**INSTRUCTIONS TO COMPLETE THE APPLICATION FORM**

Fill in every section of this document with as much detail as you can, following the instructions given.

1. Please prepare the KiboCUBE Mission Application Form in accordance with the instruction and guidelines given in this template.
2. Make the descriptions in the documents specific and comprehensive utilizing charts and tables. Reference in the text all charts, figures, and tables used.
3. The template has two types of fields to be filled in:

* Mandatory fields are marked with [M]
* Optional fields are not applicable to all CubeSats and are marked with [O]. They shall be only completed if the topic is relevant to your application.

1. Sections and subsections will contain a description of their expected content marked with [DESCRIPTION]. Please use graphic material such as diagrams when necessary to clarify your input.
2. Using the provided Microsoft Word templates is mandatory. The application should follow the following general format:
   1. Size of paper: A4
   2. Margins: 20 mm from the edge
   3. Page number: 15 mm from the bottom edge
   4. Font and size: Times New Roman 10-12 points
   5. The application should be submitted in PDR format, and text in the pdf file shall be selectable
3. Please do not include this page in your application

**IMPORTANT: The application is only considered valid if all the information requested by the Announcement of Opportunity is provided.**

Table of Contents

[1. BASIC INFORMATION [M] - 5 -](#_Toc135904664)

[1.1. Project title: [M] - 5 -](#_Toc135904665)

[1.2. Executive Summary: (no more than 150 words) [M] - 5 -](#_Toc135904666)

[1.3. Certificate [M] - 6 -](#_Toc135904667)

[1.4. Head of Applying Organisation Information [M] - 7 -](#_Toc135904668)

[2. TEAM COMPOSITION - 8 -](#_Toc135904669)

[2.1. Description of Cooperation [O] - 8 -](#_Toc135904670)

[2.2. Project Coordinator [M] - 8 -](#_Toc135904671)

[2.3. Team Member [M] - 9 -](#_Toc135904672)

[2.4. External Support [O] - 10 -](#_Toc135904673)

[3. PROPOSAL TECHNICAL ABSTRACT [M] - 10 -](#_Toc135904674)

[4. MISSION OBJECTIVES AND REQUIREMENTS - 10 -](#_Toc135904675)

[4.1. Mission Statement: Contribution to Capacity-Building [M] - 10 -](#_Toc135904676)

[4.2. Foreseen Outcomes and Deliverables [M] - 11 -](#_Toc135904677)

[4.3. Novelty and Uniqueness [M] - 11 -](#_Toc135904678)

[4.4. Technical Heritage [M] - 11 -](#_Toc135904679)

[4.5. Requirements - 11 -](#_Toc135904680)

[4.5.1. Mission Requirements [M] - 11 -](#_Toc135904681)

[4.5.2. CubeSat Design Requirements [M] - 12 -](#_Toc135904682)

[4.5.3. Ground Segment Design Requirements [O] - 12 -](#_Toc135904683)

[4.5.4. User Segment Design Requirements [O] - 12 -](#_Toc135904684)

[4.5.5. Operation Requirements [M] - 12 -](#_Toc135904685)

[5. SYSTEM SPECIFICATIONS AND DETAILED DESCRIPTION - 13 -](#_Toc135904686)

[5.1. CubeSat Overall Setup - 13 -](#_Toc135904687)

[5.1.1. Main Specifications [M] - 13 -](#_Toc135904688)

[5.1.2. 3D View [M] - 13 -](#_Toc135904690)

[5.1.3. External Dimensions [M] - 14 -](#_Toc135904691)

[5.2. System Block Diagram and List of Components [M] - 14 -](#_Toc135904692)

[5.2.1. System Block Diagram [M] - 14 -](#_Toc135904693)

[5.2.2. List of Components [M] - 14 -](#_Toc135904694)

[5.2.3. Subsystems Design [M] - 14 -](#_Toc135904695)

[5.2.4. Description of Internal Interfaces [M] - 16 -](#_Toc135904696)

[5.3. Concept of Operations [M] - 17 -](#_Toc135904697)

[5.4. Communication Links [M] - 17 -](#_Toc135904698)

[5.5. Ground Segment [M] - 18 -](#_Toc135904699)

[5.6. User Segment [O] - 18 -](#_Toc135904700)

[5.7. Safety [M] - 18 -](#_Toc135904701)

