



# General competition rules

Version 5.2 dated January 20, 2020

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# 1. General provisions

The provisions of these «General Competition Rules» complement the «Competition Rules» of each type of competition by default. In cases where the provisions of the «Competition Rules» of a specific type of competition conflict with the «General Competition Rules», priority is given to the «Competition Rules».

## 1.1. Terms and Definitions

The following section describes the interpretation of main terms and definitions used throughout the whole system of RoboFinist competitive events.

Term	Definition
Reporter team	team which presents a project for review
Discipline	type of competition
Run	the participant's single act of accomplishment the task of discipline
Starting (finish) Area	explicitly marked section of a field where the robot should be at the beginning (end) of task execution. The starting area border line is a part of the starting area.
IR receiver	device for robot remote control
Quarantine	zone (location) for robot placement isolated from participants and third parties (to avoid unauthorized modification to the program and/or robot construction)
Competition Categories	concretized options of running specific type of competitions which are determined by corresponding Contest Rules. Similar to commonly used sports definitions: categories, leagues, subdisciplines, classes). Competition categories can be defined by: - age of participants; - technical requirements to robots and fields - other criteria.
Clinch	case when robots do not move or are moving in the same orbit touching each other
Flying vehicle	robot capable of flying or hovering and constructionally made in the form of airplane, rotorcraft (including helicopter and multicopter), glider, ornithopter or airship.
Starting (finish) line	line the crossing of which marks the beginning (end) of a run. The fact of crossing the line is recorded relative to the projection of a robot
Match	set of rounds in the contest between teams. The minimum scoring element of the tournament.

Term	Definition
Event	totality of one or more Contests, Exhibitions, Hackathons, etc., organized and held at the same time and in the same place by the same Organizer(s), and united by a common program
Modification of the Robot	transformation of the robot or its control program
Educational kit	manufacturer-standardized set of robotic parts designed to teach robotics. Educational kits include kits and extensions to them supplied by Lego, Fischertechnik, VEX, Huna, TRIK, Robotis, Robo, MakeBlock, Robotrack, Hitechnic, Mindsensors, Smartbricks, unless otherwise specified in the Contest Rules.
Olympic system	system where a team is eliminated from the tournament after the first loss
Operator	team member admitted to the Contest area to launch or control the robot
PC	personal computer (including notebook)
Field	area which is spatially limited and equipped (organized) in a definite way for holding a certain type of competition
Attempt	run which is sequentially repeated by the same participant in the same contest
Web-portal	totality of webpages with domain name robofinist.ru and robofinist.org
Preview	brief oral presentation of the project accompanied with slides
Obstacle	fixed or moving object with defined characteristics which does not allow or makes it difficult to continue the movement along the route
Round	Part of the match. A limited period of time when the fight takes place
Reviewer	team wich reviews
Robot	device that is unified by one whole architecture and that has:- environmental analysis transducers (sensors);- servos that ensure movement of the entire structure and/or its individual parts;- programmable control unit that self-processes sensor data and controls the operation of servos according to the preset executable program. It is allowed to use external control signals (commands) as an additional option only.
«Start-finish» system	Electronic system that measures the time a robot takes to pass the ring route. A pass-detecting sensor is situated at a height of up to 3 cm.

Term	Definition
Competition (type of competition, discipline, contest, category)	Competitive event designed to determine the winners. The running of the competition is defined by Contest Rules available on the Web-portal. Competition is held among participants signed up on the Web-portal. Control of compliance with the Contest Rules and determination of the winners are within the competence of Referees (Judges).
Referee (Judge)	Person authorized by the Competition Organizing Committee to monitor compliance with the Contest and General Competition Rules as well as to record the results
Route (track)	Projected path of the robot when passing a field of specific competitions.
Participant (competitor)	Person whose application for specific competition is accepted by the Organizing Committee. It can also be used to designate a registered team consisting of several personal participants.

## 1.2. Organization of the Competition

An Organizing Committee is set up to host the Event.

The Head of the Organizing Committee is appointed responsible for the Event.

For refereeing the Competition, a Panel of Judges is created. The Chief Judge is appointed by the Organizers and is responsible for refereeing in competitions.

