International Tournament “ORBITA”

Regulations

2026

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1. General Provisions

1.1. Status and Purpose of the Tournament

1.1.1. The “Orbita” International Tournament (hereinafter referred to as the Tournament) is held with the aim of engaging teams of school students and students from secondary vocational, specialized secondary, and higher education institutions in space engineering and cutting-edge research in the field of global space exploration.

1.1.2. The tournament aims to:

- promoting space exploration and engineering fields among the younger generation;
- supporting projects for children and young people;
- providing students with practical experience in aerospace engineering;
- facilitating the exchange of experiences among participants from different countries.

1.2. Tournament Structure

The tournament consists of three main segments:

- Cosmonautics Project Contest;
- Satellite Building Competition;
- “International Space Education” Forum.

1.3. Description of the tournament segments

1.3.1. Cosmonautics Project Contest (hereinafter referred to as the “Contest”) involves school students preparing innovative projects in the field of space exploration, developing prototypes and models for exhibition and public presentation, with the aim of showcasing the project’s results at the Tournament finals.

1.3.2. Satellite Building Competition (hereinafter referred to as the “Competition”) involve teams of high school and college students designing scientific and/or technological experiments using small spacecraft, followed by the launch of these missions into the stratosphere, the conduct of experiments in microgravity conditions, the analysis of the data collected, and the presentation of their projects.

1.3.3. The “International Space Education” Forum (hereinafter referred to as the Forum) is a program that brings together representatives of the aerospace industry and aerospace education from around the world in one place. The Forum’s program includes:

- speeches by experts from the space industry and specialists in space education;
- the exchange of experiences between mentors and representatives of aerospace engineering education;
- visiting the facilities of the Russian State Space Corporation “Roscosmos”;
- excursions to museum complexes and planetariums.

1.4. Tournament Goals

The tournament is being held to achieve the following goals:

- Developing and enhancing cooperation and exchanging expertise among countries in the field of engineering and space education.
- Engaging schools, universities, and companies of space industry from countries around the world in active collaboration to improve the quality of engineering education for high school and college students.
- Demonstrating successful solutions in the field of space engineering education.
- Increasing the young generation’s interest in conducting research and engineering development in the fields of space exploration and Earth science.

1.5. Tournament Tasks

To achieve these goals, the organizers are focusing on the following tasks:

- To bring together participants (schoolchildren, students, and mentors) from around the world who are interested in aerospace education.
- To organize an educational program in which schoolchildren can learn the basics of spacecraft design and construction, as well as gain an understanding of scientific space programs.
- To educate participants on the main areas of fundamental space research and how these are implemented in space missions using small satellites (CubeSats).
- Organize stratospheric launches of CubeSat-format small spacecraft to test scientific, technological, and engineering solutions at altitudes of up to 24 km under conditions approximating those of actual space.

- Promote the integration of pre-university education with prospective areas of the space industry.

2. Organizers and partners

2.1. The Tournament Organizers:

- Engineering and Education Company “Education of the Future”;
- Non-Profit Organization “Center for Education in Space, Engineering and Natural Science”;
- Lab of Future;
- HSE University;
- Medovaya Consultants Private Limited, Madurai, Tamil Nadu, India;
- NTI Club Movement ;
- The National Technological Olympiad;
- National Committees (hereinafter referred to as the Committees) comprising the representatives of the participating countries.

The National Committees are state-level organizations related to aerospace industry and satellite construction, such as projects, schools, supplementary education centers, youth centers, industrial parks, colleges, and universities. Each country’s National Committee includes up to two representatives of organizations.

The list of representatives of the National Committees of the tournament is constantly updated, current data and contacts are available on the website: https://spaceeducation.info/en/orbita/

2.2. Tournament Partners:

- The State Corporation for Space Activities "Roscosmos",
- Ministry of Science and Higher Education of the Russian Federation;
- Stratospheric Flight Operator "Stratonavtica";

- UniSat Uzbekistan;
- SRM Public School (India).

