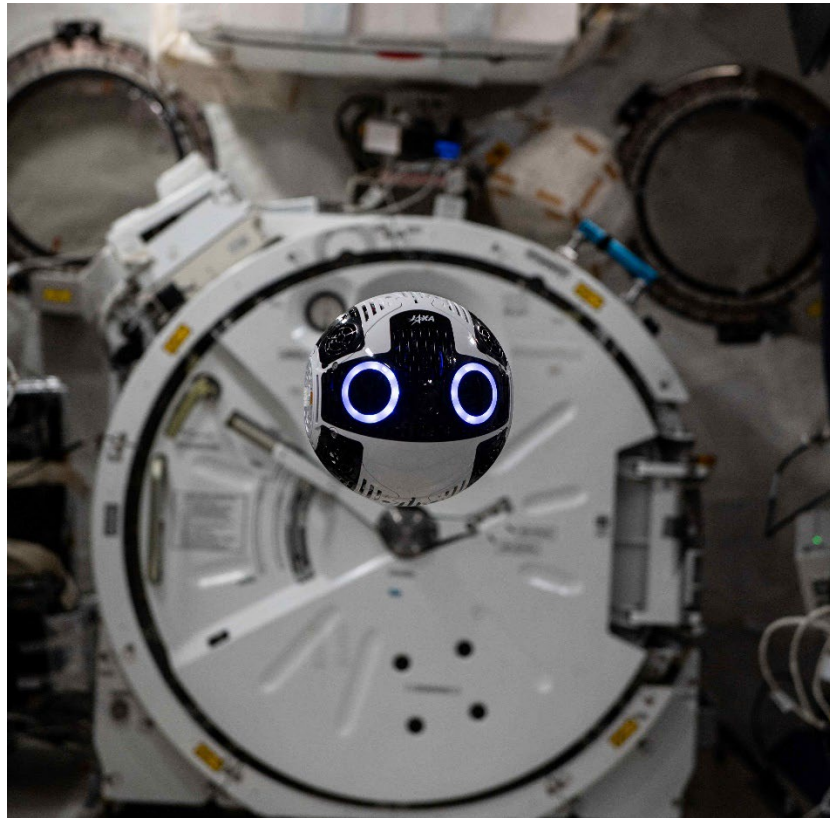


Version 1.0

Release Date: February 19<sup>th</sup>, 2024

# 5<sup>th</sup> Kibo Robot Programming Challenge Guidebook



Version 1.0 (February 19, 2024)

**Japan Aerospace Exploration Agency (JAXA)**

Version 1.0

Release Date: February 19<sup>th</sup>, 2024

## Revision History

Details regarding changes made to the document are shown below.

| Revision Date     | Version | Paragraph (s) | Revision Location |
|-------------------|---------|---------------|-------------------|
| February 19, 2024 | 1.0     | All           | -                 |

# Table of Contents

|                                              |    |
|----------------------------------------------|----|
| 1. Introduction .....                        | 1  |
| 1.1. Kibo-RPC.....                           | 1  |
| 1.2. Educational Objectives.....             | 1  |
| 1.3. ISS Robots.....                         | 2  |
| 2. Event Information .....                   | 3  |
| 2.1. Event Schedule .....                    | 3  |
| 2.2. Website and simulation Environment..... | 5  |
| 3. Kibo-RPC Entry Application .....          | 6  |
| 3.1. Entry Requirements .....                | 6  |
| 3.2. Team Formation Rules .....              | 9  |
| (1) Team Structure.....                      | 9  |
| (2) Team Leader .....                        | 10 |
| (3) Other Conditions .....                   | 10 |
| 3.3. Application.....                        | 10 |
| 4. Game Explanation .....                    | 12 |
| 4.1. Scenario.....                           | 12 |
| 4.2. Game Overview .....                     | 13 |
| 4.3. Game Flow .....                         | 13 |
| 4.4. Evaluation Standards .....              | 14 |
| 4.5. Information to be Released Later.....   | 14 |
| 5. FAQ .....                                 | 15 |

Attachment-1 Terms and Conditions

Attachment-2 Consent content based on EU GDPR

# 1. Introduction

## 1.1. Kibo-RPC

The Kibo Robot Programming Challenge (Kibo-RPC) is an educational program in which students will solve various problems by moving free-flying robots (Astrobee and Int-Ball) using their programming skills in a simulation environment and, in the final, in the Japanese Experiment Module (Kibo\*) aboard the International Space Station (ISS).

