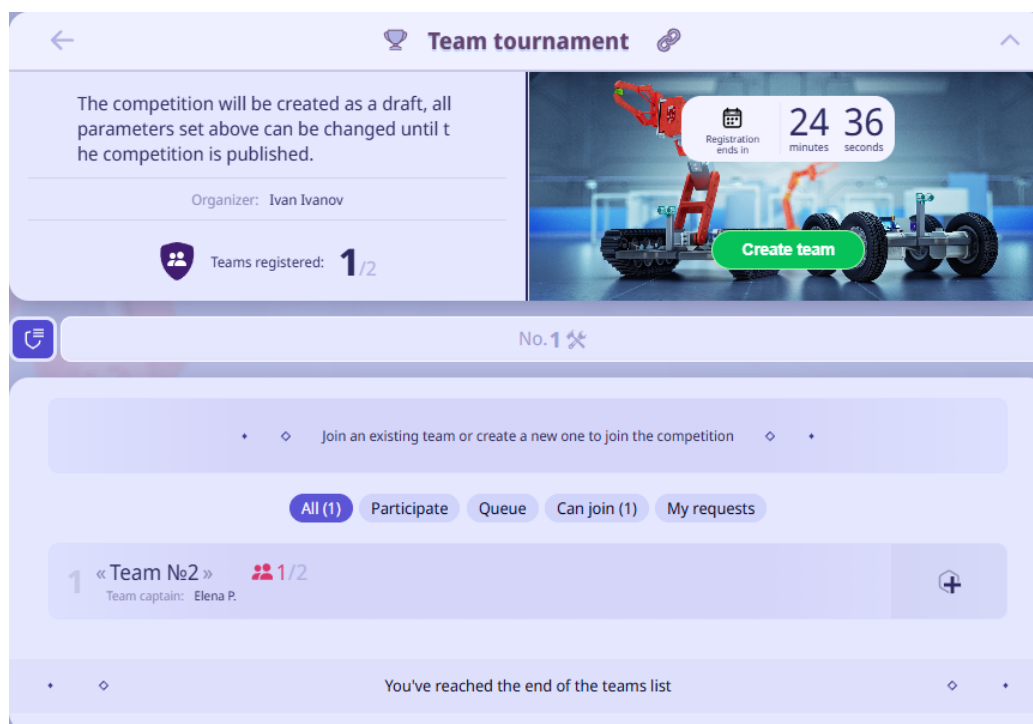


Figure 20 – Team tournament page

- 2) In the window that opens, enter the name of the command (Figure 21). The team name must be unique within the competition and must not exceed 22 characters.

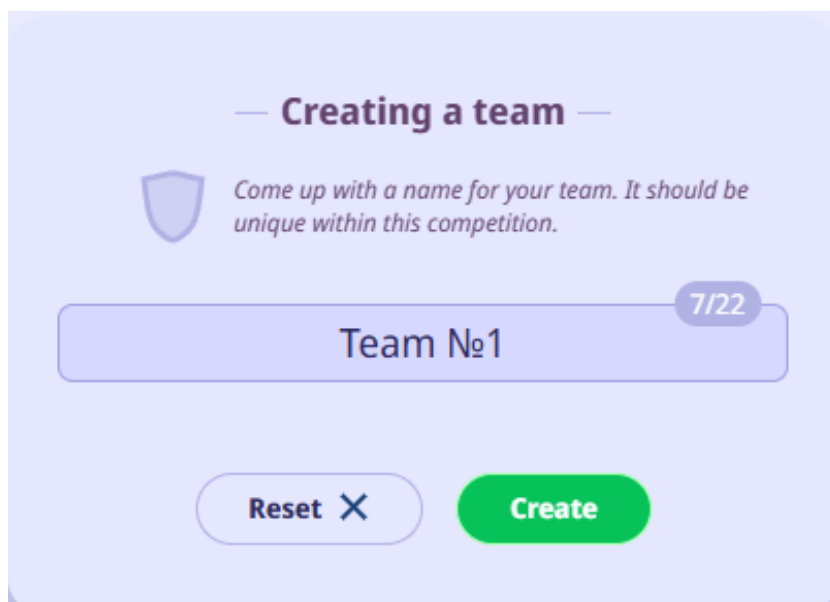


Figure 21 – Command creation window

- 3) Click  to create a command, or cancel the action by clicking . The created team is automatically added to the list of participants in the tournament, and the team creator becomes its Captain.

- 4) Click  on the commands page to copy the link to the command (Figure 22). The link to the command will be automatically copied to the clipboard.

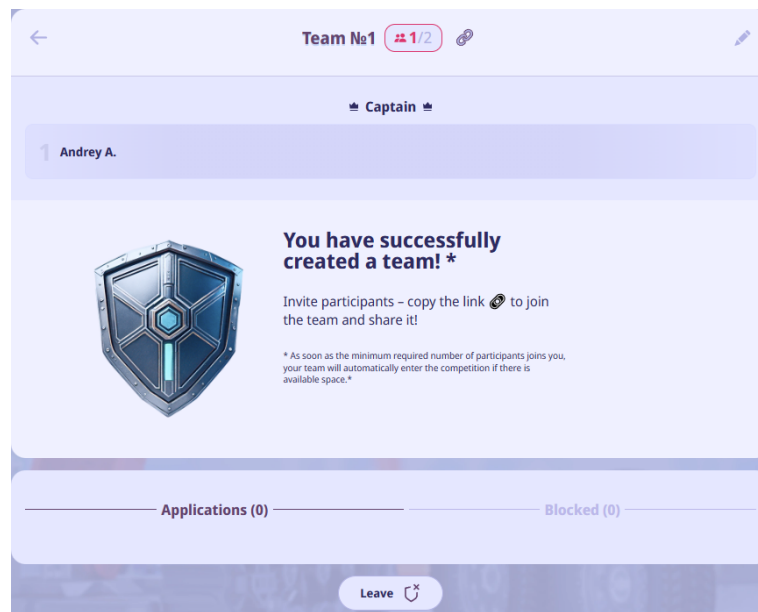


Figure 22 – Team page

When copying is successful, a notification will appear on the screen

Successfully copied. 

- 5) Share the link so that users don't have to search for a team in the list, but can go directly to its page.

Team Member management buttons are displayed only for the Team Captain. On the team page, the Captain can:

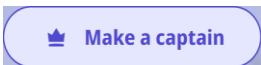
- a) Accept or reject applications from Participants in the «Applications» list using



the or buttons 

. Approved users are added to the «Team Members» list, while rejected users are removed from the «Applications» list.

- b) Transfer the rights of Captain to another team member using the button



. After transferring the rights of the Captain, the user enters the «Team members» list.

- c) You can restrict a team member's access to creating and performing challenges by clicking

the button 

. After that, the user will be added to the «Blocked» list. You can

return the user back to the tournament by clicking the button



- d) Leave the team using the button



4.1.2.2 Team member

To participate as a team member:

1) On the team tournament page (Figure 20) click  , to apply to join the team (Figure 23).



Figure 23 – List of commands

If you want to view the team composition beforehand, click on the line with the command. The team page opens with the team composition and button  (Figure 24).

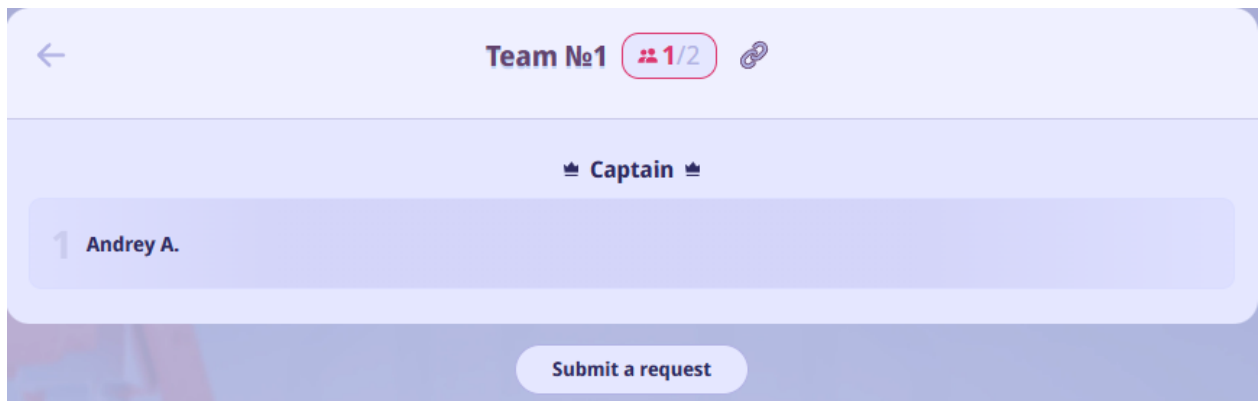


Figure 24 – Team page

You can also ask for a direct link to the team page, click on it, and then click on the team page .