2.3. Other Tournament partners are approved by the Organizers in due course and can be clarified and supplemented at any time before the Tournament Finals.

3. Expert Council

3.1. The Expert Council is formed from specialists, representatives of the space industry, and representatives of space engineering education from the country hosting the Tournament finals.
3.2. The Expert Council is authorized to verify the compliance of projects with the criteria developed by the organizers for the final defense.
3.3. The Expert Council is entitled to involve additional experts from among the staff of the Organizers, National Committees, and Tournament Partners, and/or relevant specialists from the aerospace industry and educational institutions.

4. Registration

4.1. The registration and participant selection processes are conducted separately in each country as part of the national phase and are regulated by representatives of the local National Committees. The selection of participants for the satellite building competition is carried out in accordance with the recommendations described in ***Attachment 1***.
4.2. The Organizers and/or National committees may extend the deadlines for registration and the selection rounds. Participants will be notified of any extensions via the website: https://spaceeducation.info/ru/orbita/, as well as through the Telegram channel https://t.me/orbitacontest or via local channels.
4.3. During registration, participants must provide consent for the processing of their personal data. For participants under the age of 18, consent from parents (or legal guardians) is required.
4.4. The Tournament organizers have the right to use materials provided by Tournament participants (photos, audio and video recordings, creative works, and teaching materials) for

publication on the Organizer's social media accounts, the official Tournament website: https://spaceeducation.info/orbita/, the Telegram channel: https://t.me/orbitacontest, and in the media, including on the Internet.

4.5. By registering for the Tournament, participants and team leaders agree to the terms regarding the processing of personal data, the receipt of newsletters, and the publication of abstracts and information about the authors in print and electronic formats.

4.6. Upon registration, Tournament participants are required to provide the Organizer and/or a representative of the National Committee with accurate personal information that allows for verification of the participant's compliance with the established requirements. If necessary, the participant must, upon the Organizers' first request, submit the relevant documents confirming the information provided during registration.

4.7. To monitor the registration process and facilitate timely communication with the Tournament teams, the National Committees must provide the Organizers with a list of registered participants from participating countries twice a month, on the 1st and 15th of each month.

5. Cosmonautics Project Contest

The cosmonautics project contest is held as part of the international tournament and is one of its main components.

5.1. The cosmonautics project contest (hereinafter referred to as the "Contest") is open to school students and students of colleges and universities who are between the ages of 12 and 18 at the start of the registration process. The number of teams per educational organization participating in the Contest is not strictly regulated.

5.2. The selection of projects for participation in the Competition shall be carried out by representatives of the National Committees according to the categories of sections described in paragraph 5.4. A maximum of 3 projects from each country for offline representation, and a maximum of 5 online are allowed for the final round. One team has one mentor/instructor supervising the project. The number of participants in one team is up to three people. **Organizers pay accommodation and meals for one participant from the team that passed the final on time and one mentor from the country for all projects presented by the country.** If the National Committee decides to bring a three-person team, then accommodation, food and transportation costs for the other two members are borne by the sending party. The organizers provide merchandise for all finalists.

5.3. The results of each project, along with mock-ups and prototypes, must be presented at the Tournament finals. During the finals, each project receives feedback and support from international experts in the field of space exploration and is evaluated by the Expert Council.
5.4. The cosmonautics projects are accepted for the Contest in the following sections:

- Section #1. Automatic Spacecrafts.
- Section #2. Human Spaceflight.
- Section #3. Space Robotics.
- Section #4. Earth's Remote Sensing.
- Section #5. Space Rocket and Propulsion Engineering. Launch Complexes.
- Section #6. Scientific Research and Interplanetary Missions.

5.5. The Contest participant shall provide the following for the project defense:
− Filled Project Summary form: (International_Tournament_Project Summary.xlsx)

− Digital presentation that supplements the speaker's report and illustrates the project content and results;

− Viewing materials: models, mock-ups, diagrams, pictures, and videos.