Through interaction with experts in the field of space and the opportunity to observe their work firsthand, students will be able to deepen their understanding and acquire specialized scientific knowledge.

Through this educational program, it is our hope students will take the initiative to learn the techniques and methods involved in programming and robotics, while honing their STEM (science, technology, engineering and mathematics) skills.

This program is hosted by the Japan Aerospace Exploration Agency (JAXA) in cooperation with the National Aeronautics and Space Administration (NASA).

\*Kibo is pronounced "key-bow" and means "hope" in Japanese.

## 1.2. Educational Objectives

In this program, by moving actual robots in the ISS based on hypotheses simulated in advance, students will learn about the importance of bridging the gap between simulation and reality when programming.

Students will learn to create programs that are robust enough to handle uncertainties and errors that cannot be easily simulated, such as external disturbances, and which work well in the real world. Through simulations, they will learn the need for multiple program revisions, attitude control for free-flying robots, and how to conduct missions within the ISS.

In the 5<sup>th</sup> Kibo-RPC, the focus is on image processing, and you will need to program your program for more accurate image processing. In addition, this year's competition is especially focused on Crew Support Practice, so the game rules are more practical.

## 1.3. ISS Robots

The ISS is equipped with Astrobee free-flying robots and Int-Ball<sup>\*1</sup>, a spherical camera drone. In the Kibo-RPC, students will create a program to move an Astrobee to designated locations within Kibo.

<sup>\*1</sup> Int-Ball will not be used in the competition this time, but will watch in the competition.

### Astrobee



Figure 1.3-1 Astrobee

Astrobee is NASA's new free-flying robotic system that will help astronauts reduce the time they spend on routine duties, leaving them to focus more on the things that only humans can do.

Working autonomously or via remote control by astronauts, flight controllers, or researchers on the ground, the robots can perform tasks such as taking inventory, documenting experiments, or moving small items or cargo throughout the station.

(<https://www.nasa.gov/astrobee>)

### Int-Ball

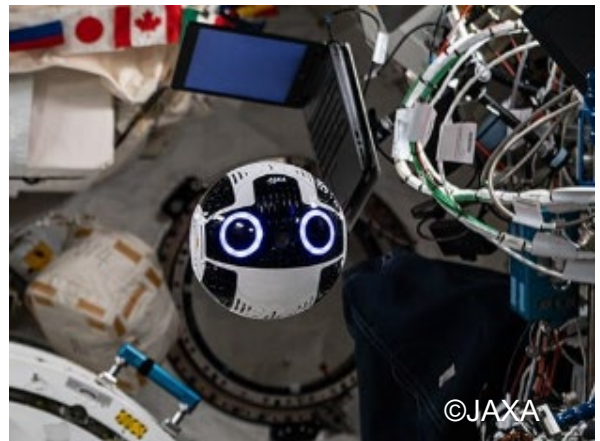


Figure 1.3-2 Int-Ball

Int-Ball is a free-flying camera drone designed to ultimately eliminate the need for crew members to capture routine video footage aboard the ISS/Kibo.

Similar to current consumer-grade cameras, Int-Ball is used by on board crew to provide flexible views for ground operators.

Int-Ball is perhaps the first human-friendly camera robot in space.

Testing is underway for full-scale operations in the future.

(<https://fanfun.jaxa.jp/topics/detail/10536.html>)

