[Provisional translation]

Moonshot Research and Development

Moonshot Goal 10

Project Manager

Application Guidelines

Application Period

Friday, March 29,2024 – Noon, Tuesday, June 4, 2024

国立研究開発法人
科学技術振興機構
Japan Science and Technology Agency

Overview of the call for application

(1) Schedule of the call for application and selection

Call for application starts from	Friday, March 29, 2024
Applications accepted until (Final time and date of acceptance from e-Rad.)	**Noon, Tuesday, June 4, 2024** **<No delay accepted>**
(First-round selection) Period of document-based review	early June – late June
(First-round selection) Period of interview-based review	early July – late July
(Second-round selection) Period of document-based review	mid August – mid September
(Second-round selection) Period of interview-based review	late September – mid October
Notification and announcement of selection results (Notification sent to all proponents)	Mid-October or later

※ Use e-Rad to apply for this call (see Chapter 6, "How to use the cross-ministerial R&D management system (e-Rad) for your application".

※ The underscore indicates that the schedules are fixed. All other schedules remain unfixed and are subject to change.

※ Notifications will be sent via e-mail to all proponents who are invited to the first-round interview selection, second-round document review, and second-round interview selection.

(No postal mail will be sent. Notifications will be sent to the e-mail addresses registered on

e-Rad. Please ensure that you have set your e-mail address to receive our notifications.)

※The timing of e-mail communications to candidates for the first-round interview selection, second-round document review, and second-round interview selection, and the schedule for the interview selection meetings will be announced on the official public call for applications webpage https://www.jst.go.jp/moonshot/koubo/202403/ms10.html as soon as they are determined.

※Proposals not completed via e-Rad by the application deadline will not be considered for review under any circumstances.

(2) The moonshot goals for which Project Managers (PMs) are called

Below are the Moonshot Goal for the prospective Project Managers (PMs) and its Program Director (PD) will attempt to achieve. Make sure to check the R&D concept to achieve the goal and the PD Guideline for PM Application in the appendix.

Moonshot Goal 10 (PD: YOSHIDA Zensho)	Realization of a dynamic society in harmony with the global environment and free from resource constraints, through diverse applications of fusion energy, by 2050.

Please note that the “proponents” referred to in these application guidelines and application forms are people who will carry out proposals as PMs, “leader’s institutions” are institutions that employ PMs and support PM activities, and “R&D institutions” are institutions with which the people carrying out R&D under the direction of PMs (Performers) are affiliated. In addition, “leader’s institutions” and “R&D institutions” are also referred to as “R&D institutions, etc.”

(3) How You Apply for the Call

Download from the website the materials you need for making application including the forms for proposals: https://www.jst.go.jp/moonshot/koubo/202403/index.html

Use e-Rad (https://www.e-rad.go.jp/) to apply for this call (see Chapter 6).

When the deadline is close, a large number of accesses may be made to e-Rad, which may overload the system, make you need a long time to view pages, make you unable to upload files, cause errors to make you go back to the top page etc., cause some other troubles, and make you unable to finish your application by the deadline. Allow yourself sufficient extra time to finish your application. **If you have not finished your application steps from e-Rad before the deadline, your application, regardless of the reason, will not be accepted as a subject of our examination. We will not accept any replacement or substitute of your written proposals after the deadline has come.** If a large-scale system trouble should occur to e-Rad during the period of application and thus it should be difficult to make application from e-Rad, then we may post our corrective actions on the website of this call. Your understanding is appreciated.

Write the same organizations, posts, and other information on e-Rad and in the description on your written proposals (if any contradiction is found, the description on your written proposals are taken as an official one). Note that we cannot accept your proposal if your written proposal uploaded from e-Rad contains some difficulty that makes our examination difficult. "Some difficulty that makes our examination difficult" here includes any omission on the form of your written proposals, any erroneous conversion of characters that makes it difficult to read and examine the document, any important omission in any item provided on your written proposal, and the like.

For the precautions and the details of the application method, see the website of this call and Chapter 5, "Instructions for proponents," and Chapter 6, "How to use the crossministerial R&D management system (e-Rad) for your application."

The website of this call: https://www.jst.go.jp/moonshot/koubo/202403/index.html

(4) Essential points for application

Below are the especially important points for application. Please make sure to confirm the related contents of the guideline.

●Completing the course on research and ethics education【See also 4.1】 The proponent needs to complete a program regarding research and ethics education at the institution to which they belong. Alternatively, an education program provided by JST must be completed by the application deadline. Note that if we cannot confirm their

finishing the course, we will regard their applications as not having satisfied the requirements.

●Restrictions on multiple applications【See also 4.2】

(1) No one proponent is allowed to make applications of two or more R&D projects for the same Moonshot (MS) Goal .

(2) Anyone who is already a PM for MS Goals (1-9) for which R&D projects have already begun are not allowed to apply. Applications that do not meet this requirement will be considered incomplete and will not be accepted.

(3) A single proponent may not propose R&D projects for multiple Moonshot Goals simultaneously.

(4) If, as a result of this call for proposals, a person becomes involved in two or more research and development projects as a PM or Performer, adjustments such as reducing the R&D budget or not allowing participation in some of the tasks of the projects in which the researcher is involved may be made based on the content and scale of the R&D, at the PD's discretion.

●Determination of leader's institution after PM adoption【See also 2.5】

You can apply for this call even if you currently belong to an organization outside Japan and your leader's institution* is not determined at the time of application. If, however, you are not able to designate your leader's institution within one month** of being selected, then the adoption could be canceled.

*The leader's institution must be the PM's employer (a university, college, public organization, private enterprise, or the like) and be a Japanese corporation that is based in Japan. A PM must determine the leader's institution as the base of his or her own activities in Japan.