[6. ASSEMBLY, INTEGRATION, AND TESTING - 18 -](#_Toc135904702)

[6.1. Verification and Validation Planning [M] - 18 -](#_Toc135904704)

[6.1.1. Verification Plan for Design Requirements [M] - 18 -](#_Toc135904705)

[6.1.2. Verification Plan for Operation Requirements [M] - 18 -](#_Toc135904706)

[6.1.3. Validation Plan for Mission Requirements [M] - 19 -](#_Toc135904707)

[6.2. Facilities - 19 -](#_Toc135904710)

[6.2.1. Description of the assembly facilities [M] - 19 -](#_Toc135904711)

[6.2.2. Description of the testing facilities [M] - 19 -](#_Toc135904712)

[6.2.3. Description of the facilities that are missing [M] - 19 -](#_Toc135904713)

[7. PLANNING - 20 -](#_Toc135904714)

[7.1. Work Breakdown Structure [M] - 20 -](#_Toc135904720)

[7.2. Design and Development Schedule [M] - 20 -](#_Toc135904721)

[7.3. Operations Schedule [M] - 20 -](#_Toc135904722)

[7.4. End of Life and Deorbiting schedule [M] - 20 -](#_Toc135904726)

[8. BUDGET - 21 -](#_Toc135904727)

[8.1. Budget Plan[M] - 21 -](#_Toc135904731)

[8.2. Budget Source and Expected Budget Source [M] - 21 -](#_Toc135904732)

[9. TRANSPORTATION TO JAPAN [M] - 21 -](#_Toc135904733)

[10. LICENSING AND COMPLIANCE WITH INTERNATIONAL GUIDELINES AND REGULATIONS - 21 -](#_Toc135904734)

[10.1. Frequency allocation [M] - 21 -](#_Toc135904741)

[10.2. Space Object Registration [M] - 22 -](#_Toc135904742)

[10.3. Compliance to the Space Debris Mitigation Guidelines and the applicable Guidelines for the Long-Term Sustainability of Outer Space Activities [M] - 22 -](#_Toc135904743)

[10.4. Earth Observation License [O] - 22 -](#_Toc135904744)

[10.5. Other Compliance required [O] - 22 -](#_Toc135904745)

[11. FEASIBILITY AND RISK ANALYSIS - 23 -](#_Toc135904746)

[11.1. Risk analysis [M] - 23 -](#_Toc135904748)

[11.2. Mitigation Plan [M] - 23 -](#_Toc135904749)

[12. COMMUNICATIONS AND DISSEMINATION PLAN [M] - 23 -](#_Toc135904750)

[12.1. Outreach to the General Public - 23 -](#_Toc135904752)

[12.2. Outreach to the Scientific and Technical Community - 23 -](#_Toc135904753)

[13. SUPPORTING DOCUMENTS [M] - 24 -](#_Toc135904754)

[14. ABBREVIATIONS AND REFERENCES [M] - 24 -](#_Toc135904755)

# BASIC INFORMATION [M]

## Project Title: [M]

|  |
| --- |
| TITLE OF THE PROJECT HERE |

## Executive Summary: (no more than 150 words) [M]

|  |
| --- |
| EXECUTIVE SUMMARY HERE |

## Certificate [M]

By signing, I confirm that all statements in our application are true, correct, and complete. Once selected, our organizations(s) will comply with the Terms and Conditions stipulated in the Announcement of Opportunity:

**Approved by the Project Coordinator (PC):**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| Name of PC in print |  | Signature of PC |  | Place |  | Date (dd-mm-yyyy) |

**Approved by applying organization 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| (Signature of head of organization1) |  | Place |  | Date (dd-mm-yyyy) |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Full name and title of head of applying organization 1 in print) (Seal of organization 1)

**Approved by applying organization 2 (if applicable, and extend this section as needed for more organizations):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| (Signature of head of organization 2) |  | Place |  | Date (dd-mm-yyyy) |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Full name and title of head of applying organization 2 in print) (Seal of organization 2)

## Head of Applying Organisation Information [M]

([DESCRIPTION] Please note that all applying organisations must be eligible, as specified in Section 12 of the Announcement of Opportunity. If there are multiple organizations applying as a team, the organization listed first will be responsible for the team and will be the organization to enter into a separate agreement with JAXA if selected as the awardee of this opportunity. Repeat this section as necessary in case your team includes several organisations.)