5.6. Each contestant’s presentation may last no longer than 10 minutes (per project) : 5–7 minutes are allocated for the presentation, and 3 minutes are reserved for answering questions from the jury and experts.
5.7. Requirements on the presentation:
− First slide: full name of the educational institution, project title, brief information about the author (full name, grade, supervisor), city, year;
− Format: any office software package, with a PDF copy of the presentation;
− Length: no more than 14 slides.
5.8. The winners of the Competition are determined by the Expert Council based on the highest total score received during the evaluation of the project in accordance with the Evaluation Criteria developed by the Organizers.
5.9. Based on the results of the reports and project presentations in each section, the winners with the highest scores are selected and awarded First, Second, and Third Place Certificates, as well as gifts from the partners.
5.10. All contest participants will receive a personalized certificate in English confirming their participation in the “Orbita” International Tournament.

5.11. The results of the Competition are final. No appeals will be accepted. The scores assigned by the members of the Expert Council will not be commented on. Works submitted to the Competition will not be reviewed.

6. Satellite Building Competition

The satellite building competition is held as part of the international tournament and is one of its main components.

6.1. Competition Participants

The following are participating in the competitive selection process for the competition:

- schoolchildren and college students (in secondary professional and secondary specialized education) aged 12 to 18, inclusive, as of the start of the competitive selection process;
- In addition, the team may include one university student who is no older than 21 years of age as of that date.

6.2. Team members and roles

6.2.1. Each team consists of 4 members.

6.2.2. The team will be selected as follows:

- without the participation of a university student: 4 high school students (or college students) aged 12–18;
- Involving a college student: 3 high school students (ages 12–18) and 1 university student (age 21 or younger).

6.2.3. The following roles are divided among the team members (one member per role):

- engineer;
- programmer;
- researcher;
- radio technician.

6.3. Team mentor

6.3.1. Each team must have one adult mentor (team leader).

6.3.2. A mentor is not a member of the team and is not allowed to work on the team's project.

6.3.3. The mentor provides academic guidance for the project and advises the team on technical and organizational matters.

6.3.4. The mentor is required to provide the Organizers with written consent to participate in the Tournament and confirmation that they have read and understood these rules.

6.4. Stages of the competition

The competition consists of three stages:

1. National selection stage.
2. Preparing for the final (preparatory stage).
3. The Final.

6.5. National selection stage

6.5.1. The national selection stage is conducted in a format determined by the country's National Committee, taking into account the Organizers' recommendations (refer to ***Attachment 1***).

6.5.2. At the conclusion of the national stage, one winning team from each country is selected, and that team earns the right to participate in the final of the competition.

6.5.3. If there is no National Committee in the country, the team may apply to participate directly to the Organizers.

6.6. Preparation for the finals

6.6.1. The winning team of the national stage, as well as each of its participants, must meet the requirements of the final of the Competition (including age) and provide a complete package of documents, including the written consent of parents (legal representatives) for underage participants.

6.6.2. As part of the preparatory stage, the task of the winning team of the national stage is to present the concept of the experiment on board the satellite to the Organizers, as well as its refinement, improvement and preparation for the stratospheric launch with the support of Tournament experts.

6.6.3. The National Committee ensures the winning team's preparation for the finals, including access to an educational facility with the necessary tools, consumables, and other materials and equipment.

6.6.4. The organizers will provide each finalist team with a free 3U CubeSat assembly kit (without payload) based on the IntroSat educational satellite kit. Kits will be shipped between September 10 and September 20, 2026.

6.6.5. The method of delivery is determined by the Organizers or National Committees. Delivery is to the nearest pick-up point of the transport company to the team's location. The team is responsible for picking up the equipment at the designated pick-up point.

6.6.6. Proof of receipt of equipment is any documentary evidence, including a signed delivery note from the transport company or a photograph of the team members with the received equipment.

6.6.7. During the preparation period for the finals, the organizers will conduct:

- no less than three general webinars on equipment operation and the basics of microcontroller programming;
- no less than three individual online consultations with Tournament experts for each finalist team.