At the discretion of the Organizing Committee, each judge can be appointed to several types of competition at the same time (for example, when there is a small number of competitions in the Event).

An Appeal Commission is created by the Organizing Committee to deal with appeals.

To formalize the organizational and methodological issues of competitions, the Organizing Committee may develop «Provisions on the Event»

## 1.3. Competitors Code of Conduct

Only competitors, without coaches team managers, are allowed to enter the technical and competition area, unless otherwise provided for by the Contest Rules.

During the Competition all participants are not allowed to:

- damage court, fields, material and equipment used for the competition as well as robots of other teams;

- use of dangerous items or behaviors that may create or cause interference with the competition;
- use inappropriate or insulting words and/or behavior toward other team members, other teams, audience, judges or staff;
- bring food or drink into the designated competition area;
- create any other situation which judges might consider as interference with the competition or violation of the Rules;
- use a cellular/mobile phone or a medium of wire/wireless communication into the designated competition area, unless otherwise specified in the Contest Rules;
- touch the robot or field/table without referee's permission, unless otherwise specified in the Contest Rules;
- interact with or control other competitors' robots.

During the Competition all coaches/team managers are not allowed to:

- enter the training and competition area;
- perform any manipulations with the robot.

## **1.4. External Influence**

The Competition Organizers are obliged to take all possible measures to ensure the best conditions for the competition. However, the specific conditions of the competition may not meet the expectations of the participants. With this in mind all teams should be ready that:

- there could be some surface irregularities up to 0.5 cm on the field.
- they will not be provided with direct, diffused and/or intense lighting. The flashlight can be used. So the teams should be ready to calibrate their robots under available lighting conditions.
- teams using an electronic compass as a sensor should take into account that electromagnetic interference (including from inventory items, from power lines, etc) can impact a sensor reading. So they may need to calibrate such sensors.

## **1.5. Typical Field Equipment**

It is optimal to use following materials and objects:

- the printed base of the field is made of a cast banner with a density of 300 g/m<sup>2</sup>;

- the «skittle» element is an empty soda can (330ml) wrapped in a piece of paper;
- the «brick» obstacle is a single-sized brick compliant with the National State Standard;
- the «hill» obstacle is a fixed straight triangular prism with a base in the form of an obtuse-angled isosceles triangle. The «hill» is installed on the field by the largest side face. Width (b), length (l), height (h) is determined by the relevant Contest Rules;
- the «stones» obstacle is made of a facing stone with a thickness of not more than 30 mm, stone fragments or crushed stone of a fine fraction;
- the «washboard» obstacle is a sequence of 5 or more fixed bars (wood strips), preferably with a semicircular cross-section, installed parallel to each other along the route. The bars are installed perpendicular to the track at intervals usually equal to the width of the bar. Bars can be made as a single structural element;
- the «curb» obstacle is a bar of arbitrary material, arbitrary color, rectangular, trapezoidal or rounded cross-section, fixed on the field. Length is 30-50 mm more than the maximum width of the robot in specific type (category) of competitions.

## 2. Registration

### 2.1. Application Filing

Only users signed up on the web-portal can apply for competitions.

In the competition registration system, it is necessary to apply for each individual robot and its development team.

One robot can be registered in each type of competition only once.

Both the team manager and one of the team members can register the robot and the team for the competition.

It is allowed to modify the same robot to participate in different types of competitions.

The team consists of Participants directly performing competitive activity and one or more Coaches/Team Managers.

The manager is required for a team with participants under the age of 18, otherwise the team cannot be registered.

The manager is not required in a team with participants of 18 years old or older. In this case, the responsibility and functions of communication with the Organizing Committee are assigned to the oldest participant.

One participant can be a member of only one team within one type of competition.

Once the application is submitted, each member of the team must confirm his/her participation in a web-portal personal account.

## **2.2. Application Processing**

Once confirmed by all team members and team manager, the application status becomes automatically «Under review».

The application is reviewed by the Organizing Committee. As a result, the Organizing Committee may:

- accept the application;
- reject the application;
- require clarification on application;
- make changes to the application at the request of a team.

After the application is confirmed and before the registration is closed, any modifications to the application are made by team members.

Once the registration is closed, only the Organizing Committee will make changes to the application at its discretion and after the team's request. At the discretion of the Organizing Committee, modifications to the application may be refused without explanation.

