



МИНОБРНАУКИ  
РОССИИ



IV КОНГРЕСС  
МОЛОДЫХ  
УЧЕНЫХ



КУБОК РТК  
РОБОТЕХНИЧЕСКИЕ  
СОРЕВНОВАНИЯ

GEOSCAN

# INTERNATIONAL YOUTH ROBOTICS COMPETITIONS RTC CUP TOP LEAGUE: ROBOAERO



STATE RESEARCH CENTRE  
OF THE RUSSIAN FEDERATION  
CENTRAL RESEARCH AND  
DEVELOPMENT INSTITUTE FOR  
ROBOTICS AND TECHNICAL CYBERNETICS



МИНОБРНАУКИ  
РОССИИ

MINISTRY OF SCIENCE AND  
HIGHER EDUCATION  
OF THE RUSSIAN FEDERATION



[t.me/RTC\\_spb](https://t.me/RTC_spb)



[rtc.ru](http://rtc.ru)



[vk.com/rtccup](https://vk.com/rtccup)



GEOSCAN, RUSSIAN GROUP  
OF TECHNOLOGY COMPANIES



[t.me/geoscan\\_official](https://t.me/geoscan_official)



[geoscan.ru](http://geoscan.ru)

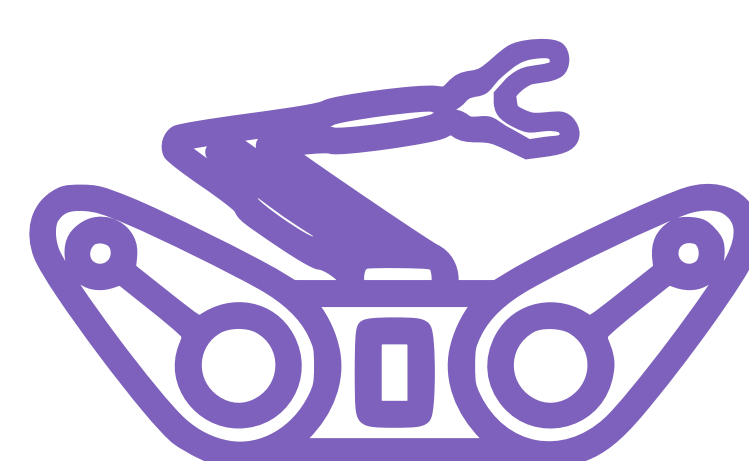


[vk.com/geoscan.aero](https://vk.com/geoscan.aero)



## TASK:

AUTONOMOUS SEARCH FOR CRASH-LANDED AIRCRAFT BY A GROUND ROBOT USING AERIAL PHOTOGRAPHY DATA OBTAINED FROM A QUADCOPTER.



## WHAT DO YOU NEED TO PARTICIPATE?

PROFICIENCY IN PROGRAMMING ROBOTS THAT PERFORM TASKS AUTONOMOUSLY USING A COMPUTER VISION SYSTEM. STUDENTS OF HIGHER AND SECONDARY EDUCATIONAL INSTITUTIONS CAN ENTER THE COMPETITION.

## PARTICIPATION FORMATS

ROBOT FROM HOSTS +  
COPTER FROM HOSTS

СКОРО:

ROBOT OF COMPETITORS +  
COPTER FROM HOSTS

СКОРО:

ROBOT OF COMPETITORS +  
COPTER OF COMPETITORS

## COMPETITORS MUST:

- IMPLEMENT AUTONOMOUS AERIAL PHOTOGRAPHY OF THE TESTING GROUND USING COPTERS THAT CAN READ QR CODES APPLIED TO GROUND OBJECTS;
- PROVIDE AUTOMATIC WIRELESS TRANSMISSION OF AERIAL PHOTOGRAPHY DATA FROM A COPTER TO A GROUND ROBOT;
- BASED ON THE OBTAINED AERIAL PHOTOGRAPHY DATA, IT IS NECESSARY TO AUTOMATICALLY ARRANGE A ROUTE AND GO ALONG IT BY A GROUND ROBOT TO THE DETECTED AIRCRAFT, TAKING INTO ACCOUNT THE OBSTACLES LOCATED AT THE TESTING GROUND;
- MAKE THE STOP IN THE DESIGNATED AREA NEAR THE AIRCRAFT.

## COMPETITION PROCESS:

PREPARATORY STAGE WILL START ON THE DAY OF OPENING OF THE REGISTRATION FOR THE HACKATON AND WILL END AT THE BEGINNING OF THE LIVE STAGE PARTICIPANTS WILL BECOME AWARE OF A GENERAL LIST OF TASKS TO BE COMPLETED AT THE TESTING GROUND; DETAILED INFORMATION IS AVAILABLE IN THE REGULATIONS - TRAINING GROUND DESCRIPTION SECTION.

AT THE LIVE STAGE, ON THE FIRST DAY, COMPETITORS WILL GET ACCESS TO THE TESTING GROUND, INCLUDING DESCRIPTION OF THE TASKS AND A SCORE SCHEDULE. MISSION CONSISTS OF INDIVIDUAL TASKS. DURING THE LIVE STAGE, COMPETITORS MUST INDEPENDENTLY PREPARE AND PROGRAM THE ROBOT AND COPTER TO COMPLETE THE TASKS AND THE MISSION IN GENERAL.

CENTRAL DAY OF THE COMPETITION: BASED ON THE RESULTS OF THE ATTEMPTS MADE BY THE TEAMS, THE SCORES WILL BE SUMMED UP AND THE WINNERS WILL BE DETERMINED.

## TEAM REQUIREMENTS

- AGE 17+
- EACH PARTICIPANT CAN ONLY BE IN ONE TEAM
- THE NUMBER OF TEAM MEMBERS MUST NOT EXCEED 4 PERSONS

## EQUIPMENT

- HOSTS WILL PROVIDE COMPETITORS WITH A ROBOT, A COPTER AND A LOCAL NAVIGATION SYSTEM



[vk.com/rtccup](https://vk.com/rtccup)



[t.me/cuprtc](https://t.me/cuprtc)



[cup.rtc.ru](http://cup.rtc.ru)

## ENGLISH SPEAKING CONTACTS

POLINA KUNAKOVA +7 (902) 194-58-40

ANASTASIA GURINOVA +7 (988) 258-25-29

YANA BARBANAKOVA +7 (964) 386-10-88