2) Wait for your application to be approved by the team Captain. After that, your name will appear in the list of team members.

4.2 Register via the Application

To become a Member, follow these steps:

1) Launch the Application. The Application scene opens (Figure 25).

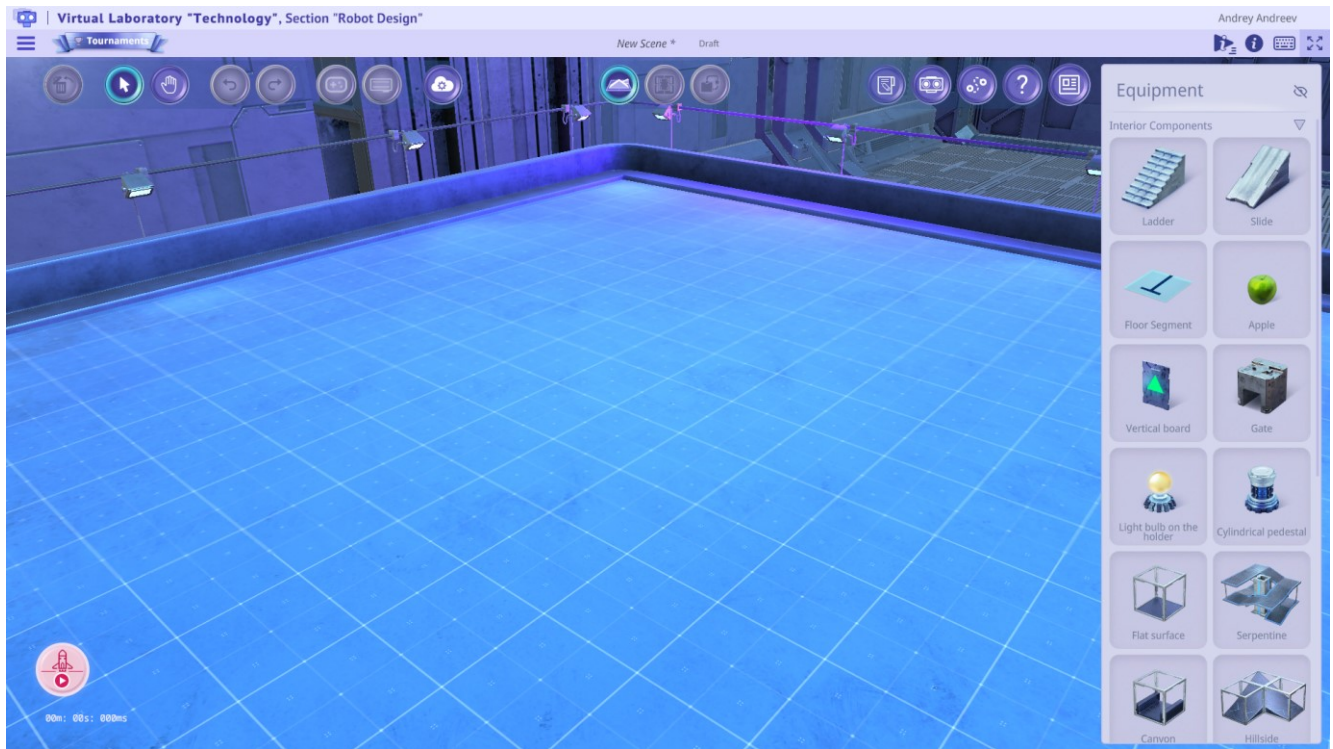


Figure 25 – Application scene

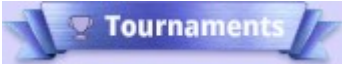
2) Click the button . The «My Tournaments» window opens (Figure 26).



Figure 26 – «My Tournaments» window

3) In the window that opens, click . The Website home page opens (Figure 27).

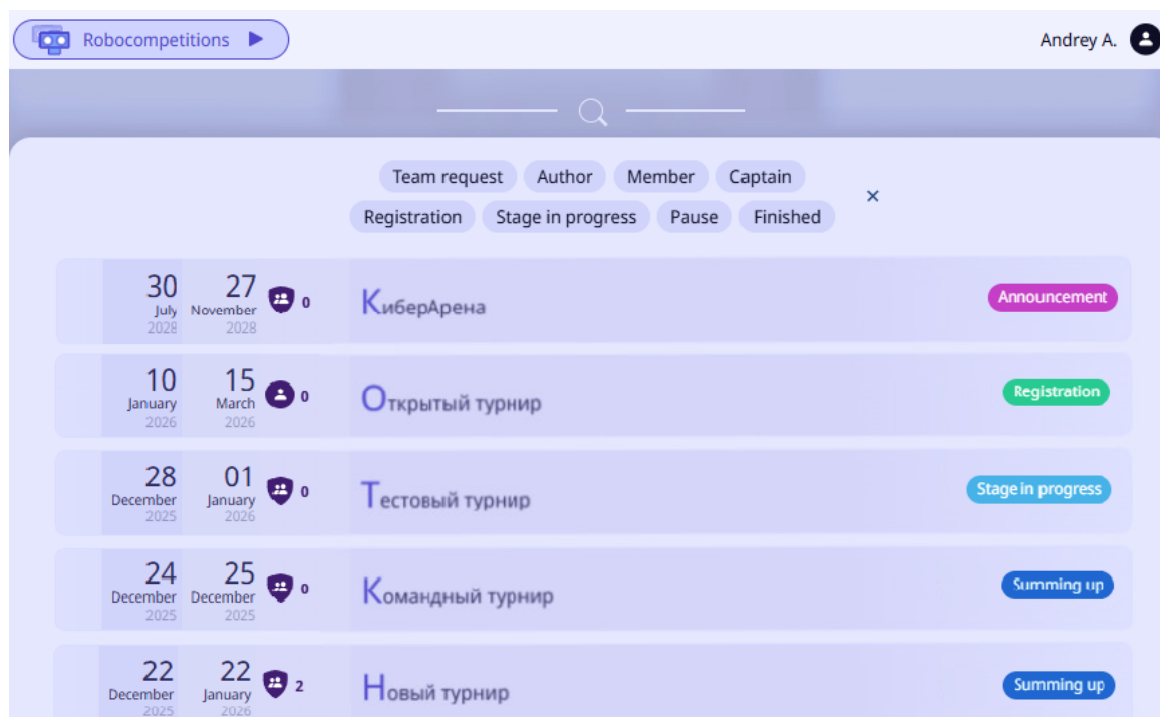


Figure 27 – Home page of the Website

- 4) Click on the line of the desired tournament with open registration (see 3.1.4.2 «Tournament status»).
- 5) Depending on the type of tournament:
 - a) If the tournament is a single event:
 - Register for a singles tournament (see 4.1.1 «Single Tournament»)
 - b) If the tournament is a team event:
 - Register as a Team Captain (see 4.1.2.1 «Team Captain») or as a Team Member (see 4.1.2.2 «Team member»).

4.3 Register using a special link

Participation in a private tournament is possible only after receiving an invitation via a special link. To become a Member, follow these steps:

- 1) Launch your web browser.
- 2) Get a special link to the tournament and copy it.
- 3) Open a new tab in your web browser and paste the link into the address bar (search field) of your web browser (Figure 28).