**If the PM does not choose the present institution as the leader's institution, the deadline will be three months after the adoption.

[If the English version of the information of call for application does not conform to the Japanese version, the Japanese version shall prevail.]

Table of Contents

Appendix

The following materials are posted on the webpage of the call:

https://www.jst.go.jp/moonshot/en/application/202403/index.html

○ Appendix 1 R&D Concepts

○ Appendix 2 PD's supplement

○ Attached Document 1: The basic approach for the Moonshot Research and Development Program (Council for Science, Technology and Innovation (CSTI), Headquarters for Healthcare Policy)

○ Attached Document 2: Guidelines for Operation and Evaluation of the Moonshot R&D Program (Cabinet Office, Ministry of Education, Culture, Sports, Science and Technology, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry)

Chapter 0 To those who are applying for or participating in the project

0.1 Contribution to the achievement of Sustainable Development Goals (SDGs)

JST to contribute to the achievement of Sustainable Development Goals (SDGs)!

At the “United Nations Sustainable Development Summit” held in September 2015, “Transforming our world: the 2030 Agenda for Sustainable Development” was unanimously adopted; the document was an achievement that positioned “sustainable development goals (SDGs)” at its core, as a further comprehensive and new action target common to the world for human beings, the Earth, and its overall welfare. The seventeen goals included in the SDGs not only indicate various problems in relation to sustainability that are confronting humankind but also demand that these problems be solved comprehensively and in an integrated manner. It is expected that scientific and technological innovations will resolve such social problems and that scientific grounds are provided to contribute to the formulation of appropriate policies. We can say that these roles conform to the concept “the science in the society and the science for the society,” a new objective of science that was declared in the “World Declaration on Science and the Use of Scientific Knowledge” (Budapest Declaration*) which was adopted at the International Council for Science in 1999. As a core organization aimed at promoting the science and technology policies in our country, JST promotes advanced fundamental researches and manages researches and developments that resolve problems corresponding to societal needs. SDGs are a worldwide objective that can itemize all JST’s missions. Through JST programs, we want to collaborate with various industries, academia, governmental bodies, and private enterprises, as well as cooperate with researchers to realize a sustainable society.

Japan Science and Technology Agency, President

*The Budapest Declaration has declared that “science for knowledge,” “science for peace,” “science for development,” and “science in society and science for society” are the responsibilities, challenges, and obligations of science in the 21st century.

0.2 Promoting diversity

JST to promote diversity!

"Diversity" is desired as a foundation that results in scientific and technological innovation. Regardless of age, gender, or nationality, human resources with various areas of expertise, values, and the like can exchange ideas and cooperate to creatively work together to develop a new world. In all fields of science and technology, JST promotes diversity to address the problems that our future society will face and to contribute to the enhancement of our country's competitiveness and mental resources. In the Sustainable Development Goals (SDGs) advocated by the United Nations, gender equality and other targets deeply linked with diversity are also stated; we will contribute to the resolution of problems in our own country that are also common to other parts of the world.

Recently, the acts of women have been seen as comprising the core of the growth strategy and as "the greatest potential force of Japan." Also, in researches and other developments, women's participation is important; among various human resources intended to support innovation in the field of science and technology, female researchers are essential. JST expects proactive applications from female researchers. JST has been listening to the researchers who use our "Maternity, Child Care, and Nursing Support System," which has

been ongoing; and we have also been continuously endeavoring to improve the system by, for example, providing an environment in which researchers can return to their fields.

In our call for new research problems and our reviews, we will also consider applications from the perspective of diversity.

We will be grateful if researchers demonstrate their positive attitudes by applying to our program.

Japan Science and Technology Agency, President

We are waiting for your application

JST understands that diversification entails an understanding of people with ideas different from our own and combining them to create new values; based on this idea, JST has been promoting diversity. This will lead to not only solutions for the problems of our own country but also to those common throughout the world; in cooperation with organizations overseas, we promote diversity and in so doing, will cope with social problems on a global scale, including SDGs.

JST's diversity covers women, as well as young researchers and researchers from other countries. To ensure that all individuals can sufficiently exercise and play important roles, we have been continuously giving support to researchers during their maternity periods and those with children or in circumstances in which they are caring for the elderly. Further, we have also been making an effort to ensure that our committees will have well-balanced personnel assignments. Aiming for an environment in which a wide range of people cooperate and compete with one another, we welcome applications from female researchers, which we have not often received; thus, we are endeavoring to create new value.

We are eagerly anticipating proactive applications from you all.

Director of Diversity and Inclusiveness
Director of the Office for Diversity and Inclusiveness
Japan Science and Technology Agency (JST)

0.3 Aiming for fair research activities

Aiming for fair research activities

Unethical acts in researches or other dishonest research activities, which have been recurring in recent years, have destabilized the relationship of trust between science and

society and have caused situations that should be cause for concern, such as those that obstruct the wholesome development of science and technology. To prevent injustices in researches, the autonomous self-cleansing function in the scientific community is needed. All researchers must strictly control themselves and based on a supreme sense of ethics, must cope with the creation of new knowledge and inventions useful for society such that they meet societal expectations.

As an organization that distributes research funds, JST takes injustice in researches seriously; we cooperate with the relevant organizations and make a thorough effort to take measures that prevent injustices from occurring, which will ultimately enable us to recover the trust of society at large.

1. JST thinks that ethics and fairness in research activities are extremely important for our country, which aims to be a nation based on science and technology.
2. JST supports research activities that are honest and accountable.
3. JST has no tolerance for injustice in researches.
4. In cooperation with the relevant organizations, JST copes with the promotion of education related to research ethics to prevent injustices and reorganize the system by which research funds are distributed.