|  |  |
| --- | --- |
| Name and Surname |  |
| Gender | 1 Male 1 Female 1 Other 1 Prefer not to say |
| Age |  |
| Telephone |  |
| E-mail |  |
| Nationality |  |
| Country of Residence |  |
| Legal Name of Organisation |  |
| Type of Organisation | 1 Government organisation 1 Research institution 1 University 1 Other public institution |
| Address of Organization |  |

**INFORMATION CONCERNING THE SATELLITE:**

|  |  |
| --- | --- |
| Country under which the satellite will be registered |  |
| Country where operations will be conducted from |  |
| Is it the first satellite of the country? (Yes/No) |  |

# TEAM COMPOSITION

## Description of Cooperation [O]

([DESCRIPTION] If it is a joint proposal from several entities, please describe the role and responsibilities of each one.)

|  |
| --- |
| YOUR TEXT HERE |

## Project Coordinator [M]

|  |  |
| --- | --- |
| Name and Surname |  |
| Gender | 1 Male 1 Female 1 Other 1 Prefer not to say |
| Age |  |
| Job title |  |
| Telephone |  |
| E-mail |  |
| Nationality |  |
| Country of Residence |  |
| Legal Name of Project Coordinator’s Organization |  |
| Full Address of Project Coordinator’s Organization (including country) |  |
| List of papers published by the project coordinator in peer reviewed journals related to the topic of the proposal (if none, please insert N/A) |  |
| Experience (if none, please insert N/A) |  |
| Has the Project Coordinator been part of an awardee team of other opportunities under Access to Space for All? | 1 Yes 1 No  If yes, please explain: |

Mini CV (Maximum ONE PAGE):

|  |
| --- |
| YOUR TEXT HERE |

## Team Member [M]

([DESCRIPTION] Please note that all team members must belong to applying organizations that are eligible, as specified in Section 12 of the Announcement of Opportunity. Repeat this section as necessary to cover all the team members.)

|  |  |
| --- | --- |
| Name and Surname |  |
| Gender | 1 Male 1 Female 1 Other 1 Prefer not to say |
| Age |  |
| Nationality |  |
| Telephone |  |
| E-mail |  |
| Country of Residence |  |
| Legal Name of Team Member’s Organization (if different from Project Coordinator’s Organization) |  |
| Full Address of Team Member’s Organization (including country) (if different from Project Coordinator’s Organization) |  |
| List of papers published by the team member in peer reviewed journals related to the topic of the proposal (if none, please insert N/A) |  |
| Experience (if none, please insert N/A) |  |
| Has the Team Member been part of an awardee team of other opportunities under Access to Space for All? | 1 Yes 1 No  If yes, please explain: |

Mini CV (Maximum ONE PAGE):

|  |
| --- |
| YOUR TEXT HERE |

## External Support [O]

([DESCRIPTION] If you have support during the project from external organizations or individuals, please list them here.)

|  |
| --- |
| YOUR TEXT HERE |

# PROPOSAL TECHNICAL ABSTRACT [M]

([DESCRIPTION] Please insert a brief description of the proposed CubeSat, starting with the objectives and aim of the mission, including the scientific or technical value, design of the CubeSat, ground segment and user segment if applicable. The abstract should concisely describe the above in a **maximum of 300 words.**)

|  |
| --- |
| YOUR TEXT HERE |

# MISSION OBJECTIVES AND REQUIREMENTS

## Mission Statement: Contribution to Capacity-Building and Objectives [M]

([DESCRIPTION] Please include a mission statement (one or two sentences maximum) and how the development and deployment of CubeSat could contribute to capacity-building in your country. Please use SMART criteria (Specific, Measurable, Achievable, Realistic, Time-bounded) to define what you want to achieve through the project. Details on how to realize that contribution are to be included in the communications plan and dissemination plan ([Section 12](#_COMMUNICATIONS_AND_DISSEMINATION)).)

|  |
| --- |
| YOUR TEXT HERE |

## Foreseen Outcomes and Deliverables [M]

([DESCRIPTION] Please insert a description of the specific outcomes of the CubeSat mission and how the outcomes and its related activities contribute to one or several [Sustainable Development Goals (SDGs)](https://sdgs.un.org/es/goals). Note that KiboCUBE contributes to SDG 4 “Quality Education; SDG 8 “Decent Work and Economic Growth” and SDG 9 “Industry, Innovation and Infrastructure”. Please also explain which deliverables will be produced out of the CubeSat mission.)