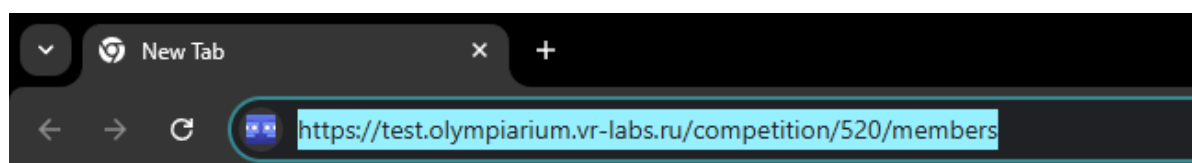


Figure 28 – Entering a special link in the address bar of a web browser

- 4) Press the «Enter» key on your keyboard. The tournament page opens.
- 5) Depending on the type of tournament:

a) If the tournament is a single event:

- Register for a singles tournament (see [4.1.1 «Single Tournament»](#))

b) If the tournament is a team event:

- Register as a Team Captain (see [4.1.2.1 «Team Captain»](#)) or as a Team Member (see [4.1.2.2 «Team member»](#)).

5 Tournament mode

To switch to tournament mode, the user must be logged in to the Portal and registered for the tournament.

5.1 Switching to Tournament mode

Ways to switch to tournament mode:

- Via the Website (see [5.1.1 «Switching to tournament mode via the Website»](#)).
- Via the Application (see [5.1.2 «Switching to tournament mode via the Application»](#)).

5.1.1 Switching to tournament mode via the Website

To switch to tournament mode via the Website, follow these steps:

- 1) After completing registration, click on the tournament page (Figure 29). The «Tournament Trials» window opens (Figure 31).

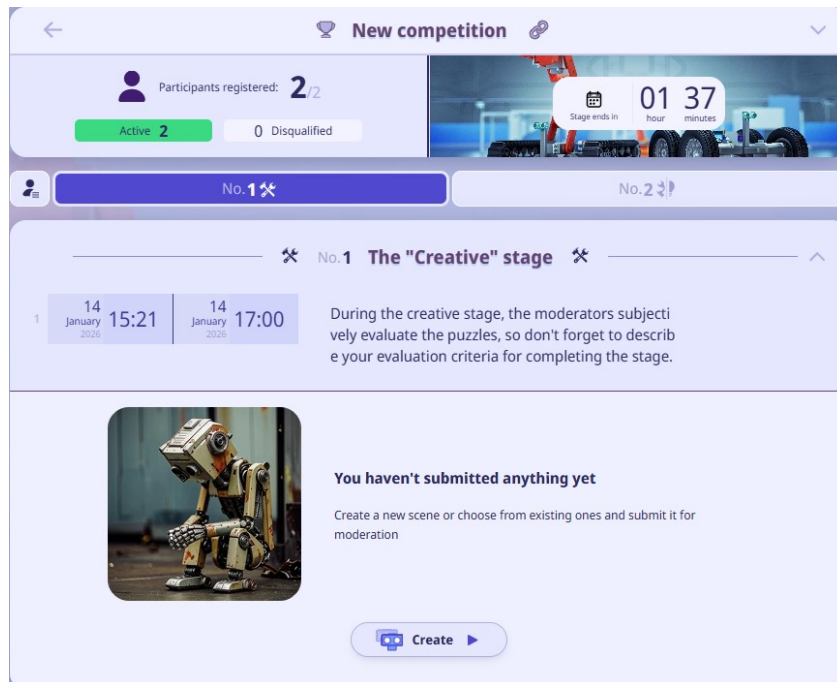


Figure 29 – Tournament page

5.1.2 Switching to tournament mode via the Application

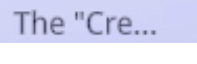
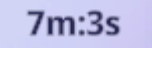
To switch to tournament mode via the Application, follow these steps:

- 1) Click the button . The «My Tournaments» window opens (Figure 30).



Figure 30 – «My Tournaments» window

The «My Tournaments» window displays a list of available tournaments that the user is participating in. The tournament string contains information about the tournament:

- a)  — type of tournament (single tournament  or team tournament 
- b)  — number of participants;
- c)  — name of the tournament;
- d)  — name of the stage;
- e)  — timer (displays the time remaining until the end of the current stage).

Timer format:

- if less than 92 days — «Days: Hours».
- if less than 24 hours — «Hours: Minutes».
- if less than 60 minutes — «Minutes: Seconds».

- 2) In the window that opens, click on the line of the tournament you are interested in. The «Stage challenges» window opens (Figure 31).



Figure 31 – «Stage challenges» window

If the tournament conditions allow re-use of previously created scenes, then the «Stage Trials» window displays the user's personal trials created before the tournament starts. If the tournament conditions prohibit re-use of previously created scenes, then click the button



to start creating the challenge.

5.2 Scene in tournament mode

The stage in tournament mode contains the tournament mode panel located at the bottom of the screen in the center (Figure 32).

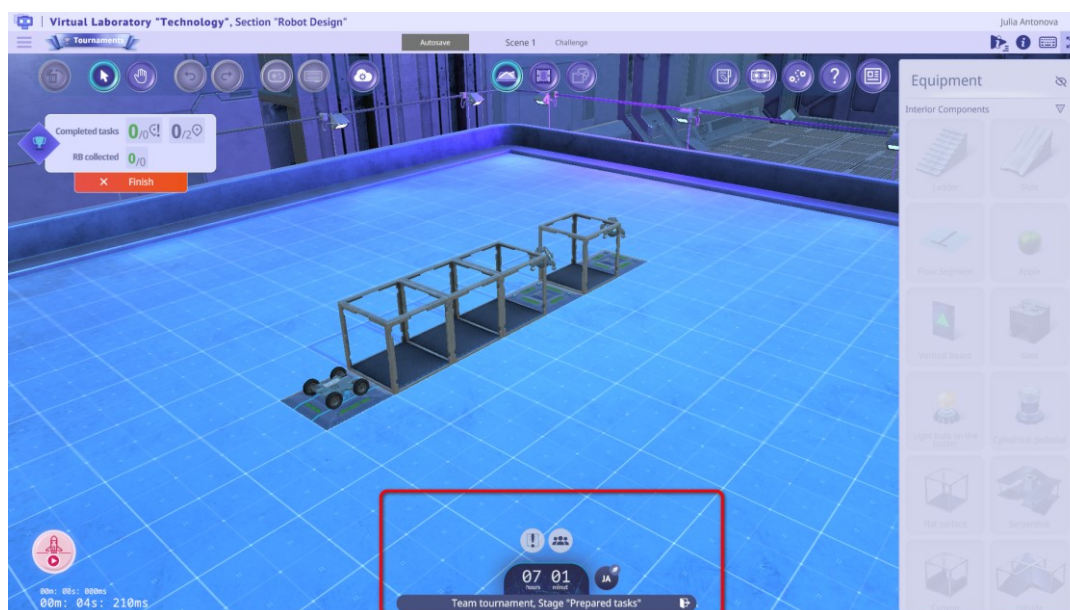


Figure 32 – Scene in tournament mode

The tournament mode panel contains:

- **Team tournament, Stage "Prepared tasks"** — name and stage of the tournament.
- — the «Exit tournament» button (see 5.2.1 «Exit Tournament» button).
- — the «Stage information» button (see 5.2.2 «Stage Information» button).
- — the «Team» button (only for a team tournament) (see 5.2.3 «The «Team» button»).
- — timer (see 5.2.4 «Timer»).
- — team member status icon (only for the team tournament) (see 5.2.5 «Status icons for team members»).

5.2.1 «Exit Tournament» button

Clicking the button opens a confirmation window for exiting tournament mode (Figure 33).

Click the button  to leave the tournament or the button  to cancel the action. After exiting tournament mode, the scene continues as normal.



Figure 33 – Confirmation window

5.2.2 «Stage Information» button

Clicking the button  opens the tournament information window (Figure 34).