We must grow a wholesome scientific community and culture based on societal trust to embody a bright future for society that is populated by dreams and hopes. We would like to ask for further understanding and cooperation from research communities and the relevant organizations.

Japan Science and Technology Agency, President

Chapter 1 An overview of the Moonshot Research and Development

1.1 Management principle and organization

1.1.1 Principle of management

Japan Science and Technology Agency (JST) began this “Moonshot Research and Development (Moonshot R&D)” based on challenging R&D concepts in which the Ministry of Education, Culture, Sports, Science and Technology(hereinafter referred to as “MEXT”) defines has defined the fields and areas where challenging research and development should be promoted to achieve Goals that attract the public (Moonshot Goal (hereinafter referred to as “MS Goals”)) regarding societal problems that are expected to have a great impact if they are realized, regardless of the difficulty in doing so, from the perspective of our future society. To begin the Moonshot Research and Development, we call for the project managers (referred to as “PM” from here) who will propose and manage the research and development projects for the achievement of the MS Goals and the realization of R&D concepts. This project falls under the category of a competitive research funding system.

1.1.2 Overall management organization

The general management of Moonshot R&D will be supervised by the Governing Committee organized by JST. Further, the Program Directors (PDs) appointed by JST for the achievement of the MS Goals and realization of the R&D concepts will take charge of the management. Under each PD, the PMs selected for Moonshot R&D are required to promote each R&D project. (See Fig. 1.)

1.1.3 The roles of the PMs

(1) PM

The PMs collate the relevant knowledge from different researchers—top runner, young, and senior—in and outside Japan and formulate the scenario to achieve the MS Goals through backcasting—achieving the Goals, designing challenging R&D projects based on a bold idea that is not an extension of some conventional technology, planning and

ensuring management of the organization for R&D, building an organization to provide support to the PMs, and ensuring management of the various assignments to fulfill the above-mentioned aims (hereafter “PM activities”); thus, they take responsibility for R&D projects in general. The PMs, in principle, need to devote themselves to the PM activities.

(2) Performer

The Performers must manage the assignments for the researches and developments entailed in the R&D projects, as instructed by the PMs, to achieve the MS Goals and embody the R&D concepts.

(3) Leader’s institution

These are the institutions that employ the PMs, and mainly manage the operations to support the PMs’ activities so they can be performed effectively and efficiently.

1.1.4 The roles of the committees organized within JST

(1) Governing Committee

The Governing Committee comprises experts from outside JST, and decides the major principles and methods and discusses other important issues for the operation of the projects, selects PMs, plans the execution, continuation, acceleration, and/or deceleration of R&D projects, and makes decisions on alteration and/or termination. JST makes decisions on what are discussed by the Governing Committee.

(2) PD

The PDs are appointed by JST for the achievement of the MS Goals and for the realization of the R&D concept and select PMs, strategically construct the portfolios (the management plans to sum up the composition (combination) of the R&D projects, the distribution of the resources, and other principles), decide the execution of the R&D projects, make evaluation, and give instruction for the promotion of the R&D projects to the PMs on the basis of the daily progress management of the R&D projects; thus, they take management of various assignments for the achievement of the MS Goals and the realization of the R&D concept. In cooperation with the sub-PDs and the advisors etc., who are external experts, the PD handles these kinds of work.

Anyone involved in evaluations for these reviews is obligated not to leak any

information obtained through this series of reviews to any third party, both while they are working to evaluate applications and after their work is completed.

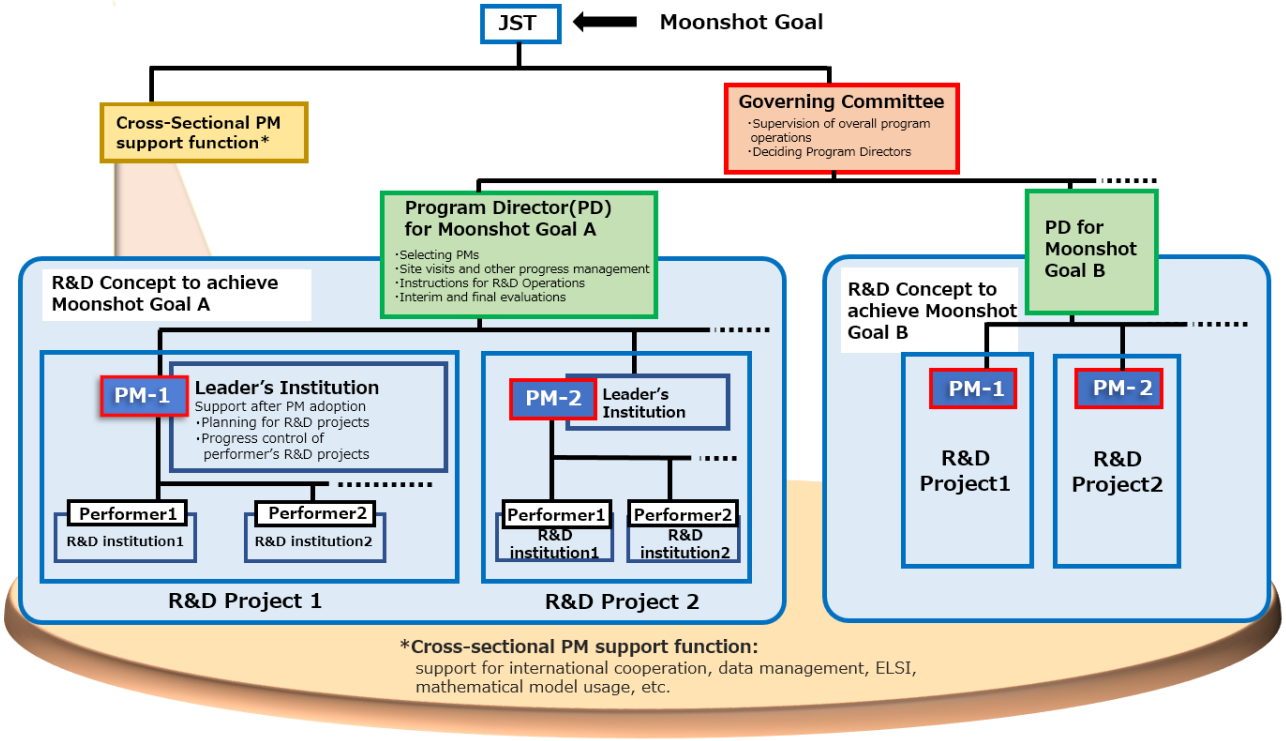


Fig.1. The organization for the overall operation of the Moonshot Research and Development