|  |
| --- |
| YOUR TEXT HERE |

## Novelty and Uniqueness [M]

([DESCRIPTION] Describe why the proposed CubeSat is new and unique, including how it differs from similar CubeSats. In the case that this is not the first satellite that the applying institutions have developed, please indicate the difference with the previous missions.)

|  |
| --- |
| YOUR TEXT HERE |

## Technical Heritage [M]

([DESCRIPTION] Include any previously related work you have performed and any relevant scientific/engineering background supporting your experiment.)

|  |
| --- |
| YOUR TEXT HERE |

## Requirements

### Mission Requirements [M]

([DESCRIPTION] Please insert a list of the primary and secondary requirements needed to accomplish the mission objectives. Mission requirements shall be numbered as PrimMis-XXX and SecMis-XXX respectively (e.g. PrimMis-001, PrimMis-002…; SecMis-001, SecMis-002....). The [Space Debris Mitigation Guidelines](https://www.unoosa.org/pdf/publications/st_space_49E.pdf) shall be part of the mission requirements and flow down to the necessary technical requirements.)

|  |
| --- |
| YOUR TEXT HERE |

### CubeSat Design Requirements [M]

([DESCRIPTION] Please describe the design requirement of the CubeSat. Note that the requirements have to be verifiable and compatible with what is stated in the [JEM Payload Accommodation Handbook -Vol.8- Small Satellite Deployment Interface Control Document (JX-ESPC-101133-E)](https://humans-in-space.jaxa.jp/kibouser/library/item/jx-espc_8e_en.pdf). Requirements shall be numbered as Des-XX (e.g. Des-001, Des-002…).)

|  |
| --- |
| YOUR TEXT HERE |

### Ground Segment Design Requirements [O]

([DESCRIPTION] Please list your design requirements (for example tracking related, link budget related etc.) for the ground segment. Requirements shall be numbered as GSeg-XX (e.g. GSeg -001, GSeg-002…).)

|  |
| --- |
| YOUR TEXT HERE |

### User Segment Design Requirements [O]

([DESCRIPTION] Please list your design requirements (for example maximum size, weight, and power etc.) for the user segment. Requirements shall be numbered as USeg-XX (e.g. USeg-001, USeg -002…).)

|  |
| --- |
| YOUR TEXT HERE |

### Operation Requirements [M]

([DESCRIPTION] Please list your operation requirements (for example tracking related, expected actions during operations, concept of operations etc.). Requirements shall be numbered as Ope-XX (e.g. Ope-001, Ope-002…).)

|  |
| --- |
| YOUR TEXT HERE |

# SYSTEM SPECIFICATIONS AND DETAILED DESCRIPTION

([DESCRIPTION] For the detailed interface requirements related to the CubeSat design, please refer to the [JEM Payload Accommodation Handbook -Vol.8- Small Satellite Deployment Interface Control Document (JX-ESPC-101133-E)](https://humans-in-space.jaxa.jp/kibouser/library/item/jx-espc_8e_en.pdf). For the deployable structure shown in Section 4.2.2.2 (3) of the above handbook, the two-fault tolerant design described in Option 2① is required.

## CubeSat Overall Setup

### Main Specifications [M]

([DESCRIPTION] You can use graphs and tables for some items such as **Table 5.1** provided **as an example.**)

**Table 5.1.** CubeSat main specifications

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Values** | **Units** |
| Mass | [1U: less than 1.33] | kg |
| Dimensions | [1U: 100×100×113.5] | mm |
| Dimensions (deployed) |  | cm |
| Ballistic coefficient |  | kg/m2 |
| Expected Center of Gravity position |  | mm |

|  |
| --- |
| YOUR TEXT HERE |



### 3D View [M]

([DESCRIPTION]: Please provide the front-view, side-view, bird’s view, and deployed configuration.)

|  |
| --- |
| YOUR TEXT HERE |

### External Dimensions [M]

([DESCRIPTION]: Please provide the size of any protruding objects, if any.)

|  |
| --- |
| YOUR TEXT HERE |

## System Block Diagram and List of Components [M]

### System Block Diagram [M]

([DESCRIPTION]: Please include information on all subsystems and how they are related.)