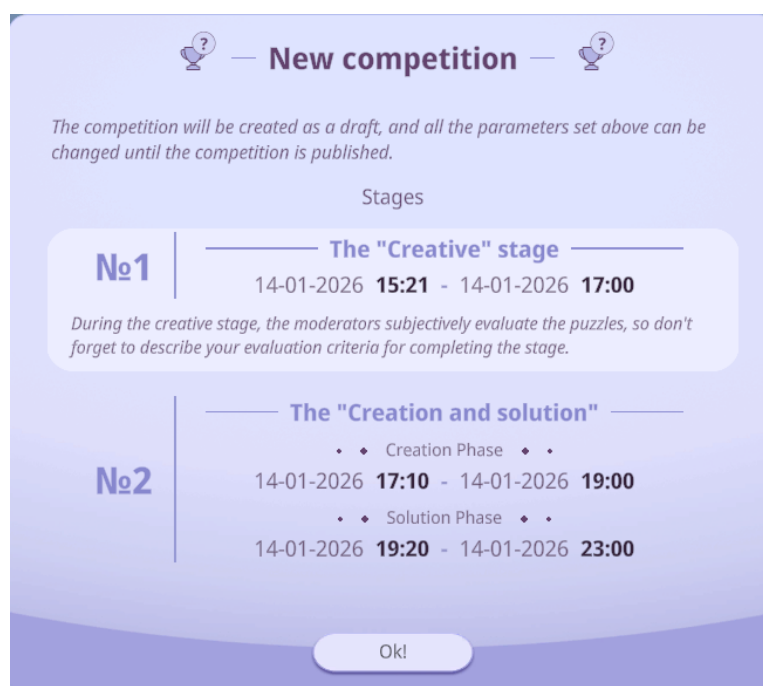


Figure 34 – Tournament information window

The information window contains:

- name of the tournament;
- tournament description;
- a list of tournament stages, including the name, description, and time of each stage (the active stage is highlighted in color);
- click  (closes the tournament information window).

5.2.3 The «Team» button

Clicking the button  opens the command window. The appearance of the command window depends on the type of activity of the stage-creating (Figure 35) or solving the challenge (Figure 36).

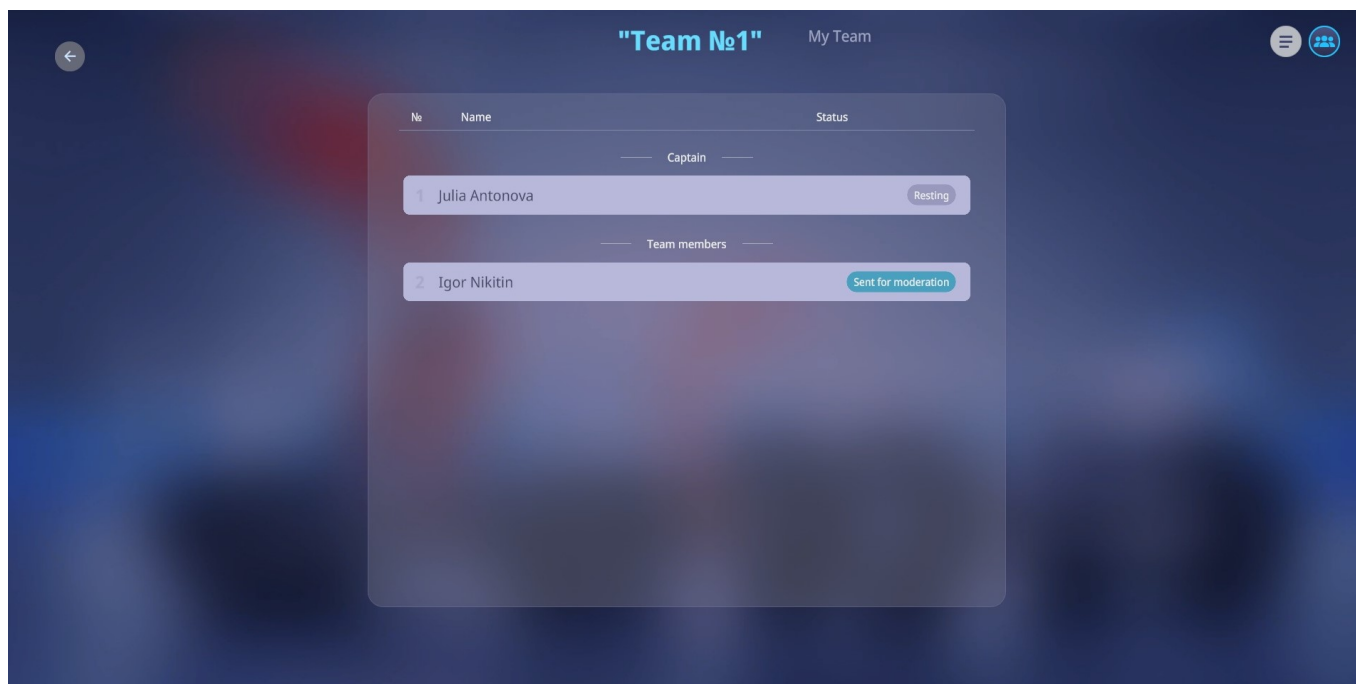


Figure 35 – Command window when creating a challenge

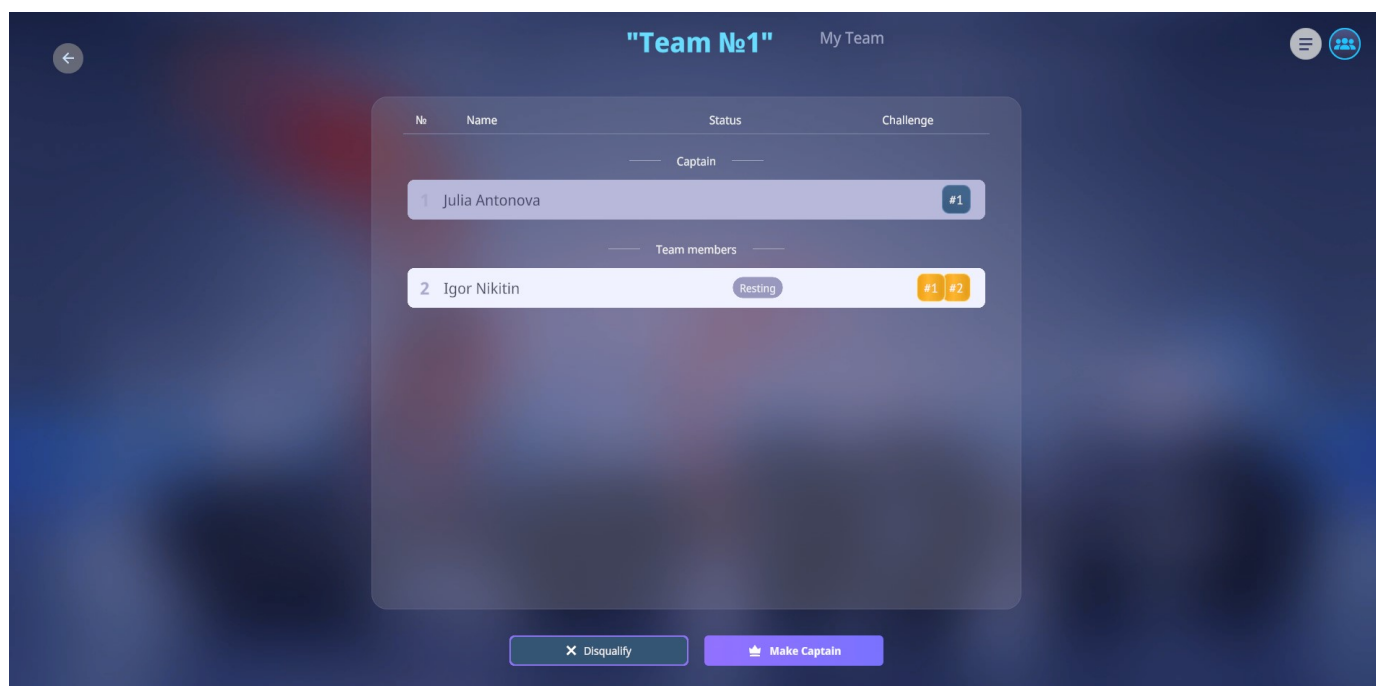


Figure 36 – Command window when solving a challenge

The command window contains:

1) Control buttons:

- a) button  — switches to the challenge scene (Figure 32);
- b) button  — switches to the «Stage challenges» window (Figure 31);

c) button  — switches to the command window (Figure 36).

2) The list of participants of the teams divided into three groups:

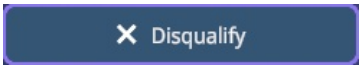
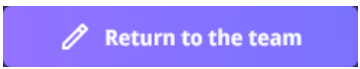
- a) «Captain»;
- b) «Team members»;
- c) «Disqualified».