1.2 The workflow of project operations

1.2.1 Call for and selection of PMs

JST, based on the MS Goals defined by the Council for Science, Technology and Innovation (referred to as "CSTI" from here) and on the R&D concept defined by the MEXT, calls for, and selects, in principle, two or more PMs, who promote the R&D projects.

*As for the details of the call and selection, see Chapter 2, "The call and selection of Project Managers (PMs) "

1.2.2 PMs to refine and execute R&D projects

(1) Refining R&D projects

The PMs adopted for Moonshot R&D, with the direction by the PD in cooperation with

the sub-PD and the advisors, refine the R&D projects. During the period of refining, they further develop (review and embody) the R&D projects they proposed at the time of application. The refining includes reviewing the scenario to attain the MS Goals, the detailed plans for the R&D project, the organization to give support to the PM activities by the representative of the organization, and the like. For Goal 10, adjustments such as changes, additions, or deletions to some of the challenges will be actively made based on the content of the R&D, at the PD's discretion.

The PMs, whose refining (hereinafter referred to as “R&D project implementation plan”) is recognized as appropriate by the PD in cooperation with sub-PD and advisors, are allowed to execute the R&D project based on a determination of the refining appropriateness.

*For further details, please see section 3.1 ”PMs to refine R&D projects.”

(2) Starting R&D projects

To start an R&D project, top-level engineers, and young, senior, and other researchers are brought together for their vast knowledge to construct organizations for the same. The PMs use appropriate methods, such as designation and public invitations to select Performers and construct organizations focused on research and development. The composition of the R&D institutions is determined during the refining period; however, depending on the progress status, changes in external environments, Performers may be added and/or switched even during the period in which the R&D projects are executed. In achieving Goal 10, when a broader advancement in research challenges is expected, a system that consolidates knowledge from a wide range of fields necessary for solving these challenges will be required. Therefore, the addition of Performers from various research communities beyond ones specifically related to the goal must be actively pursued throughout the R&D project duration. Further, considering the aims of Moonshot R&D, they should proactively promote invitations to accomplished overseas researchers and international joint researches. To initiate the R&D projects, the leader’s institution and the institutions to which the PMs and Performers belong (hereinafter referred to as “R&D institutions”) must take a pledge regarding the regulations governing the implementation of the R&D projects in which they are participating and must also draw up a contract with JST for the entrustment

of the R&D projects.

*For further details, see section 3.5, “PMs to implement R&D projects.”

1.2.3 Evaluation of the PMs by the PDs

The PD, in cooperation with the sub-PD and the advisors, evaluates the PMs during the execution of the R&D projects. In either case, depending on the outcome of the evaluations, the R&D project maybe continued, accelerated, decelerated, altered, terminated, or handled in some other way.The evaluation of the PMs is performed based on the progress status and regarding themilestones that were formulated in the implementation plans for the R&D project, thestatus of the PMs’ project management, and so forth.

*For further details about the external evaluations and self-evaluations for R&D projects based on Attached Document 2 “Guidelines for Operation and Evaluation of the Moonshot R&D Program”, please see section 3.5 “PDs’ progress management and evaluation of the PMs.”

1.2.4 Other

The operation of Moonshot R&D also conforms to “Guidelines for Operation and Evaluation of the Moonshot R&D Program” (Cabinet Office; Ministry of Education, Culture, Sports, Science and Technology; Ministry of Agriculture, Forestry and Fisheries; Ministry of Economy, Trade and Industry; February 4, 2020, Revision: December 28, 2021) defined based on “The basic approach for the Moonshot Research and Development Program” defined by CSTI and the Headquarters for Healthcare Policy (December 20,2018, Revision: February 27, 2020).

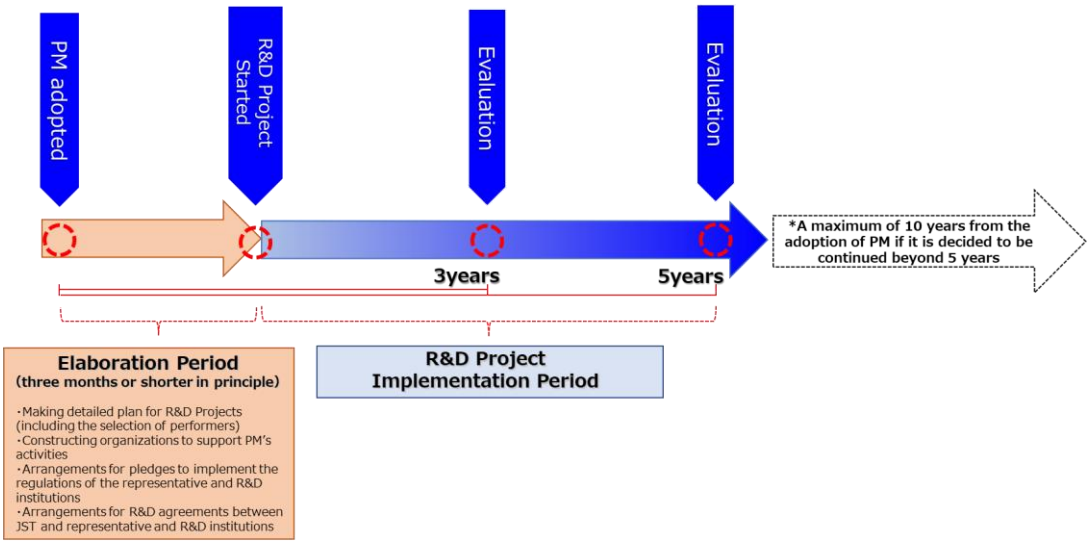


Fig.2. The workflow after the adoption

Chapter 2 The Call and selection of Project Managers (PMs)