|  |
| --- |
| YOUR TEXT HERE |

### List of Components [M]

([DESCRIPTION]: Please provide a list of components, up to the lowest level available. For custom-made components, please provide the name, 3D view (as Section 5.1.2), and describe the main features of the component (mass, location of center of gravity, and functionality). Include whether the item is going to be made in-house or purchased, please include the vendor’s name if purchased. A Product Breakdown Structure will be highly appreciated.) If the component will be made in-house, please provide the Technology Readiness Level.

|  |
| --- |
| YOUR TEXT HERE |

### Subsystems Design [M]

#### Structural and Mechanical Subsystems [M]

([DESCRIPTION]: Please provide the design for the primary structure, mechanisms such as the deployment of solar panels and antenna, equipment layout plans, separation mechanism, and materials for the primary structure. Please provide as much detail as possible.)

|  |
| --- |
| YOUR TEXT HERE |

#### Electrical Power Subsystem (EPS) [M]

([DESCRIPTION]: Please provide a list of components, scheme of the electronics, control system and description of the power subsystem. Please provide as much detail as possible (e.g. how the different elements of the EPS are connected, expected depth of discharge (DoD) for the battery etc.).)

|  |
| --- |
| YOUR TEXT HERE |

#### Thermal Subsystems [M]

([DESCRIPTION]: Please provide a list of components and type control system (passive/active) with a description of the subsystem. Please provide as much detail as possible.)

|  |
| --- |
| YOUR TEXT HERE |

#### Communications Subsystems [M]

([DESCRIPTION]: Please provide a list of components and a description of the communications system for telemetry, tracking, and telecommand between the CubeSat and the ground. If your mission includes more communication links, please describe them. Please provide as much detail as possible such as the data compression method, multiplexing scheme, and description of the subsystem etc.)

|  |
| --- |
| YOUR TEXT HERE |

#### Command and Data Handling (C&DH) [M]

([DESCRIPTION]: Please provide a list of components, and if applicable, data compression method, data recorder, multiplexing scheme, and description of the subsystem etc. Please provide as much detail as possible.)

|  |
| --- |
| YOUR TEXT HERE |

#### Attitude Determination and Orbit Control System (AOCS) [M]

([DESCRIPTION]: Please provide a list of components, redundancy, schematics, and description of the AOCS. Please provide as much detail as possible.)

|  |
| --- |
| YOUR TEXT HERE |

#### Propulsion or Deorbiting Subsystems [O]

([DESCRIPTION]: If this subsystem is different from the Attitude and Orbit Control, please provide a list of components and deorbiting mechanisms to be used, including redundancy if any. Please provide as much detail as possible.)

|  |
| --- |
| YOUR TEXT HERE |

#### Payload [M]

([DESCRIPTION] Please insert a description of the payload and list of its components. Please provide as much detail as possible.)

|  |
| --- |
| YOUR TEXT HERE |

#### Additional Technical Features of the CubeSat [O]

([DESCRIPTION] Please insert a description of any unique equipment used in the CubeSat and the specifications of unique equipment).

|  |
| --- |
| YOUR TEXT HERE |

### Description of Internal Interfaces [M]

#### Mechanical Interface [M]

([DESCRIPTION]: Please provide information on the mechanical interface between subsystems. Provide as much detail as possible (e.g. how the different components will be arranged inside the structure etc.).)

|  |
| --- |
| YOUR TEXT HERE |

#### Electrical Interface [M]

([DESCRIPTION]: Please provide information on the electrical interface between subsystems. Provide as much detail as possible (e.g. how the EPS is interfacing with other subsystems etc.).)

|  |
| --- |
| YOUR TEXT HERE |

#### Thermal Interface [M]

([DESCRIPTION]: Please provide information on the thermal interface between subsystems. Provide as much detail as possible (e.g. how the components are kept inside their temperature operational range and which are the elements part of the interface etc.).)

|  |
| --- |
| YOUR TEXT HERE |

#### Communications Interface [M]

([DESCRIPTION]: Please provide information on the communications interface between subsystems. Provide as much detail as possible (e.g. which are the signals sent and received from the transponder, how are they processed, which frequencies are used for communications etc.).)

|  |
| --- |
| YOUR TEXT HERE |

## Concept of Operations [M]

([DESCRIPTION] Please insert a description of the planned operations for the CubeSat (e.g. operational constraints: operations only during illuminated, when passing over certain regions of the Earth, type of operations: autonomous operations, controlled operations etc.). Please include any activation/deactivation procedures and disposal type. Consider breaking it down into several sections.)