## 2. Event Information

### 2.1. Event Schedule

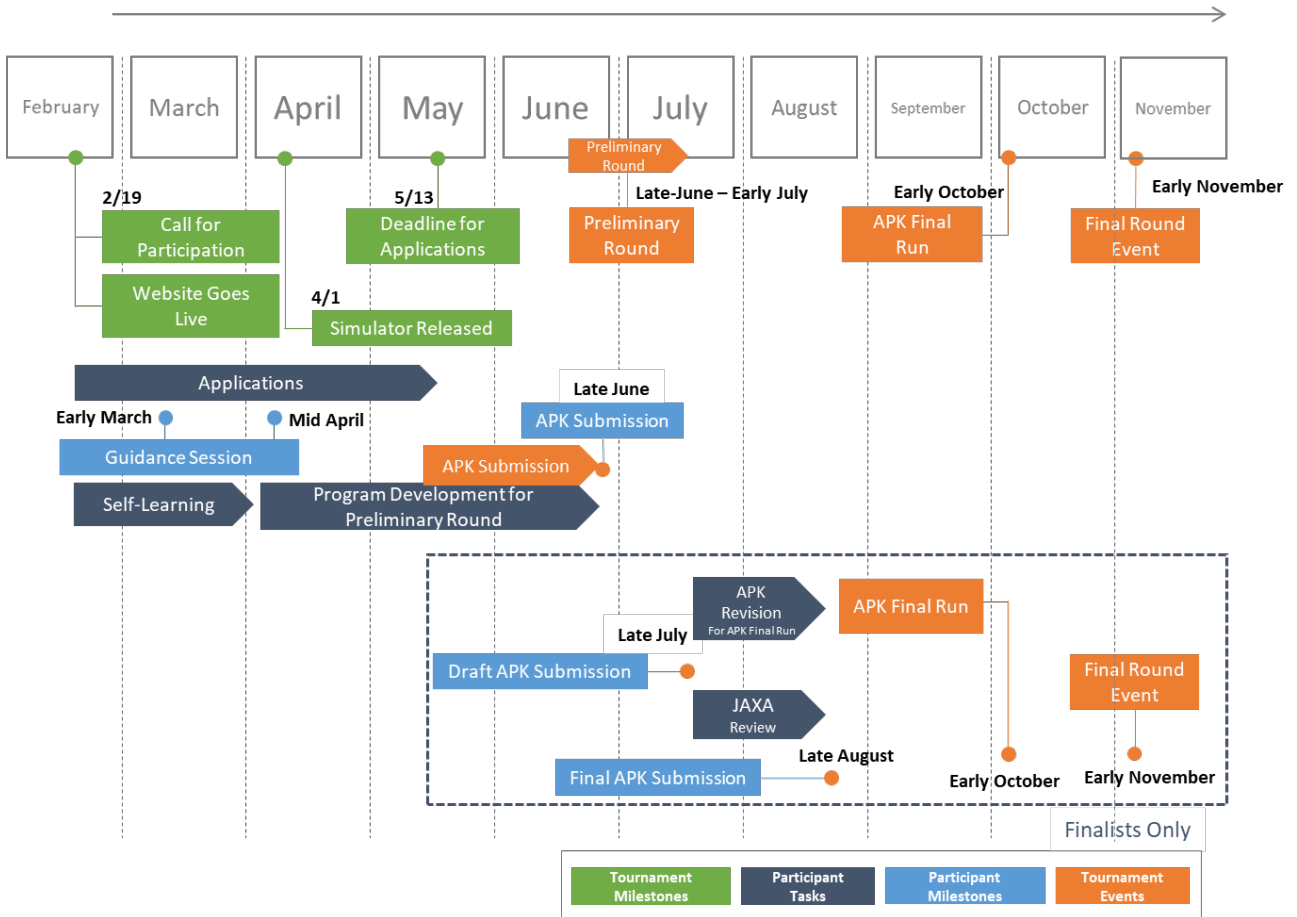


Figure 2.1-1 Entire Event Schedule

Table 2.1-1 Event Explanation \*Dates subject to change.