2.1 Schedule of the call for application and selection

Call for application starts from	Friday, March 29,2024
First-round document submission Deadline for submission (Final time and date of acceptance from e-Rad.)	**Noon, Tuesday, June 4, 2024 <No delay accepted>**
First-round document review period	early June – late June
First-round interview review period	early July – late July
Second-round document review period	mid August – mid September
Second-round interview review period	late September – mid October

Notification and announcement of selection results (Notification sent to all proponents)	Mid-October or later

※ Use e-Rad to apply for this call (see Chapter 5, "How to use the cross-ministerial R&D management system (e-Rad) for your application".

※ The underscore indicates that the schedules are fixed. All other schedules remain unfixed

and are subject to change.

※ Notifications will be sent via email to those selected for the first-round interviews, second-round document reviews, and second-round interviews. Notifications will be sent via e-mail to all proponents who are invited to the interviews.

(No postal mail will be sent. Notifications will be sent to the e-mail addresses registered on e-Rad. Please ensure that you have set your e-mail address to receive our notifications.)

※ JST will notify proponents of the specific time and date of the interviews.

The timing of e-mail communications to candidates for the first-round interview selection, second-round document review, and second-round interview selection, and the schedule for the interview selection meetings will be announced on the official public call for applications webpage as soon as they are decided. The schedules for the interview-based review and the period in which proponents eligible for interviews are notified will be announced on the website as follows:

https://www.jst.go.jp/moonshot/koubo/202303/ms8.html

Proposals that have not been submitted through e-Rad by the call deadline will not be considered for any reason.

2.2 The periods to implement R&D projects

The duration of the R&D project is set to be 5 years from the point of PM selection, in principle. Based on the results of the evaluation in the third year, the research R&D project may be subject to change (acceleration, deceleration), or termination.

Evaluations will be conducted not only at the three-year mark from the point of PM selection but also, in principle, in the fifth year and whenever the PD deems necessary. In any of these cases, based on the evaluation results, the research project may be subject to change (acceleration, deceleration), or termination. If it is decided to continue the project beyond five years, the duration can be extended up to a maximum of ten years*. For more details, please refer to "3.5 Progress management and evaluation by PD of PMs."

2.3 Monetary amount for R&D projects

For the budget scale per PM of the R&D project at the time of proposal, please propose the most appropriate R&D expenses based on the content of the proposed project.

The R&D budget for a R&D project at the initial stage will be judged and determined by the PD in cooperation with the advisors at the time of the refining after the adoption.

2.4 The number of proposals to be adopted

The aim is to adopt seven PMs. This may change based on the judgement of the PD.

In addition, based on the concept in Goal 10, the image of the R&D system shall be based on a clear vision and scenario, with PMs publicly solicited according to innovative social implementation, and an R&D system that brings together the wisdom of diverse researchers from Japan and abroad. In addition, among innovative elemental technologies, PMs will be solicited separately for common elemental technologies that are necessary for social implementation, and the aim will be to improve the availability of fusion energy by promoting them in an integrated manner through approaches such as higher efficiency, higher functionality, lower cost, and higher intelligence.

2.5 Proponent requirements

2.5.1 Requirements that proponents as PM candidates are expected to have

Regarding the requirements for the proponents, understand the following two items in advance.

*The proposals are not accepted or adopted, in principle, if it is revealed that the proponent requirements were not satisfied.

*The requirements need to be maintained during the period of the execution of the R&D

projects. The PM is dismissed if the application requirements come to be not satisfied during the period of the implementation of the R&D project. Before filing an application, ensure that you understand the content stated in Chapter 4, "Instructions for proponents," as well as the below items, which should be considered when you apply for the project.

Proponents need to satisfy all of the application requirements (1) to (5) below.

（1） Applications must be filed by one person, not by a group.

（2） PMs are expected to dedicate their efforts exclusively to their responsibilities as PMs as much as possible.

Note: If the PD determines that it would be particularly effective for a PM to conduct part of the R&D of the project themselves to produce better results, they may be allowed to participate as Performers.

（3） All responsibilities of the R&D project must be undertaken for all periods of the R&D project's implementation.

*For further details, please see section 3.6 "The roles and responsibilities of the PMs, leader's institutions, and Performers".

（4） A program regarding research and ethics education has been completed at the institution to which he or she belongs. Alternatively, an education program provided by JST must be completed by the application deadline.

*For further details, please see section 4.1, "Completing the course on research and ethics education."

（5） A pledge must be made regarding the following four items. The proponent must:

・Understand and be willing to conform to the "Guidelines for Responding to Misconduct in Research Activities" (decision, Minister of Education, Culture, Sports, Science and Technology, August 26, 2014)

・Understand and be willing to conform to "Guidelines for the Management and Audit of Public Research Funds In Research Institutions (practice standards)" (revised on February 1, 2021)

・Not have committed any misconduct in research and development activities (forgery, falsification, and theft) or any unjustifiable use of trusted research

funds

・Not have committed any misconduct in research and development activities with respect to the past achievements of the researches and developments described in the applicable written proposal

*The pledges are available from the screen to fill in the information of proponents on the Cross-ministerial R&D Management System (e-Rad).