|  |
| --- |
| YOUR TEXT HERE |

## Communication Links [M]

([DESCRIPTION] Please insert a description of the communication link budget(s) (frequencies and data rate) used by the CubeSat and how they are used. Please refer to elements of [Section 5.2.3.4](#_Communications_Subsystems_[M]) of the present document if needed.)

|  |
| --- |
| YOUR TEXT HERE |

## Ground Segment [M]

([DESCRIPTION]: Please provide a list of ground equipment including details of the ground station set-up.)

|  |
| --- |
| YOUR TEXT HERE |

## User Segment [O]

([DESCRIPTION]: Please provide a list of user segment equipment if applicable.)

|  |
| --- |
| YOUR TEXT HERE |

## Safety [M]

([DESCRIPTION] Please refer to [JEM Payload Accommodation Handbook -Vol.8- Small Satellite Deployment Interface Control Document (JX-ESPC-101133-E)](https://humans-in-space.jaxa.jp/kibouser/library/item/jx-espc_8e_en.pdf) to include any relevant information regarding the safety considerations for your CubeSat. In case of any safety hazard, please describe the control mechanisms.)

|  |
| --- |
| YOUR TEXT HERE |

# ASSEMBLY, INTEGRATION, AND TESTING



## Verification and Validation Planning [M]

### Verification Plan for Design Requirements [M]

([DESCRIPTION] Please explain how you will test the system against each of the system requirements and what facilities you would need for the tests.)

|  |
| --- |
| YOUR TEXT HERE |

### Verification Plan for Operation Requirements [M]

([DESCRIPTION] Please explain how you will test the operations against the requirements.)

|  |
| --- |
| YOUR TEXT HERE |

### Validation Plan for Mission Requirements [M]

([DESCRIPTION] Please explain how you will validate each of the mission requirements.)

|  |
| --- |
| YOUR TEXT HERE |



## Facilities

### Description of the assembly facilities [M]

([DESCRIPTION] Please describe the facilities that can be accessed for the assembly of the CubeSat. In case the facilities do not belong to the institution submitting the application, please also include a letter from other institution(s) authorizing the use of their facilities.)

|  |
| --- |
| YOUR TEXT HERE |

### Description of the testing facilities [M]

([DESCRIPTION] Please describe the facilities that can be accessed for the testing of the CubeSat. In case the facilities do not belong to the institution submitting the application, please also include a letter from other institution(s) authorizing the use of their facilities.)

|  |
| --- |
| YOUR TEXT HERE |

### Description of the facilities that are missing [M]

([DESCRIPTION] Please describe the facilities that are missing for the assembly and testing of the CubeSat.)

|  |
| --- |
| YOUR TEXT HERE |

# PLANNING



## Work Breakdown Structure [M]

([DESCRIPTION] Please include the Work Breakdown Structure for the design, development, testing, operations, decommissioning of the satellite and all other activities required until the experiment has been completed, including the outreach activities. In case of partnerships or external support, please indicate the share of the work among the partners, the external support, and team members for the different work packages.)

|  |
| --- |
| YOUR TEXT HERE |

## Design and Development Schedule [M]

([DESCRIPTION] Please provide a schedule of how you will design, develop, and test the system of your CubeSat, including milestones and pass/fail criteria for each one. Please include two safety reviews allocating one month to each of them, the first one after the Critical Design Review and the second one before the Handover. The schedule should include the space segment and ground segment plus the user segment if applicable. The final milestone of the development schedule should be the delivery to JAXA. A Gantt chart and a description shall be included. Please provide the critical path.)

|  |
| --- |
| YOUR TEXT HERE |

## Operations Schedule [M]

([DESCRIPTION] Although at this stage it might be difficult to provide a complete schedule for the operations, please provide as much detail about the schedule as possible (e.g. initial system checkout phase, payload activation phase, steady operation phase or end of mission etc.). A Gantt chart and its description shall be included.)