| Category               | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Call for Participation | <p><b>February 19 – May 13, 2024</b></p> <ul style="list-style-type: none"> <li>• A Kibo-RPC briefing session will be held during this period.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Self-Learning          | <p><b>February – April 2024</b></p> <ul style="list-style-type: none"> <li>• Participants may access the Github repository provided by NASA to learn how to program Astrobee.                             <ul style="list-style-type: none"> <li>➢ GitHub-1 (<a href="https://github.com/nasa/astrobee">https://github.com/nasa/astrobee</a>)</li> <li>➢ GitHub-2 (<a href="https://github.com/nasa/astrobee_android">https://github.com/nasa/astrobee_android</a>)</li> <li>➢ Astrobee Website (<a href="https://www.nasa.gov/astrobee">https://www.nasa.gov/astrobee</a>)</li> </ul> </li> <li>• Program development tutorials for beginners are also available on the website.</li> </ul> |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <ul style="list-style-type: none"> <li>Since the programming language is Java, learning Java will be helpful in developing programs for the preliminary round.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Program Development</b>           | <p><b><u>April – June 2024</u></b></p> <ul style="list-style-type: none"> <li>Using the web-based simulator, which is scheduled for release in early April, participants will develop their programs for the preliminary round.</li> <li>A rule book containing detailed game rules will be released at the same time as the simulator.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Preliminary Round</b>             | <p><b><u>Late-June – Early-July 2024</u></b></p> <ul style="list-style-type: none"> <li><b>Please participate in the preliminary round hosted by the designated agency in your country/region.</b></li> <li>Please develop and upload your Android Package Kit (APK) <b>through the web-based simulator by the submission deadline.</b></li> <li>The winning team (finalists) from each country/region will advance to the APK Final Run, which will take place aboard the ISS. <ul style="list-style-type: none"> <li>Please note that there may be further restrictions on the number of teams that can participate in the APK Final Run on the ISS. The number of teams and the selection method will depend on astronaut schedules and will be announced at a later date.</li> </ul> </li> <li>The competition will be judged by the space agency in each country/region based on scoring elements, game rules, and individual evaluation criteria set by JAXA.</li> <li>Details such as location and schedule will be announced by each country/region's space agency.</li> </ul> |
| <b>APK Revision (Finalists Only)</b> | <p><b><u>Mid-July – Late August 2024</u></b></p> <ul style="list-style-type: none"> <li>Finalists in the APK Final Run must revise their programs before installing them on Astrobee.</li> <li>The APK Final Run Simulator is scheduled to be released right after the preliminary round.</li> <li>Teams must submit a draft of their program in late July. JAXA will conduct a review of the program content from a safety perspective during the draft stage. <b>If there are any problems, the representative's team will have to modify their program according to JAXA's instructions. Please note that the schedule is tight.</b></li> <li>The deadline for submitting the final version of the program is <b>late August.</b> (Don't be late. More information will be released later.)</li> </ul>                                                                                                                                                                                                                                                                              |
| <b>APK Final Run</b>                 | <p><b><u>Early October 2024</u></b></p> <ul style="list-style-type: none"> <li>Finalists' programs will be installed on ISS Astrobee for the competition. Only the runs of your own team will be <b>available for online viewing</b> and at this point there will be no announcements regarding scores or ranking.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Final Round Event</b>             | <p><b><u>Early November 2024</u></b></p> <ul style="list-style-type: none"> <li><b>The results and ranking of each finalist's games in the APK Final Run will be announced.</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|  |                                                                                                                                                                                                  |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"><li>· The competition will be judged based on the scoring elements and game rules set by JAXA.</li><li>· The event will be live-streamed on YouTube.</li></ul> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2.2. Website and simulation Environment

The web-based simulation environment will be prepared in phases.

Table 2.2-1 Release Schedule

| Event                                       | Dates         |
|---------------------------------------------|---------------|
| Programming Manual                          | April 1, 2024 |
| Rule Book                                   | April 1, 2024 |
| JAXA Web-based Simulation Environment       | April 1, 2024 |
| Simulation Environment Update for APK Final | Mid-July 2024 |

The website of previous Kibo-Robot Programming Challenge

1st: <https://humans-in-space.jaxa.jp/krpc/1st/index.html>

2nd: <https://humans-in-space.jaxa.jp/krpc/2nd/index.html>

3rd: <https://humans-in-space.jaxa.jp/krpc/3rd/index.html>

4th: <https://humans-in-space.jaxa.jp/krpc/4th/index.html>



## 3. Kibo-RPC Entry Application

**Some countries/regions participating in Kibo-RPC may differ in terms of requirements such as nationality, number of persons in a team limit, and age limit for participation, etc. Please check with the space agency in the relevant country/region for details.**

### 3.1. Entry Requirements

Students who live in one of the Kibo-ABC member countries/regions<sup>\*1</sup> or the US and who are enrolled in a school up to graduate school in a country/region<sup>\*2</sup> participating in Kibo-RPC (including foreign students) are qualified to enter. Exceptions may be made in cases such as those shown below if approved by the Point of Contact (space agency) (POC) of the country/region participating in the Kibo-RPC in which they reside. If you think that applies to you, please contact your POC.

#### Special Cases:

- 1) Non-students may be eligible to compete, as long as they are not professional programmers.
- 2) Students studying outside their country may be allowed to form a team representing their country in the place in which they are studying.

<sup>\*1</sup> Kibo-ABC Member Countries/Regions (in alphabetical order)

Australia, Bangladesh, Indonesia, Japan, Malaysia, Nepal, New Zealand, Republic of the Philippines, Republic of Korea, Singapore, Taiwan, Thailand, United Arab Emirates, Vietnam

Kibo-ABC URL: <https://humans-in-space.jaxa.jp/biz-lab/kuoa/kibo-abc/>

<sup>\*2</sup> Countries/Regions Participating in the 5th Kibo-RPC (as of February 2024)

Australia, Bangladesh, Japan, Malaysia, Nepal, Singapore, Taiwan, Thailand, United Arab Emirates, the United States of America

※Other Kibo-ABC member countries/regions are also being considered for participation.