A PM must determine the leader's institution as the base of his or her own activities in Japan. The leader's institution must be the PM's employer (a university, college, public organization, private enterprise, or the like) and be a Japanese corporation that is based in Japan. For the specific requirements a leader's Institution must meet, please see section 3.5.3, "Requirements for leader's institutions.)

*You can apply for this call even if you currently belong to an organization outside in Japan and your leader's institution is not determined at the time of application.

*If, however, you are not able to designate your leader's institution within one month of being selected in principle, then the adoption could be canceled. If the PM does not choose the present institution as the leader's institution, the deadline will be three months after the adoption.

2.5.2 Requirements for the proposed R&D projects

Before making an application, the proponents must understand that items (1) to (3) below must be satisfied for the R&D project they propose. Please also see section 2.8 "Viewpoints in selection."

(1) Compatibility with the Moonshot R&D program

・ Scenarios leading to the achievement of MS Goals should be ambitious and based on more daring ideas, and if realized, should have a significant impact on industry and society and contribute to solving social issues.

(2) Scenarios leading to the achievement of MS Goals

・ The scenario to be addressed in the R&D project should be formulated from a broad perspective, including not only technological but also social perspectives, and the

issues to be overcome should be analyzed and identified accordingly.

- Provide scientifically supported methods and measures to solve the problems to be overcome.

(3) Plans for constructing a research and development organization

- The measures and plans for constructing an organization that further develops the ability to conduct R&D projects at the highest level, regardless of its location within or outside of Japan, not limited to a specific research community, and leveraging knowledge from a wide range of fields to solve problems.

2.5.3 Requirements for leader's institutions

As the base of PM activities, a leader's institution must endeavor to support the PM in devising effective and efficient activities and managing the business to support the PM's activities. A proponent, even if it is unclear whether the organization to which the proponent belongs will be his or her leader's institution, is allowed to make an application; however, he or she must determine a leader's institution by the close of the refining stage. The adoption will be canceled if a leader's institution is not determined within, in principle, one month* following the adoption of the project.

*If the PM does not choose the present institution as the leader's institution, the deadline will be three months after the adoption.

Before making an application, the proponents must fully understand that items (1) and (2) below must be satisfied by the leader's institution.

(1) To be an employer of the PM, which is a university, college, public organization, private enterprise, or the like, that is a Japanese corporation and has a base of activities in Japan, and to employ the PM by the end of the refining period

(2) To accept the items described in section 3.6.2, "The roles and responsibilities of leader's institutions" and to finalize a contract with JST

2.6 How to apply

2.6.1 Application type

Follow the instructions on filling in the form to create a written proposal. Download the

proposal form from the following website.

https://www.jst.go.jp/moonshot/en/application/202403/index.html

The list of documents that must be submitted is provided in section 2.6.2, "Documents to be submitted".

Before filing an application, understand the contents of Chapters 0, " To those who are applying for or participating in the project " and 4, "Instructions for proponents."

For the details of how to apply, see Chapter 5, "How to use the cross-ministerial R&D management system (e-Rad) for your application."

2.6.2 Documents to be submitted

The list of the documents that must be submitted is as follows. In addition, JST may ask a proponent to provide additional information in the course of selection. A proponent may be asked to submit a statement of accounting of a leader's institution if it is an enterprise.

[Form 1] An overview of the R&D project
[Form 2] The scenario to achieve the Moonshot Goal
[Form 3] Proposal for R&D project
[Form 4] Plans for promoting the R&D project and budget plans
[Form 5] Proponent management ability
[Form 6] Information on conflicts of interest
[Form 7] Application status, efforts, and acceptance of other research funds
[Appendix to Form] Performer candidate information sheet

2.7 Methods of selection

2.7.1 The steps to select PMs

The proposals received will be evaluated through a document-based review and an interview-based review, carried out by the PD in cooperation with the sub-PD and the advisors. Candidates who pass the first-round document review will proceed to the first-round interview review, where they will receive individual feedback on the content of their R&D and the setting of their R&D challenges. Feedback will be provided both orally during

the interview review and in writing at a later date. Those selected for the first-round interview review, second-round document review, and second-round interview review will be notified via email. During the review process, individuals may be asked questions about the content of their application. The results of the PD's selections will be discussed by the Governing Committee to determine the PMs. After this, JST will make a final decision on the PMs, based on the details of the Governing Committee's discussion.

*Please note that due to the current situation caused by the COVID-19 pandemic, parts of the selection process may be subject to change. Should this be the case, we will inform you promptly on the program website.
https://www.jst.go.jp/moonshot/en/application/202403/index.html

2.7.2 Management of participant conflicts of interest in selection processes

To achieve fair and transparent evaluation and research fund allocation, JST will manage the conflicts of interest as described below in accordance with JST's rules. If there are any concerns regarding conflicts of interest with individuals involved in the selection process, please specify these in detail on [Form 5].