The user line displays information about team members:

- Serial number of the user. The team captain has the ordinal number «1» and is assigned to a separate group. The remaining team members are numbered by the time they were accepted into the team — those who joined earlier are higher in the list. The «Disqualified» group is numbered together with the main team in a single list (order by time of registration in the team).
- User status (see [3.3.2.1 «Team Member Status»](#)).
- Challenge status (only when solving a challenge). Displays the results of the challenge team members activities. The icon contains the challenge number and the color indicating the challenge performance. The order of displaying icons from left to right by novelty (on the left is the last challenge):

-  (green color) — the user successfully passed the challenge and got the result;
-  (yellow color) — the user has successfully passed the challenge and the result is the best in the team;
-  (blue color) — the user has started passing the challenge, but has not yet received the result for it;
-  (red color) — the user failed the challenge;
-  — the number of completed challenges that did not fit for display.

3) Buttons for managing a team member. Buttons are displayed only for the Team Captain:

- a)  — makes the selected team member the Captain. The current Captain becomes a regular team member.
- b)  — disqualifies the selected team member and moves them to the "Disqualified" list.
- c)  — cancels the disqualification of a team member and returns them to the team.

Buttons refer only to the selected team member. By default, the first team member in the list is selected.

5.2.4 Timer

The timer displays the time remaining until the end of the current stage (Figure 37). If the task needs to be completed in a certain time or in several time intervals, the timer displays the time until the next break.



Figure 37 – Timer

Timer format:

- if more than 24 hours — «Days: Hours».
- if less than 24 hours — «Hours: Minutes».
- if less than 60 minutes — «Minutes: Seconds».

If the end time of the current stage or sub-stage changes — the time is updated.

5.2.5 Status icons for team members

Icons contain the initials (first letters of the first and last names) of team members and display their current status when creating a challenge, depending on the type of stage.

5.2.5.1 «Creative» stage

Team member status icons located to the left of the timer (display the participant whose challenge was selected as a team challenge and other participants who submitted the challenge for moderation) (Figure 38):

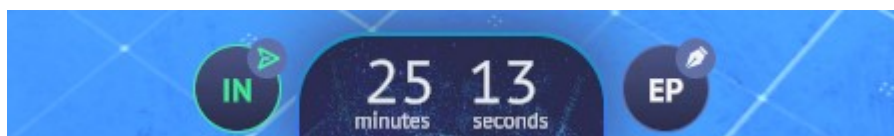


Figure 38 – Team member status icons for the «Creative» stage

-  «Submitted for moderation» — the challenge was completed by the user and submitted for moderation (not selected as a team challenge);
-  «Selected as a team challenge» — the user's challenge is selected as a team challenge.

Team member status icons located to the right of the timer (display team members who are creating or viewing a challenge) (Figure 38).

-  «Creates» — if the team member is currently creating a challenge.

5.2.5.2 The «Creation» sub-stage of the «Creation and Solution» stage

Team member status icons for the «Creation» sub-stage of the «Creation and Solution» stage are displayed similarly to the «Creative» stage (see [5.2.5.1 «Creative» stage](#)).

5.2.5.3 «Solution» sub-stage of the «Creation and Solution stage»

Team member status icons for the «Solution» sub-stage of the «Creation and Solution» stage are displayed in the same way as the «Prepared tasks» stage (см. раздел 5.2.5.4 «The «Prepared tasks» stage»).

5.2.5.4 The «Prepared tasks» stage

Team member status icons located to the left of the timer (display participants who have passed the current challenge) (Figure 39):



Figure 39 – Icons of team members statuses for the «Prepared tasks» stage

-  «Best score» — the user passed the current challenge better than other team members.
-  «Passed» — the user has passed the current challenge.

Team member status icons located to the right of the timer (display team members who are passing or viewing the challenge) (Figure 39):

-  «Passes» — if the team member is currently passing the challenge.

6 Completing tasks

Depending on the stage type, the «Stage challenges» window will display a list of tasks available for execution (Figure 40).

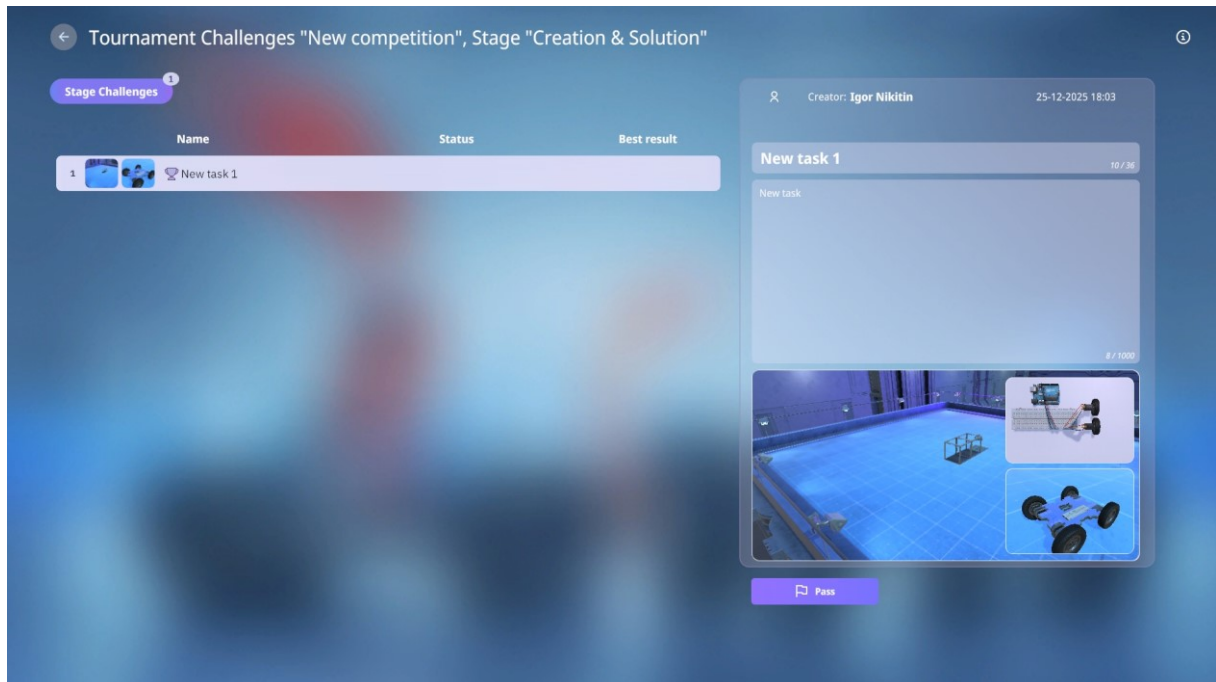


Figure 40 – «Stage challenges» window

Before starting the task, the «Challenge Briefing» page opens, containing information about the challenge (passing score, conditions, order, and rewards) (Figure 41).

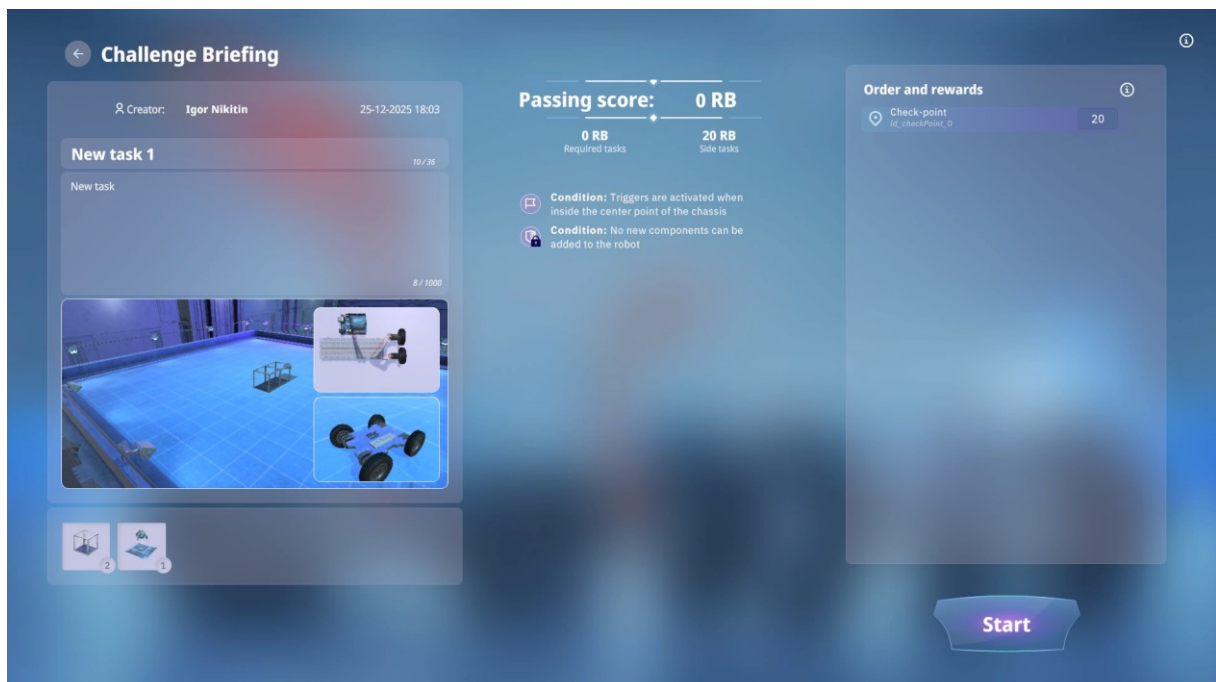


Figure 41 – Challenge briefing

To proceed with the challenge, click **Start**. The tournament information window opens (Figure 42).