In the 5th Kibo-RPC, **an additional slot has been established to expand the competition internationally and allow students from developing economies and economies in transition that are United Nations Member States which are not "Countries/regions participating in the 5th Kibo-RPC" in <sup>\*2</sup> above.** This slot was realized in cooperation with the United Nations Office for Outer Space

Version 1.0

Release Date: February 19<sup>th</sup>, 2024

Affairs (UNOOSA). For details of this slot, please refer to the UNOOSA Website for detailed entry requirements.

- UNOOSA Website

[https://www.unoosa.org/oosa/en/ourwork/access2space4all/Kibo-RPC/Kibo-RPC\\_Rounds.html](https://www.unoosa.org/oosa/en/ourwork/access2space4all/Kibo-RPC/Kibo-RPC_Rounds.html)

See Table 3.1 to see which countries you can apply to participate.

Table3.1 Team Category

| Case | Nationality of participants                                                                                                    | Location of their School                                                                                                       | Means of Participation <sup>*1</sup>                                                                             |
|------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1    | Kibo-RPC Participating Countries/Region                                                                                        | Kibo-RPC Participating Countries/Region                                                                                        | Apply from the preliminary round of the country/region the team members are from or where the school is located. |
| 2    | Kibo-RPC Participating Countries/Region                                                                                        | Kibo-RPC <b>non</b> -participating countries/region                                                                            | Apply from the preliminary round of the country/region the team members are from.                                |
| 3    | Kibo-RPC <b>non</b> -participating countries/region                                                                            | Kibo-RPC Participating Countries/Region                                                                                        | Apply from the preliminary round of the country/region where the school is located.                              |
| 4    | Kibo-RPC <b>non</b> -participating countries/region <u>from developing economies and economies in transition</u> <sup>*2</sup> | Kibo-RPC <b>non</b> -participating countries/region <u>from developing economies and economies in transition</u> <sup>*2</sup> | Apply from the preliminary round through the UNOOSA international slot.                                          |
| 5    | Kibo-RPC <b>non</b> -participating countries/region <u>from developing economies and economies in transition</u> <sup>*2</sup> | Kibo-RPC <b>non</b> -participating countries/region <u>from developing economies and economies in transition</u> <sup>*2</sup> | Apply from the preliminary round through the UNOOSA international slot.                                          |
| 6    | Kibo-RPC <b>non</b> -participating countries/region <u>from developing economies</u> <sup>*2</sup>                             | Kibo-RPC <b>non</b> -participating countries/region <u>from developing economies and economies in transition</u> <sup>*2</sup> | Apply from the preliminary round through the UNOOSA international slot.                                          |

\*1 Multiple entries in various preliminary rounds in different country/regions is not allowed.

\*2 For the country classification, see the [World Economic and Situation Prospects 2024](#) published by United Nations Department of Economic and Social Affairs and other related organizations.

## 3.2. Team Formation Rules

### (1) Team Structure

- A Team must consist of at least 3 and no more than 8 members. (Guardians are not counted in the number of team members.)
  - ✓ Some participating countries/region may have a maximum number of team members. For details, please check the application guidelines for each country/region.

Table 3.2 Number of Team Members (Dated February 2024)

| Participating Countries/Region | Number of Team Members |
|--------------------------------|------------------------|
| Australia                      | 3-8                    |
| Bangladesh                     | TBD                    |
| Japan                          | 3-8                    |
| Malaysia                       | 3-8                    |
| Singapore                      | 3-6                    |
| Taiwan                         | 3-8                    |
| Thailand                       | 3-4                    |
| United Arab Emirates           | TBD                    |
| USA                            | 3-6                    |
| UNOOSA                         | TBD                    |

- At least one of the team members must be eligible for one of the cases in Table 3.1.
  - ✓ If the team is eligible for multiple cases, apply to the preliminary round of the case with a smaller number.
    - Ex) If your team is eligible for both cases 1 and 3, you need to apply from case 1.
- No student may belong to multiple teams.
- After the preliminary round is over and a team has been selected by the POC, team members may not be changed.