(1) Managing conflicts of interest of those involved in selection

To ensure a fair and transparent evaluation, parties with interest of the proponent that are listed below will not participate in the selection processes regarding the applicable proponents.

a. A person who is a relative of the proponent
b. A person who belongs to the same department, major, or the like as the proponent at a university, college, or R&D organization of a national research and development corporation or the like or to the same enterprise as the proponent
c. A person who engages in a close joint R&D project with the proponent. This refers to, for instance conducting a joint R&D project, coauthoring a research paper, being members of an R&D project for the same purpose, or being joint researchers tasked with a problem from the proponent, or practically belonging to the same R&D group

as the proponent

d. A person who is closely associated with the proponent as a teacher or student, or they have a direct employer-employee relationship

e. A person who is in an academically competitive relationship with the proponent's R&D project or who belongs to an enterprise that is in a competitive relationship in the market

f. Any other person who is judged, by JST, to have shared interests with the proponent

(2) Managing conflicts of interest of proponent (PM-Performer relationship)

To avoid any doubts of third parties, we manage the following conflicts of interest between PMs and Performers by appropriately considering the necessity, rationality, and adequacy of the situation. Situations for consideration include:

a. The PM is also a Performer.

b. The Performer is a relative of the PM.

c. The Performer belongs to the same department, major, or the like as the PM at a university, college, or R&D organization of a national research and development corporation or the like or to the same enterprise as the PM.

d. The Performer engages closely in a joint R&D project with the PM. This refers to, for instance, conducting a joint project, coauthoring a research paper, being members of an R&D project for the same purpose, or being joint researchers tasked with a problem from the PM, or practically belonging to the same R&D group as the PM.

e. The Performer is closely associated with the PM as a teacher or student, or they have a direct employer-employee relationship.

f. The Performer is judged, by JST, to have shared interests with the PM.

In consideration to the aim of this program, which is to gather the wisdom of a variety of researchers such as the top researchers, young and senior researchers in and outside the country, the conflict of interests with PMs are not judged from a uniform standard to expel them from the projects without exception. Even if there are conflicts of interest

between a PM and a Performer, the Performer can be allowed to participate in the project considering necessity, rationality, and adequacy.

Proponents may be questioned at interview regarding a Performer candidate who has a conflict of interest. Extra documents may be required to implement the management of conflicts of interest with a Performer candidate.

(3) Managing conflicts of interest of proponent (PM-related organization)

If the proponent makes a research proposal with a "PM-related organization" specified as a joint R&D group, and JST allocates research funds to the PM-related organization, it may cause a conflict of interest. Consequently, JST properly determines and manages the conflicts of interest between the two in consideration of the necessity, rationality, and appropriateness of doing so to avoid any doubt from third parties.

The "PM-related organizations" refer to the joint R&D group that meet any of the following. For "a" and "b," not only PM but also the spouses and relatives within the first degree of PM (hereinafter collectively referred to as "PM, etc.") shall be handled as follows:

a. An organization established based on the R&D results of "PM, etc." (including the cases where the PM, etc. is not directly involved in management and only holds the title of a technical advisor, or where the PM, etc. only hold shares.)
b. An organization where the "PM, etc." is appointed as an officer (including CTO but not a technical advisor).
c. An organization where the PM holds shares.
d. An organization from which the PM earns royalty income

Proponents may be questioned at interview regarding a "PM-related organization" specified as a joint R&D group. Extra documents may be required to implement the management of conflicts of interest with a "PM-related organization".

(4) Managing conflicts of interest of JST

Adopting a JST-invested company (hereinafter referred to as the "invested company") for the program and allocating R&D funds to the invested company may fall under the

JST's conflicts of interest. To avoid this, JST will implement management of the conflicts of interest to avoid any doubt from third parties related to JST and the invested company.

Proponents may be questioned at interview regarding an "invested company" specified as a joint R&D group. Extra documents may be required to implement the management of conflicts of interest with JST. JST manages the conflicts of interest to secure its fairness and transparency and does not handle an invested company unfavorably.

*For JST-invested companies, visit the following website:
https://www.jst.go.jp/entre/result.html#M01
When JST no longer funds the company, the company is not included in the management of the conflicts of interest and does not need to make a notification.

*The standard date of the notification is the day on which the open call for this program begins. The company to which JST has announced to invest as of this date should be notified. The company to which investment is internally decided but not announced need not be disclosed to maintain confidentiality within JST. For the disclosed investment of JST that is publicized, please visit the following website:
https://www.jst.go.jp/entre/news.html

2.8 Viewpoints in selection

Our selection will be based on the following viewpoints and made in a comprehensive manner.

① Nature as a PM

○ To have a wide human network of relevant researchers within and outside of Japan and to possess specialized knowledge

○ To have the ability for management to construct an optimum R&D institution and review the organization proactively, depending on the status of the progress (including those in relation to the management and usage of research data) and to have leadership ability

② R&D project Proposed by a PM

○ The target and/or the contents of the project proposed by the PM (referred to as "proposal contents" from here) must be based on a bolder idea than conventional ones and be a challenging one and must be an innovative one with which a strong impact is expected in the future industry and/or society.

○ The proposal contents must be able to clearly explain that R&D results aimed to be achieved at the end of the proposed project can solve main issues or bottlenecks to achieve the whole MS goal.

○ The proposal contents must entail collecting the knowledge of researches and developments and ideas at a high level, regardless of their geographical location within or outside of Japan.

And ensuring of transparency and fairness of research, appropriate treatment of research results, management of technical information and other items are to be considered because of importance in fair research activities.

Chapter 3 Promoting R&D projects after PMs are adopted

3.1 PMs to refine R&D projects

The PMs, with the direction by the PD in cooperation with the sub-PD and the advisors, refine the R&D projects. Specific items included in the refining are as follows: propose detailed plans for R&D projects (to formulate the scenarios backcast from the achievement of the MS Goals considering ELSI to prepare the R&D Plans, including the targets of the R&D projects and specified milestones, and to construct a research and development organizational infrastructure, etc.) and to construct an organizational infrastructure to support PM activities performed by the leader's institution. Through such refining, each type of investigation, such as trends in technology, workshops, and symposiums, is conducted or held to absorb opinions from various fields to achieve the MS Goals, the contents of the R&D projects proposed at the time of the application are further developed 37 (reviewed and embodied), and more effective and efficient R&D plans are proposed for the achievement of the MS Goals. The period of such refining is, in principle, within two months after the adoption. (If the leader's institution is not decided, R&D project cannot be started.