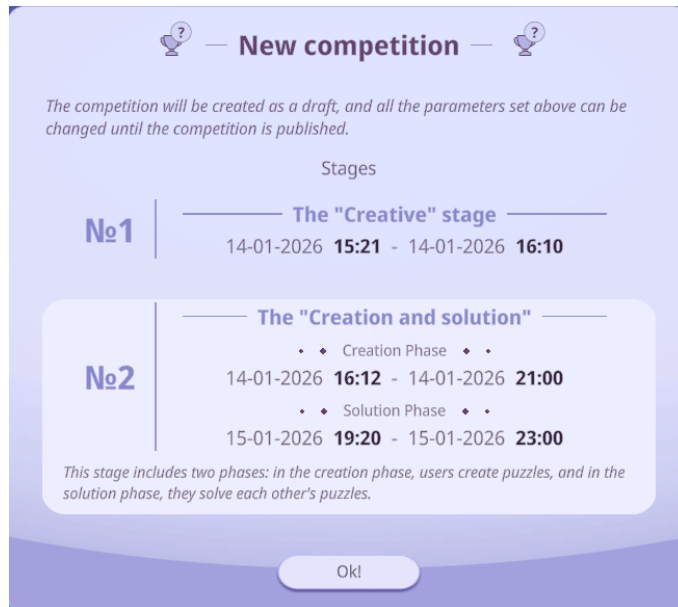
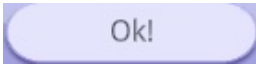


Figure 42 – Tournament information window

Clicking the button  closes the tournament information window. The challenge scene is displayed (Figure 43).

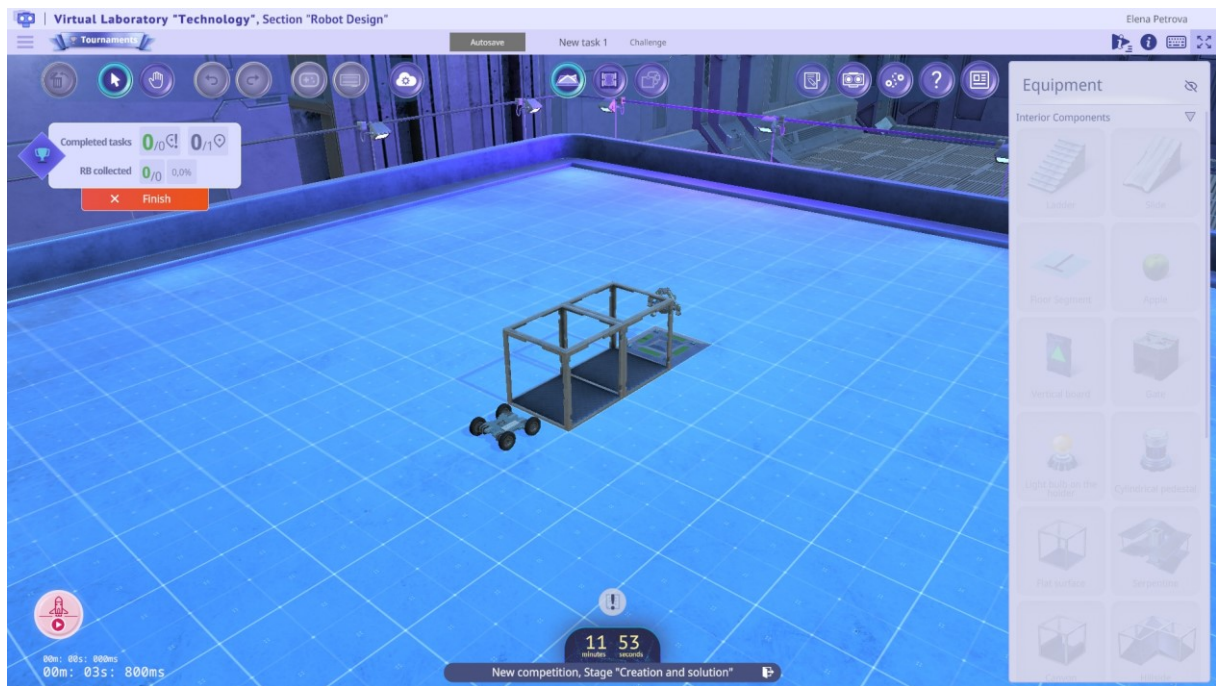


Figure 43 – Challenge scene

6.1 «Creative» stage

To pass the «Creative» stage, follow these steps:

- 1) Create a future challenge scene in the Application (Figure 44).

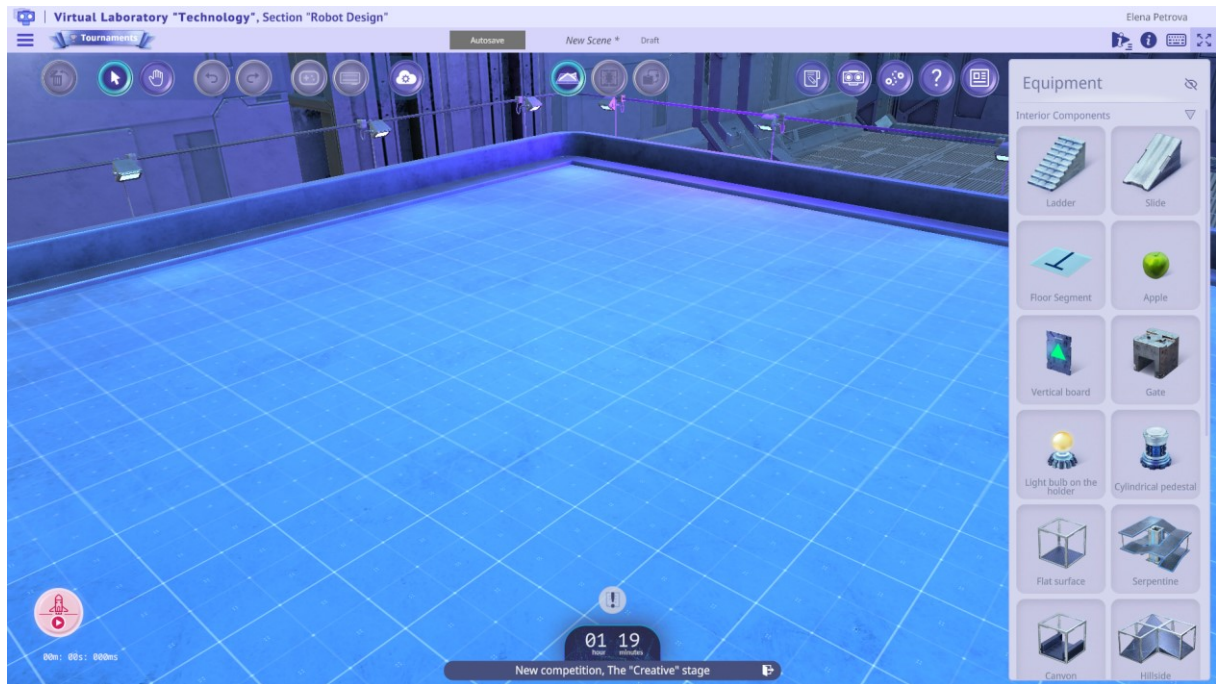


Figure 44 – Scene of the future challenge

2) Configure the conditions for passing the challenge (if necessary).