## **2.3. Competitive Admissions**

The Rules of a specific Event set the cases where an additional competitive selection is carried out on the photo, video and text materials provided during the application.

# **3. Requirements and Restrictions**

## **3.1. General Restrictions**

Participants under the age of 9 can take part in competitions under the responsibility of team managers and parents, taking into account the possibility of stress for

children.

Both the minimum and the maximum number of participants in one team can be limited according to the Contest Rules or by the Organizers of a specific Event.

### **3.1. General Robot Specifications**

It is forbidden to use a voltage above 12 in a robot.

The robot must be safe. It is forbidden to use any flammable substances.

The robot must not in any way damage the field or change the configuration of the track (for example, leave marks or efface the original line of the track).

Robots must be made exclusively by the participants themselves. No ready-made robots are allowed.

The program run by the robot must be written by the participants only. Any member of the jury has the right to check how the participant can explain the design and operating procedures of the robot as well as demonstrate the download of the program in the memory of the robot from the computer.

If there are some restrictions on size and/or weight of the robot in the Contest Rules, the referees must ensure before the competition starts that the robot meets the required dimensions.

To check the robot weight a scale is used. For measurement errors a tolerance of not over 5% applies, unless otherwise specified in the Contest Rules.

To check the robot size a special measure box is used, unless otherwise specified in the Contest Rules. This measure box is made of a transparent material; its inner size corresponds to the maximum allowed size of the robot. While remaining in the starting position, the robot must be fully and effortlessly placed in the measure box. It is allowed to make measuring equipment in the form of two-dimensional frames.

Measurement procedure: the robot is installed in the starting position on a horizontal surface, the referee puts exactly perpendicular the measure box on the robot. The inspection is successfully passed if the bottom of the measure box has fully touched the surface and when the box is being lifted up, the robot has not lifted up off the surface.

### **3.3. General Field Specifications**

The fields must meet the following criteria:

- safety of the material;



- uniformity and inertness of colouring;
- compliance with the dimensional and other requirements of the specific Contest Rules.

The field may have a logo and/or a name of the event organizer's company.

In the case of events holding via the RoboFinist web-portal, it is compulsory to apply the RoboFinist logo that is available for download at <https://robofinist.ru/logo>.

### **3.4. Competition Categories Restrictions**

Certain types of competition are held in several educational or age categories. Only the participants who meet certain requirements can take part in such competitions (see the list of categories below).

A team of participants with the same robot (or a team of robots) can take part in only one of the categories of any type of competition.

In each category, the winner is determined independently of other categories.

- Educational categories:
  - «beginners» - a team of participants who meet the following criteria:
    - after the age of 9 a participant has been doing robotics for no more than 1 year and is 15 years old or under in the year of the competition, who has never participated in this category of competition;
    - a participant under the age of 10, regardless of the length of his robotics training, who has never participated in this category of competition.
  - «continuing» - a team of participants who meet the following criteria:
    - after the age of 9 a participant has been doing robotics for more than 1 year or is 15 years old and older in the year of the competition;
    - a participant has already participated in this category of competition.
- Age categories:
  - «elementary» - the oldest team member is 12 years old or under in the year of the competition
  - «junior» - the oldest team member is 13,14 or 15 years old in the year of the competition
  - «junior high» - the oldest team member is 16 years old or older in the year of the competition. The Organizing Committee may decide that the oldest team

member in «junior high» category can not be over a certain age.

- Robot Design categories:
- «Educational Kits» - robots made of educational kits are allowed to participate (see 1.1. for the term «Educational Kits» and 3.5.);
- «Analog Robots» - robots without a digital element base are allowed to participate;
- «Premier League» - no requirements for the robot.

The above mentioned division into categories is not exhaustive; certain Contest Rules allow other dividing limits.

For certain types of competitions, the relevant Contest Rules may impose other categorization methods.

### **3.5. «Educational Kits» Additional Restrictions**

Robots assembled from manufacturer-standardized sets of robotic parts designed to teach robotics are allowed to participate in this category. Educational kits include kits and extensions to them supplied by Lego, Fischertechnik, VEX, Huna, TRIK, Robotis, Robo, MakeBlock, Robotrack, Hitechnic, Mindsensors, Smartbricks, unless otherwise specified in the Contest Rules.