## (2) Team Leader

- Each team shall have a representative to manage the team as leader. A student or guardian (or teacher) on the team may be the team representative.
- The Team Representative is responsible for:
  - ✓ Managing the team's programming progress
  - ✓ Submitting the application forms
  - ✓ Submitting the programs
  - ✓ Communicating and sharing information with the POC in your country/region and secretariat (please make sure to check the correspondence from the POC and secretariat).

## (3) Other Conditions

- The following skills and knowledge are preferred but not required\*:
  - ✓ Android programming and image processing with Java
  - ✓ Knowledge of college-level physics and mathematics

\*These skills may be required to deliver results in the competition
- When applying, please be sure to review the contents of the attached Kibo-RPC Entry Agreement and tick the consent confirmation box on the Application Form.

## 3.3. Application

(1) Select the URL for the preliminary round of the applicable country/region on the Kibo-RPC website (<https://jaxa.krpc.jp/>), fill in the form and submit it. Please note that the required items may differ depending on the POC of the preliminary round. The main common items are shown below. We recommend that you have the details ready before you start.

- ✓ Team Name (English)
- ✓ Team Leader:  
Name (English), age, nationality, affiliation, address, phone number, and email address
- ✓ Team Sub-leader (optional):  
Email address (backup contact information)
- ✓ Guardian and Teacher Information (only for teams consisting of high school students and younger):  
Name, phone number, email address

- ✓ Team Members:  
Name, age, nationality, affiliation, history of past participation in Kibo-RPC
- ✓ How you came to know about Kibo-RPC.
- ✓ Team introduction and enthusiasm
- ✓ Consent to the Terms of Participation.

(2) After your application is accepted, you will receive an email containing your login ID and password to access JJAXA's web-based simulator and the participants' page on the Kibo-RPC site.

Please allow 3 business days for registration to be completed.

**Application deadline: May 13, 2024 at**  
**23:59 (JST)**

## 4. Game Explanation

### 4.1. Scenario

One day in 2024, an astronaut on the ISS was busy preparing for the Asian Try Zero-G event. The "[Asian Try Zero-G](#)" is an event in which students in the Asia-Pacific region propose ideas for simple experiments that can be conducted in micro-gravity, and the selected experiment themes will be performed by an astronaut onboard. On the day of the event, the students who proposed the experiments came all the way to the Tsukuba Space Center to watch the experiments conducted by the astronaut in real-time. Students who could not come to the Tsukuba Space Center were also waiting to watch the experiments online. However, when the astronaut checked the whereabouts of the tools and manuals necessary for the experiment, he/she found that some were missing. With the large amount of materials on the ISS, searching for things can be very time-consuming. There is not much time left before the event starts. Other astronauts are unable to help due to other missions, yet Astrobee, a robot that can fly autonomously and support astronauts, is available to operate in Kibo.

The search procedure is as follows. First, command Astoebee to go around the Kibo module and remember where everything is. Once that is done, it will go to the astronaut and ask what the astronaut is looking for. If the items found match what Astrobee has memorized, Astrobee informs the location of the items to the astronaut.

It is about time to start the experiment. Can you find the missing tools?

### ***Mission***

**Work with Astrobee to find the items the astronaut is looking for!**

\*Please note that this story is fiction.

## 4.2. Game Overview

Within the time limit, move Astrobee from the starting position (docking station) to the position where the images of objects in Kibo are placed, and read all the images. After that, Astrobee will move to the astronauts, read the image of the object that the astronaut is looking for, and ask the astronaut to tell us what he/she is looking for. After reading the images, the Astrobee moves in front of the object that the astronaut is looking for and takes a picture of it. The mission ends when the Astrobee shines its Signal Lights, which signal that it has found the object, and tells the astronaut where the object is.

## 4.3. Game Flow

- ① Start from the docking station.
- ② After the starting, it will patrol the several candidate sites for the location of objects prepared in the Kibo module while avoiding KOZ. <sup>\*1</sup>
- ③ After it finishes its patrol, it moves to the astronaut and reports what objects (images) it found and where.
- ④ It asks the astronauts to tell it what they are looking for by reading the image in their hands.
- ⑤ Astronaut will move close to the object they are looking for and it will take a picture of it.
- ⑥ After the photo is taken, the Signal Lights will light up to inform the astronaut of the location of the object and the game will end.

<sup>\*1</sup>Keep Out Zone (KOZ): Astrobee is unable to enter these areas. If you attempt to enter a KOZ you will be denied entry.