3) Click  to start the simulation. The timer below the button counts down the simulation time. The Intermediate Results panel appears (Figure 45).

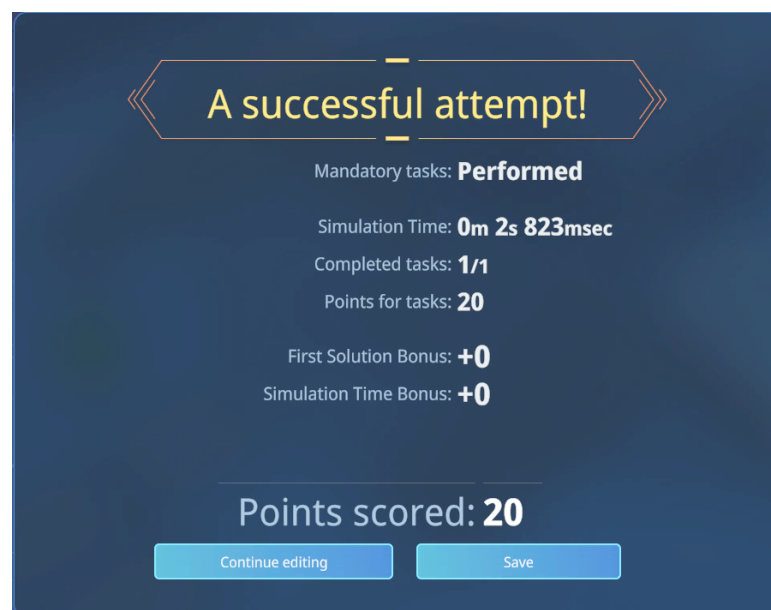
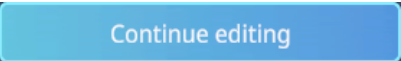
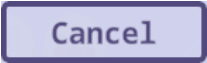


Figure 45 – Intermediate results panel

4) If necessary, edit the scene by clicking the button  and start the simulation again or click the button .

5) Enter the name and description of the scene in the «Save Scene» window (Figure 46). Click the button  to save the scene or cancel the action by clicking the button .

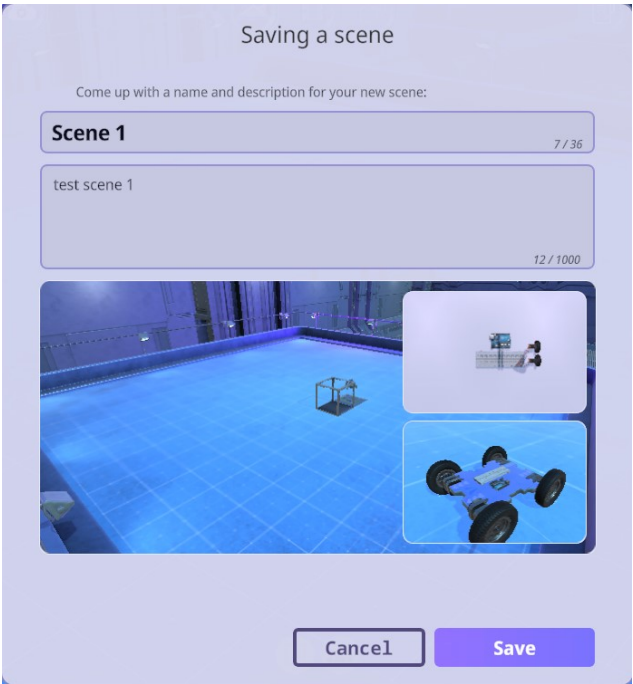
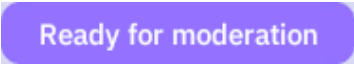


Figure 46 – «Save Scene» window

The scene will be saved in the «My Challenges» directory with the status  (Figure 47).

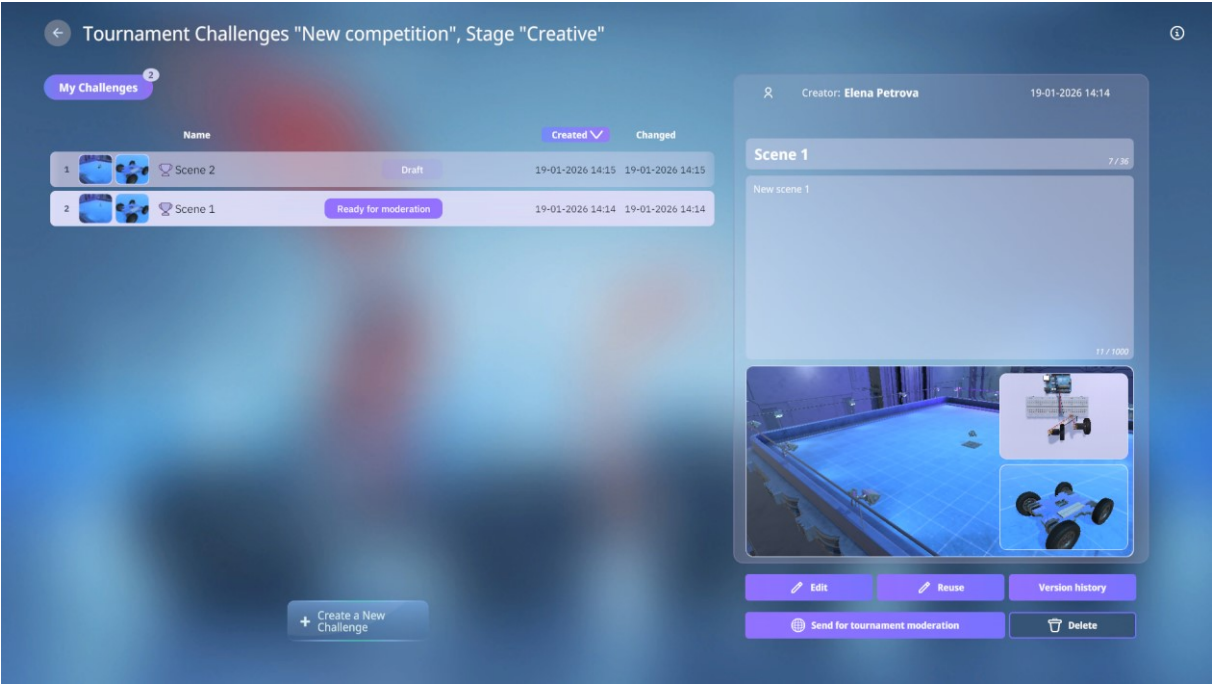
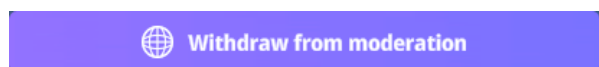


Figure 47 – «My Challenges» catalog

6) Click the button . The published scene will be saved as a new challenge in the «My challenges» directory.

You can only submit one challenge for moderation. If the challenge has not yet passed moderation and the stage has not ended, you can withdraw it from moderation by clicking

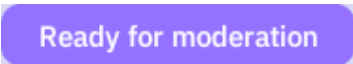
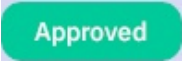


7) Track moderation results by challenge statuses (see [6.1.1 «Challenge status»](#)).

8) Wait for the Tournament Organizer to check your challenge. After checking the challenge, you will receive a notification in the Application or on the Portal page that you are moving on to the next stage, or a notification of your disqualification.

6.1.1 Challenge status

For each challenge during the tournament, the following status is displayed:

-  — unfinished user content that can be edited.
-  — completed user content that can be submitted for moderation.
-  — a completed challenge submitted for moderation, but the decision on it has not yet been made.
-  — a completed challenge (the status is displayed only for a team tournament), submitted for moderation by the Captain, but the decision on it has not yet been made.
-  — the challenge passed moderation and was credited as part of the stage.
-  — the challenge failed moderation.

6.2 Stage «Creation and solution»

6.2.1 «Create» sub-stage

To complete the «Create» sub-step, follow these steps:

- 1) At the specified time, create a challenge, save it, and submit it for moderation. The challenge is created, saved, and sent in the same way as in the «Creative» stage (see [6.1 «Creative» stage»](#)).
- 2) Track moderation results by challenge statuses (see [6.1.1 «Challenge status»](#)) (Figure 48).