It is allowed to use self-engineered wooden or plastic parts (including those 3D-printed, made on a laser or milling machine, etc.). Open metal parts that may touch with a field, inventory or other robot are not allowed in robot designs.

Controllers, sensors and motors can be used from educational kits only. It is allowed to use third-party manufactured sensors that correspond in functionality to standard sensors of an educational kit.

It is allowed to use controllers only in the form in which they are supplied by the manufacturer. The controller software may be modified.

## **4. Competition Procedure**

A team can take part only in the types of competition they applied.

### **4.1. General Provisions**

Competitions are held in compliance with the Contest Rules of the corresponding type of competitions.

The team brings its materials and equipment (robots, accessories and laptops, etc.) over to the competition. The Organizing Committee doesn't provide the specified equipment to participants unless otherwise provided by the Contest Rules of the corresponding type of competitions or not established by the Organizers of a specific Event.

In case of unexpected breakdown or malfunction of the robot or other team's equipment, the Organizing Committee is in no way responsible for their repair or replacement. Teams are advised to provide a set of spare parts, batteries, etc.

The Organizers of a specific Event or certain Contest Rules may introduce a requirement for assembly and programming of robots by the Operator or Participants themselves directly during the competition in a specially designated (technical) area.

During the competitions, the participants should:

- keep order and submit to discipline, be respectful to each other, to participants of other type of competitions, to spectators, judges and organizers of competitions;
- follow the instructions of the judges and organizers;
- do not spoil (dirty up, damage) the inventory used for the competition (field surface and additional field elements, measuring equipment, etc.);
- follow the schedule of the competitions established by the organizers, inform the organizers of the competitions or judges in advance about possible delays on the part of the participants.

In the competition area, only the operators of robots are allowed. The number of operators from one team can not exceed the number of robots of this team, necessary for the attempt. Spectators, managers and other team members who are not operators of the robot may not enter the competition area.

Assembling, programming and calibrating robots is carried out exclusively in the space designated by the Event Organizer (Technical Area). Under a special authorization of the Event Officials, it is allowed to calibrate robots (test runs) in the competition area (fields) strictly within the allotted time.

Coaches and team managers may enter the training area on the instructions (permissions) of the Judges or Organizers only, if this is allowed by the specific Contest Rules.

When assembly, calibrating and programming time ends and the quarantine time starts, the robots are placed in the quarantine area and are removed from there exclusively by the Operator and upon Judges command. During the attempt, the

operator is forbidden to enter into the robot any information about the configuration of the polygon, except for the calibration of color sensors.

The fact that the attempt is started means automatically the participant agrees that the field is in due condition. If the participant think that the field or any other element used in the competition is not in proper condition or does not comply with the Rules, he or she must inform the Judge of this before the attempt starts.

Responsibility for the safety of robots lies with their owners or team managers.

In the event of an accident due to a malfunction of the robot and/or the fault of the participant, the team manager is responsible for the incident.

The control and score calculation is carried out by the Panel of Juges in accordance with the Contest Rules.

All controversial points arising during the competition are resolved by the judges, all participants must comply with their decisions.

At the discretion of the Organizers of specific Event, a field design may be changed (but only within the framework of the requirements set by the specific Contest Rules), and even just before the start of the competition (but not during them).

Examples of such changes:

- configuration of the track line,
- location, type and number of obstacles.

## **4.2. One-by-One Competition**

Teams are given at least two attempts to complete the task. The final number of attempts is determined by the Organizers on the day of the competition. The best result of the attempts is taken into account.

Sequence of participants' performances is determined by the Organizers on the day of the competition and can be organized in the following ways:

- in ascending order of the application number;
- in alphabetical order;
- in random order.

## **4.3. One-on-One Competition**

Procedure for the conduct of such competitions is determined by the Organizers on the day of the competition and can be of following types:

- all-play-all system — each participant plays every other participant. Criteria for determining the winner in an all-play-all system in descending order of importance:
  - number of won matches;
  - number of lost matches;
  - number of matches in a draw;
  - number of earned points;
  - number of lost points;
  - results of one-on-one meetings.
- Olympic system (play-off) — a participant is immediately eliminated from the tournament after losing. The winner is the team that won the final round of the playoffs.