6.6.8. The schedule of webinars and consultations will be published on the website https://spaceeducation.info/en/orbita/ and on the Tournament's social media no later than 14 days before the start of the final preparation stage.

6.6.9. The organizers reserve the right to make changes to the schedule no later than 24 hours before the start of the event, while undertaking to notify all teams and National Committees.

6.6.10. Finalist teams complete mandatory assignments as part of their project preparation for stratospheric launch. The assignments are completed online by webinar participants, with documents uploaded to the Orbita platform (https://orbita.education/en) within the deadlines set by the Organizers.

6.6.11. A failure to comply with one or more mandatory tasks within the established timeframe without a valid reason confirmed by the Organizers will result in the team being disqualified and not allowed to participate in the in-person final of the Competition.

6.6.12.The results of completing the mandatory tasks are taken into account in the final team score.

7. Tournament final

7.1. The Tournament Final will take place at the Skolkovo Innovation Center.
7.2. All participants and two mentors for each team will be provided with:

- accommodation and meals for the duration of the finals;
- equipment for experiment preparation (a CubeSat 3U stratospheric platform for Competition participants), as well as webinars and consultations;
- a stratospheric launch (for Competition participants);
- an excursion program during the finals: a visit to the Cosmonautics Museum, Roscosmos facilities, and a meeting with a cosmonaut;
- prizes, merchandise, and souvenirs.

The flight of the delegation from the country is paid for by funds raised by the organizers of the National Stage (long-distance plane or train tickets, from the place of residence to the venue of the Tournament).
7.3. To participate in the Orbita Tournament, the National Committee requires an organizational fee of $950 for the entire delegation from one country.
7.4. The registration fee is payable no later than September 10, 2026.
7.5. Teams participating in a final stage of the Cosmonautics Project Competition Tournament must bring their projects. Absence of the team representatives or their projects by the start of the stage will result in team disqualification.
7.6. During the finals, competition participants design and develop a space mission based on a CubeSat 3U.
7.7. The final task for the Satellite Building Competition includes developing an experimental scheme and a space mission project, developing a prototype experimental module, integrating it into the design and optimizing the operation of a small spacecraft, as well as conducting ground and flight tests of the developed Cubesats by launching into the stratosphere at an altitude of up to 24 km.
7.8. During the finals, teams receive additional consultations from the Tournament Experts.
7.9. The final score consists of an assessment of the team's work during the preparatory stage on the final and the results of the project's defense before the Expert Council of the Orbita International Tournament.

7.10. The criteria and procedure for evaluating the work of the Satellite Building Competition team during the finals will be published by the Organizers on the first working day of the finals on the official website of the Tournament.
7.11. The winner of the Satellite Building Competition is the team with the highest overall score.
7.12. The prizemans of the Satellite Building Competition are the two teams following the winning team by rating.
7.13. The rules of conduct for participants at the final of the Competition (including safety requirements, prohibition on interfering with the work of other teams, and other regulations) will be published by the Organizers on the first working day of the finals. Violation of these rules may result in a warning or disqualification of the team at the discretion of the Organizers.

8. International Space Education Forum

8.1. The Forum is a multilateral scientific and educational event aimed at developing international cooperation between educational, research, and space engineering private and public enterprises, as well as extension of relations with academic communities and public circles, encouraging the exchange of views among scientists and experts in astronautics, satellite engineering, and other aerospace fields.
8.2. The Forum meetings are attended by delegations formed by the National Committees and the Tournament Organizers.
8.3. The following activities are planned within the framework of the Forum:

- Presentation of the results of the Cosmonautics Project Contest and Satellite Building Competition finalists at the exhibition and at the conference;
- Speeches of the space industry and space education experts;
- Exhibition launches of spacecraft mock-ups carried out by private companies and student design bureaus;
- Visits to Roscosmos State Corporation facilities, museums, and planetarium;
- Seminars and experience sharing between space education mentors.