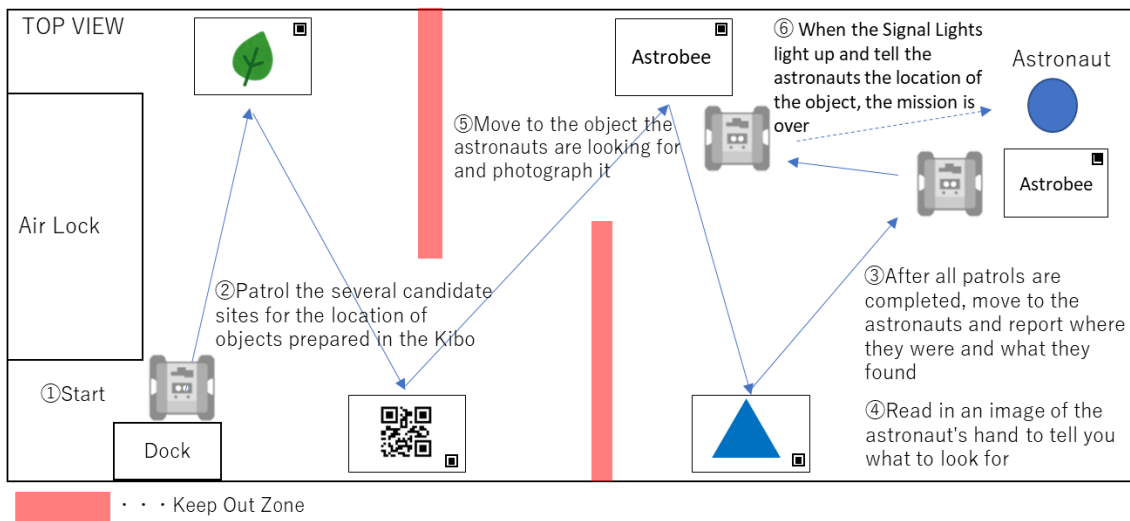


Image 4.3-1 Game Flow





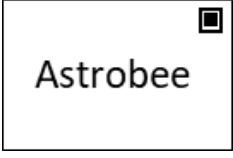
|                | Image                                                                             | QR Code                                                                            | Character String                                                                    |
|----------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Image Examples |  |  |  |

Image 4.3-2 Examples of Items to Search For (Actual image is different)

## 4.4. Evaluation Standards

We will evaluate whether Astrobee is able to quickly and accurately recognize what images of the missing items were found in what areas and whether Astrobee can properly locate the missing items.

In the preliminary round, simulations will be run in multiple patterns with different random elements (location of objects, things the astronaut is looking for), and the average of the scores will be the final score. For more details, please refer to the rulebook to be released in April.

## 4.5. Information to be Released Later

The following information will be available in the Kibo-RPC Rulebook in April 2024.

1. Starting position and orientation
2. Placement area for each object
3. KOZ coordinates and size
4. Objects to be placed
5. Astronaut's position and orientation

## 5. FAQ

| No. | Question                                                                                | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | What if I want to add a member? Or I want to modify my registration details?            | <p>Additions can be made as long as they are within the maximum limit. Please contact the POC by email, including the following details. For revisions, please include the following information as well.</p> <ul style="list-style-type: none"> <li>① Team Name</li> <li>② Name of member to be added or changed (English)</li> <li>③ Affiliation for additional member/member changes</li> <li>④ Nationality for additional member/member changes</li> <li>⑤ Age of additional member/changed member</li> <li>⑥ Past competition experience for additional member/changed member</li> </ul> |
| 2   | What should I do if I applied for participation, but was not issued an ID and password? | Please allow 3 business days for registration to be completed. If it takes longer than that, please contact the POC by email.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3   | When can I start developing my program?                                                 | <p>Using the web simulator, which will be released in early April, students will develop programs in preparation for the preliminary round. Until then, participants can study Astrobee programming through Github, which NASA has made available to the public, as an independent study period. For details, please refer to 2. Event Information.</p> <p>Materials distributed up to last year can be downloaded from each Kibo-RPC site for your reference.</p>                                                                                                                            |
| 4   | It says that knowledge of college-level physics and mathematics is required,            | Although some of the content requires university-level knowledge, elementary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|   |                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | but can elementary or junior high school students participate? | and junior high school students can also participate. In past competitions, some teams of only elementary school students have participated in preliminary round.                                                                                                                                                                                                                                                                                                 |
| 5 | Can I contact members from other teams?                        | Please feel free to contact members through the forum set up in the simulation.                                                                                                                                                                                                                                                                                                                                                                                   |
| 7 | Can I use a Mac?                                               | You are welcome to proceed with development on a Mac, but since it is not the recommended development environment for this program, the secretariat cannot provide support for it.                                                                                                                                                                                                                                                                                |
| 8 | What should I do if I cannot create a local simulation?        | <p>Please proceed with the construction while referring to the programming manual to be released in early April.</p> <p>If you are unable to solve the problem, please provide us with the following information using the inquiry form.</p> <ul style="list-style-type: none"> <li>① Operating environment</li> <li>② Which command was executed (which step in the manual)?</li> <li>③ What kind of errors were generated (output results and logs)?</li> </ul> |