## 4.4. Mixed Match System

Types of competitions with a mixed match system are held in two rounds:

- Qualifying round that determines the ranked list of participants of this round.
- Final round that is held among the participants who have proceeded from the qualification round. The number of participants who reached the final round is determined by the Organizers.

During the the Olympic system final round, participants are paired on the “best with worst” principle according to the ranked list of finalists.

## 5. Disqualification

General grounds of disqualification are given in this section.

For additional grounds of disqualification see the Contest Rules.

### 5.1. Robot

Disqualification is made by the decision of the Judge.

The Organizers may give the opportunity to convert a violation before the competition starts. If the violation is corrected, the robot will not be disqualified. In the event of a repeated violation of the requirements during the same Event, the robot will be disqualified definitively.

The robot must be disqualified in the following cases:

- non-compliance with size and weight requirements;
- non-compliance with safety requirements for the structural design of the robot;
- the robot has non-standard communication sets or remote control, or such built-in facilities as BT, WiFi etc. are not switched off (unless otherwise specified by the specific Contest Rules);
- the robot reproduces or contains a device for reproducing offensive words or images;
- the body of the robot has insulting words or images on it;
- the robot is not ready for competitive actions within 30 seconds after the attempt (race, match) starts.

## 5.2. Participants

Disqualification is made by the decision of the Judge.

The participant must be disqualified in the following cases:

- rude and aggressive behavior;
- violation of the Competitors Code of Conduct
- serious or repeated violation of the requirements and prohibitions established by the General Competition Rules or by other Contest Rules;
- failure or inability to explain the design and operating procedures of the robot, as well as to demonstrate the loading of the program into the robot's memory.

## 6. Appeals

During the competition, participants can express disagreement with a decision made by the judge.

### 6.1. Appeal per Standard Procedure

A participant who disagrees with the decision of a judge must address verbal to the judge for explanation. If an explanation of a decision requires more than one minute, the explanation should be postponed until the break or end of the competition.

If the explanation given by the judge does not satisfy the participant, the participant must express his disagreement in writing in the form of an appeal, having justified it

consistent with the provisions of the Contest Rules and other related documents. The complaint is submitted to the Appeals Committee of the competitions. In the absence of the Competition Appeals Committee, the complaint is submitted to the chief judge of the competition. The complaint is filed no later than the end of these competitions.

Appeal filed per standard procedure shall be considered not more than one hour.

## **6.2. Appeal on an Urgent Basis**

The appeal procedure on an urgent basis can be initiated only if the participant disputes one of the following judge's decision:

- the denial of access to participate in the Double Competition (or one of the rounds of such competition);
- the disqualification of a participant (his/her robot) from the Double Competition, if the participant has not played all the matches;
- the participant's defeat in the Double Competition.

A participant who disagrees with the explanation of a judge regarding the decision may address verbal to the Appeals Committee of the competition with an appeal.

A verbal appeal on an urgent basis shall be considered within 15 minutes.

## **6.3. Appeal Proceedings**

On appeal the Appeal Committee reviews the arguments of the participant contained in the complaint submitted.

The participant can refer to:

- Own media (photo and video) in the event that running the competition there was not organized a continuous shooting of the competitive range in quality sufficient to establish the facts necessary for the decision of the committee;
- provisions of the published the Web-portal versions of the Contest Rules and other documents, if their force extends to the challenged ruling.

The Appeal Committee, when considering the complaint, may require the participant, the judge or other participants to provide additional materials and provide additional explanations. At the same time, the Appeals Committee may impose on the participant who lodged the complaint the obligation to independently find other

participants whose explanations will be necessary for the Appeal Committee to make a decision.

After reviewing the appeal, the Appeals Committee makes a decision:

- the consent with the decision of the judge and the refusal to satisfy the complaint;
- the cancellation of the judge's decision and the satisfaction of the complaint.

In the latter case, the Appeals Committee may appoint replay and (or) invalidate the results indicated in the complaint.

The decision of the Appeals Committee is final and not subject to further discussion. Event of a participant lodges an appeal on an issue already resolved by the Appeals Committee, the committee has the right do not accept this complaint.