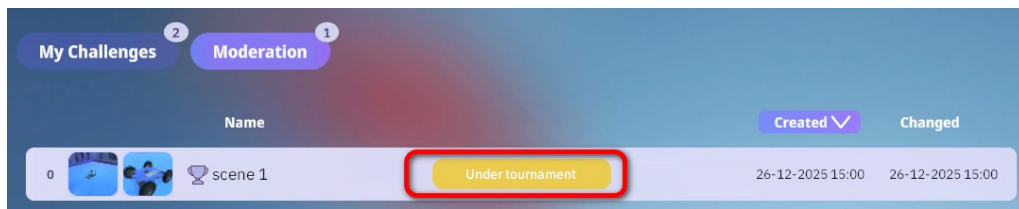


Figure 48 – Challenge verification status

6.2.2 «Solution» sub-stage

To complete the Solution sub-step, follow these steps:

- 1) Open the challenge in the «Stage challenges» directory (Figure 49).

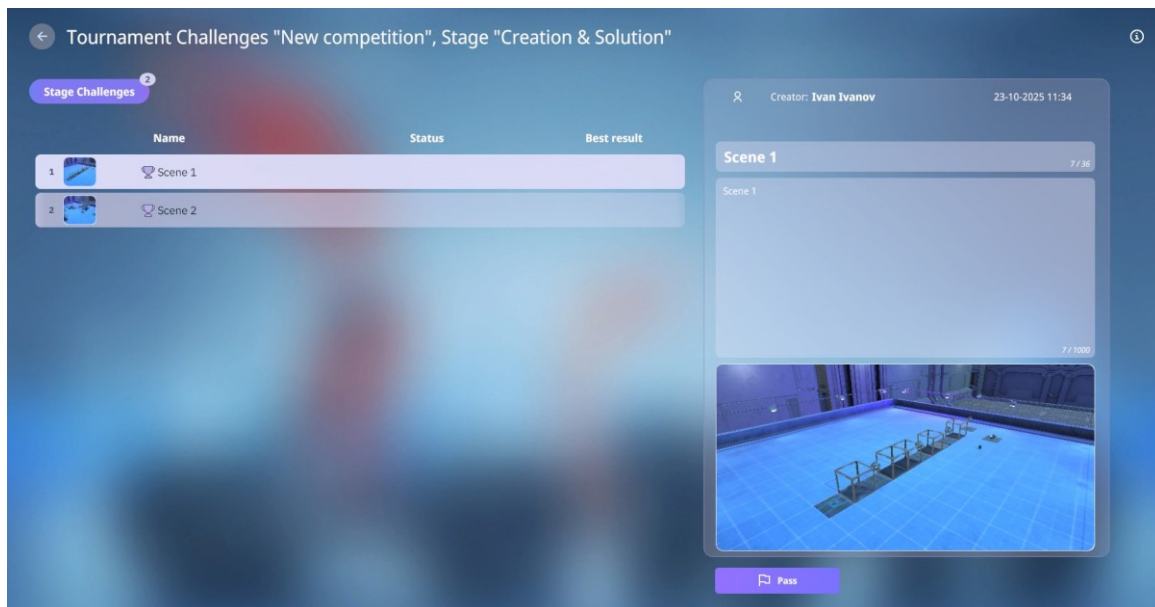


Figure 49 – Catalog of «Stage challenges»

- 2) Tap the button  to complete the challenge in normal mode. Information about passing the challenge is saved in the Application.

6.3 The «Prepared tasks» stage

To complete the «Prepared tasks» stage, follow these steps:

- 1) Open the challenge in the «Stage challenges» directory (Figure 50).

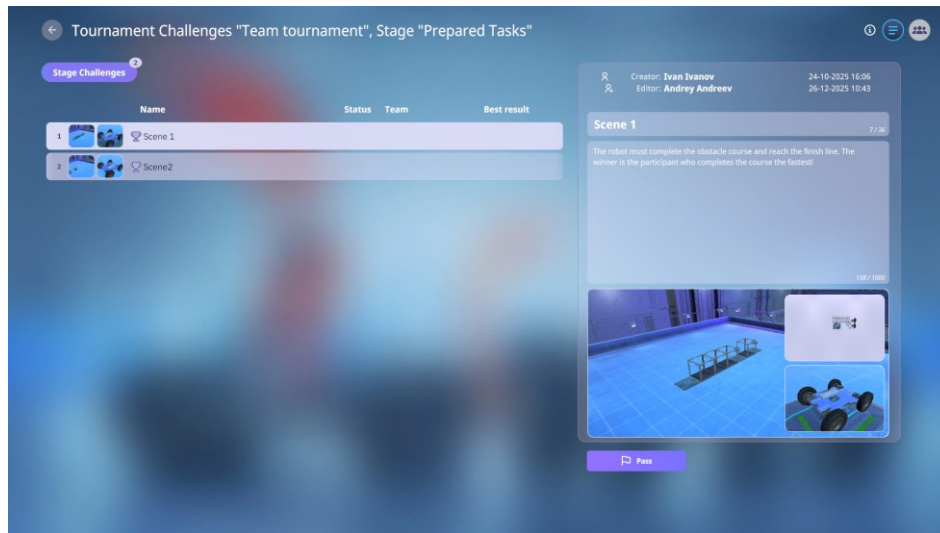


Figure 50 – Catalog of «Stage challenges»

- 2) Tap the button  to complete the challenge in normal mode. Information about passing the challenge is saved in the Application.

7 Tournament results

To find out the tournament results, follow these steps:

- 1) Launch your web browser.
- 2) Enter in the address bar: <https://portal.vr-labs.ru/laboratory/7>. The page «Virtual Laboratory «Technology» opens, the section «Robot design» (Figure 17).
- 3) Click the button . The Website page opens (Figure 18).
- 4) Click on the line of the completed tournament you are interested in (see 3.1.4.2 «Tournament status»)

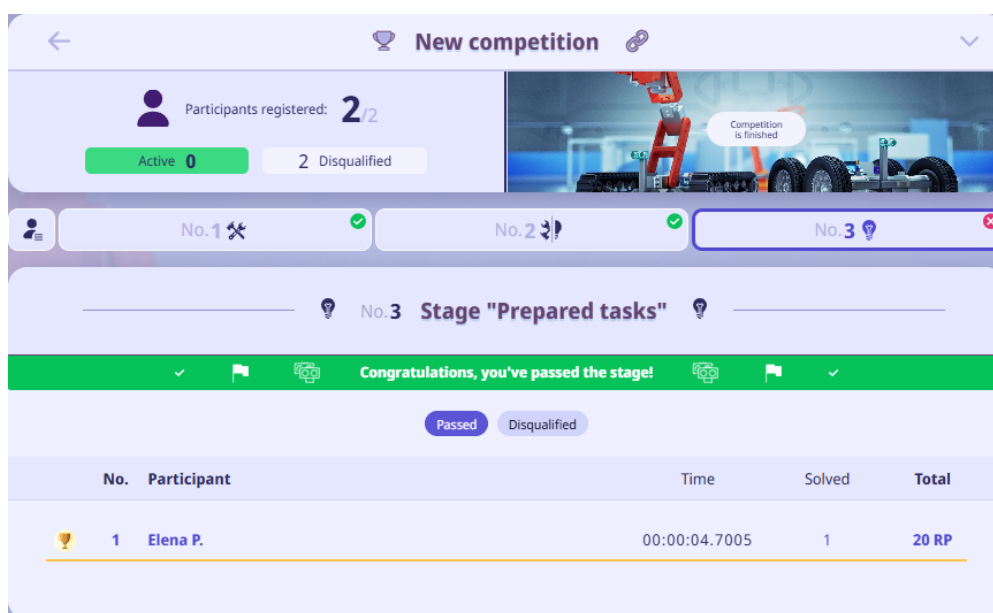
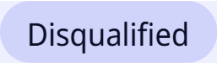


Figure 51 – Tournament page

The page will display the results of the tournament with a list of Participants/teams and their points for all stages:

- in a single-player tournament, the personal result is displayed — the sum of all points received by the Participant for all completed tasks;
- in a team tournament — the sum of all points received for all completed tasks by team members.

In addition to the occupied places, the following cups are displayed in the rows of teams or Participants who took the first three places: gold, silver, and bronze. With the same number of points, teams or Participants share the cup among themselves.

- 5) To view disqualified Participants or teams, click .