|  |
| --- |
| YOUR TEXT HERE |



## End of Life and Deorbiting schedule [M]

([DESCRIPTION] Although at this stage it might be difficult to provide a complete schedule for disposal, please provide as much detail about the schedule as possible (e.g. campaigns, phases etc.). Please include the schedule of when the [Space Debris Mitigation Guidelines](https://www.unoosa.org/pdf/publications/st_space_49E.pdf) and [Guidelines for the Long Term Sustainability of Outer Space Activities](https://www.unoosa.org/res/oosadoc/data/documents/2021/stspace/stspace79_0_html/st_space79E.pdf) will be applied and effective. A Gantt chart and its description shall be included.)

|  |
| --- |
| YOUR TEXT HERE |

# BUDGET



## Budget Plan[M]

([DESCRIPTION] Please provide information on the cost, including the price of the parts, personnel costs, facilities costs, operation costs, travel expenses, shipment of the CubeSat, dissemination activities etc.)

|  |
| --- |
| YOUR TEXT HERE |

## Budget Source and Expected Budget Source [M]

([DESCRIPTION] Please provide information on the budget you have obtained and letters of commitment specifying the funding source, and information on what are the envisaged funding sources of any remaining non-secured budget. If the budget cannot be secured in the first round of selection, please explain the prospect of securing the budget.)

|  |
| --- |
| YOUR TEXT HERE |

# TRANSPORTATION TO JAPAN [M]

([DESCRIPTION] Please provide information concerning the transportation of the CubeSat to Japan (usually Tsukuba Space Center) such as customs arrangements.)

|  |
| --- |
| YOUR TEXT HERE |

# LICENSING AND COMPLIANCE WITH INTERNATIONAL GUIDELINES AND REGULATIONS



## Frequency allocation [M]

([DESCRIPTION] Please provide the plan to obtain the license (timeline, entity(ies) involved etc.).)

|  |
| --- |
| YOUR TEXT HERE |

## Space Object Registration [M]

([DESCRIPTION]: Please provide information on the steps for the registration of your CubeSat in the [United Nations Register of Objects Launched into Outer Space](https://www.unoosa.org/oosa/en/spaceobjectregister/index.html).)

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| YOUR TEXT HERE |

## Compliance to the Space Debris Mitigation Guidelines and the applicable Guidelines for the Long-Term Sustainability of Outer Space Activities [M]

([DESCRIPTION] Please provide information on how compliance is ensured for the [Space Debris Mitigation Guidelines](https://www.unoosa.org/pdf/publications/st_space_49E.pdf) and [Guidelines for the Long Term Sustainability of Outer Space Activities](https://www.unoosa.org/res/oosadoc/data/documents/2021/stspace/stspace79_0_html/st_space79E.pdf).)

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## Earth Observation License [O]

([DESCRIPTION] Please provide information concerning the license to be requested and the plan to obtain the license (timeline, entity(ies) involved etc.).)

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## Other Compliance required [O]

([DESCRIPTION] Please provide information concerning any other license to be requested for the operations and the plan to obtain the license(s) (timeline, entity(ies) involved, or how compliance is ensured etc.).)

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# FEASIBILITY AND RISK ANALYSIS



## Risk analysis [M]

([DESCRIPTION] Please use a risk matrix to describe the risks that you might face. These should include technical risks (e.g. mechanical, thermal etc.), planning risks and budget risks. Please assess the likelihood of occurrence and their impact (1 (not likely) 3 (very likely) and their impact (1 (minor impact) to 3 (catastrophic).)

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## Mitigation Plan [M]

([DESCRIPTION] Please explain how you would reduce the likelihood of occurrence or the impact of each of the risks.)

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| YOUR TEXT HERE |

# COMMUNICATIONS AND DISSEMINATION PLAN [M]



## Outreach to the General Public

([DESCRIPTION] Provide the plan (e.g. scope, schedule, resources, means) that will be used to promote the opportunity and the results, as well as communication towards the general public. Specific activities shall be organised within the applicant country(ies).)

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## Outreach to the Scientific and Technical Community

([DESCRIPTION] Provide the plan (e.g. scope, schedule, resources, means) that will be used to promote the opportunity and the results, as well as communication towards the scientific and technical community. Specific activities shall be organised within the applicant country(ies).)

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# SUPPORTING DOCUMENTS [M]

([DESCRIPTION] Please list any document in support of your application. Please attach documents as separate PDF files.)

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| YOUR TEXT HERE |

# ABBREVIATIONS AND REFERENCES [M]

([DESCRIPTION] Please list any abbreviations used across the document and references of documentation you have used to create your application.)

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