8.4. Official languages of the Forum are Russian and English.
8.5. The Forum takes place as a part of the Tournament in October, 2026.

9. Tournament Schedule

Event	Timeframe
National-level phase of the **Cosmonautics Project Contest**	**June 1 - September 15, 2026**
Approval of cosmonautics projects for the final round	September 15 - September 25, 2026
National-level phase of **Satellite Building Competition**	June 1 - September 10, 2026
Sending of 3U CubeSat kits	**September 10 - September 20, 2026**
Development of missions by the **Satellite Building Competition** finalists	September 10 - October 26, 2026
Tournament Final	October 26 - November 1, 2026
Forum "International Space Education"	October 31, 2026

9.1. The Tournament schedule may be changed (including the extension of individual stages of the Tournament) by decision of the Organizers and representatives of the National Committees.

Tournament websites:

- https://spaceeducation.info/en/orbita/
- https://t.me/orbitacontest

Attachments

№1. Recommendations for conducting the national team selection stage of the competition in satellite construction. Description of necessary competencies.

Purpose and format of selection

As part of the qualifying assignment, candidate teams must submit a motivational essay justifying the team's readiness and ability to develop and integrate a payload for the stratospheric launch.

Structure and content of the essay

In the essay, teams need to disclose:

- Motivation: substantiation of interest to participate in the event;
- Experience and competence: a description of the experiences and achievements of team members in electronics, design and robotics. Application of relevant diplomas and certificates is allowed;
- Technical basis: validation of skills in key areas:
    - *3D modeling:* design of fastenings and payload parts, experience in 3D CAD systems;
    - *Programming:* writing algorithms for data management and processing, knowledge of C++ syntax;
    - *Circuit engineering*: design and assembly of simple electrical circuits;
    - *Radio:* understanding the physical basis of the process, experience in receiving/transmitting data on radio channels;
    - *Analytical work:* ability to search, analyze and synthesize technical information from open sources.

Order of selection of finalists

Based on the evaluation of the essay, the National Committee selects the best 3 teams. With these teams oral interviews are conducted in a convenient format. The objectives of the interview are:

- *Verification of competencies:* confirmation of the stated technical experience and skills;
- *Motivation check:* assess team readiness for full development and integration cycle of device;

- *Communication assessment:* testing the team's ability to defend their technical solutions.

Following interviews, the National Committee approves one team to participate in the international tournament.

Guidelines for the distribution of responsibilities in a team and necessary skills and competencies

For effective project management, it is important to allocate roles (design, electronics, software, management). We do not require them to be rigidly entrenched - participants can help each other and change tasks as needed. The main thing is that each stage of work has a responsible one, and all team members understand common goals and current tasks. The optimal balance between a clear allocation of responsibilities and mutual assistance is the key to successful project implementation.

1. **Design engineer.** Designs and integrates payload and subsystem into CubeSat structure.
   Required skills: 3D modeling, drawing reading, tool working (3D printing, laser machine skills are welcome, etc.)
2. **Electrical engineer:** Performs assembly and packaging of on-board electronics. Writes and tests software for data collection, communication and machine control.
   Required skills: C/S++ programming basics, STM32 microcontroller family programming basics, Arduino IDE experience, knowledge of UART, I2C, SPI interfaces. Cooking skills, knowledge of electrical engineering at the basic level (ability to calculate and design simple circuits).
3. **Radio engineer.** Creates software for the radio module of the aircraft and for the ground station, providing reliable and uninterrupted communication with CubeSat during flight.
   Required skills: C/S++ programming basics, Python, STM32 microcontroller coding basics, Arduino IDE experience, understanding radio communication and radioelectronics.
4. **Specialist in theoretical analysis and research.** Responsible for the scientific justification of the experiment, including:
   - Theoretical modeling
   - Interpret data
   - Preparation of presentation materials

   Required skills: Information retrieval skills, analytical skills and logic-based thinking.