# Terms and Conditions

Applicants must agree to all of the terms below. If you live in the European Union, please agree to the contents of the attached materials.

## 1. Privacy Policy

- (1) Collected personal information will only be used for the operation of the Kibo-RPC, and possibly used for public relations of JAXA's events and taking surveys on career path.
- (2) The videos and photos taken at this tournament will be made publicly available.

## 2. Responsibility of Applicant and Exemption Clause of JAXA

- (1) JAXA will not be liable for any problems that may occur during program participation. Applicants need to take full responsibility for solving issues of this nature that may arise
- (2) Applicants must guarantee that information on the application form and the program code do not violate any legal rights or obligations, such as intellectual property or export control, as applicable. If a legal problem related to the submitted information arises, the applicant will take full responsibility to solve the problem
- (3) If there is a violation of these matters registration may be canceled, even after registration.

## 3. Notes

- (1) Underage applicants must first obtain parental consent.
- (2) Do not use the simulator environment provided in the Kibo-RPC for any purpose other than the Kibo-RPC. Sign-on information for accessing the simulator environment will be made available only to the competition applicants. Do not disclose this information to anyone else.
- (3) JAXA may use the program codes and results of the competition for the purpose of public relations and education.

# Consent content based on EU GDPR

For the purposes of notification of competition information, Sending of prize certificates and commemorative gifts, provide information to POC in countries/regions other than Japan for the purpose of managing the event, JAXA needs to collect your personal data requested in the present form. You may at any time object to the use of your data for this purpose by writing to the following address:

[Z-KRPC@ml.jaxa.jp](mailto:Z-KRPC@ml.jaxa.jp)

You will find below all the detailed information concerning this processing of your personal data and a reminder of your rights, in application of the legislation in force.

JAXA, willing to respect the privacy and protection of personal data of its prospects and clients, complies with the legislation in force regarding the protection of personal data as data controller, and in particular Law no. 78-17 of 6 January 1978 (the "Data Protection Act") and, from 25 May 2018, Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and the free movement of such data (the "GDPR").

PLEASE BE INFORMED THAT THE PERSONAL DATA WILL BE TRANSFERRED TO JAPAN AND POC AND TEAM OF THE PARTICIPATING COUNTRIES/REGIONS FOR THE PURPOSE AS DESCRIBED ABOVE.

You have, under the conditions defined by the Data Protection Act and the GDPR, unless otherwise provided:

- (i) The right to withdraw at any time your consent to the processing implemented by JAXA based on such consent ;
- (ii) The right to obtain from JAXA the confirmation that your personal data are or are not processed and, when they are, access to said personal data as well as to several information on the processing (processing purposes, categories of personal data concerned, recipients or categories of recipients to whom your personal data have been or will be communicated, the retention period of the personal data envisaged or, where this is not possible, the criteria used to determine this duration, etc.)
- (iii) A right of access, rectification and/or erasure of your personal data;
- (iv) The right to receive your personal data provided to JAXA, in a structured, commonly used, and legible format, and the right to transfer this data to another data controller without JAXA having to obstruct it;
- (v) A right of opposition, for legitimate reasons, to the processing of your personal data and the right of opposition to the use of such personal data;
- (vi) The right to request from JAXA the portability of your personal data in the event you wish to obtain the transfer of your personal data to the benefit of another data controller.

You can set, change and revoke at any time guidelines for the retention, erasure and communication of your personal data after your death. You have the right to appoint a third party to whom your data may be communicated after your death. You agree to inform this third party of your approach.

You may exercise the rights described above by writing to JAXA at the following email address:

[Z-KRPC@ml.jaxa.jp](mailto:Z-KRPC@ml.jaxa.jp)