If the PM does not choose the present institution as the leader's institution, the deadline will be three months after the adoption.) In addition, for Goal 10, adjustments such as changes, additions, or deletions to certain challenges will be actively made based on the R&D content, at the discretion of the PD. In achieving Goal 10, it's necessary to not only focus on specific research communities but also gather insights from a broad range of fields necessary for solving challenges when further progress in the research topic is expected. Therefore, the addition of Performers from various research communities beyond ones specifically related to the goal must be actively pursued throughout the R&D project duration.

[Important items, such as the contents comprising the refining of R&D projects]

（1） Further developing (reviewing and embodying) the contents of R&D projects

○To specify the targets and milestones of the R&D project

・Tracking back from the future society when the MS target for 2050 is achieved, extrapolating from FY 2027, FY 2029, and FY 2034, as well as to the time when the MS target is achieved, and formulating scenarios to be addressed as R&D projects, including collaboration with existing R&D projects

・To specify the targets of the R&D project and the milestones that can be quantitatively evaluated regarding the progress of the R&D project upon evaluation for the embodiment of the scenario

*The evaluation is performed based on milestones previously defined at the time of the refining.

○To make specific plans for research and development and for a research and development organization

・A specific R&D plan (R&D items, contents/approach, budget allocation plan, etc.) and a plan to establish an R&D system, including collaboration with existing R&D projects, based on the scenario to be addressed as an R&D project for FY 2027, FY 2029, and FY 2034.

○ Constructing research and development organizations

・ The plans for selecting necessary Performers to implement the plans created in the previous item (positioning within the research and development organization, selection timing, the methods, etc.)

・ The selection of Performers who participate at the beginning of the R&D project

・ The plans for the research and development of the applicable Performers (the problems in the R&D subjects, the contents and approach, the plans for distributing budgets, etc.)

○ Gathering wisdom and expertise from various fields

・ Conducting each type of investigation, such as technology trends

・ Hosting workshops, symposiums, etc.

（2） Constructing a system to support PM activities

○ Determining a leader’s institution

○ Proposing plans to structure the organization to support PM activities

○ Constructing an organizational infrastructure to ensure the support necessary at the beginning of the R&D project and organizing an appropriate environment

（3）Other

○ Making arrangements for and organizing implementation regulations to define items that should be observed by participants in the R&D project

○ Moving the base of activities quickly into Japan (if the base of activities is outside Japan at the time of the adoption)

3.2 PMs to implement R&D projects

In cooperation with the sub-PD and the advisors etc., the PD judges the adequacy of the contents of refining. The PMs whose contents are recognized as appropriate are allowed to execute the R&D projects. PMs make arrangements for the implementation of the R&D Plans with each Performer, who is selected in advance to carry out the R&D project. Performers must undertake the management of the scope of the research and development designated by the PM, among the tasks entailed in the R&D project. Specifically, PMs clarify the objectives required to implement the scope of the applicable R&D project and the targets that should be achieved within the scope, and Performers propose plans for the R&D project based on the targets identified. Performers implement the R&D project under the management of the PM and based on the plans approved by him or her. PMs endeavor to understand the progress status of the research and development implemented by each Performer in a timely manner and give them instructions and/or advice accordingly. In cooperation with the sub-PD and the advisors etc., the PM judges the fact that the PM takes management of the R&D on his or her own. PMs are allowed to participate in the R&D on their own if they have an approval.

PMs try to understand the situation of the economy and social environment in relation to the applicable R&D project during the period of the implementation of the R&D project and need to implement the R&D project by confirming the adequacy of the scenario to reach the MS Goals having been created by themselves. In consideration to the aim of the Moonshot R&D that supports the R&D with high-risk and high-impact for leading disruptive innovation (See also ”The basic approach for the Moonshot Research and Development

Program”), it is expected that PM manages the R&D project by the approach with a small start and stage gates. (e.g. In the case of a project that requires technical examination, although research results can be anticipated if successful, the project starts as its feasibility study with a small start.) Under the direction of PD, and depending on the process in R&D project and the changes in at the external environment, PM needs to manages R&D project agilely and flexibly with his or her power and responsibility, by changing the direction of R&D project that contains such as increases, decreases, and spinouts of parts of R&D project. (In accordance with Guidelines for Operation and Evaluation of the Moonshot R&D Program, and considering the results of external evaluation and self-evaluation, PM should decide continuation, increase, decrease, change, and finish of R&D project.)

In addition, when considering the aims of Moonshot R&D, they must proactively promote the invitation of top-tier, overseas researchers and international joint research activities.

For the start of the R&D projects, the R&D institutions etc. need to make a contract for the entrustment of the research and development activities with JST as well as to take a pledge with respect to the regulation for implementing the R&D projects.

3.3 Commissioned R&D contracts

（1）For the start of an R&D project, JST makes, in principle, a contract for the entrustment of the R&D with the R&D institution. Moreover, before the R&D entrustment contract, the R&D institutions and JST prepare regulations for intellectual property, the handling of secrecy, and other operational rules for the R&D project. The R&D institutions should make a pledge.

（2）If the R&D institutions cannot reach an R&D agreement, an organization for the management or audit of the public esearch cost is not completed, or the status of financial affairs is extremely unstable, then the applicable R&D institution may not be allowed to perform the R&D.

*For the details, see section 3.8, "Items the R&D institutions etc. should pay attention to in particular."

（3）The intellectual properties such as patents that come from the R&Ds are, on the basis of the R&D agreement, in principle belong to the R&D institutions etc. on condition that the items described in Article 17, Industrial technology enhancement

act (Japanese version the Bayh-Dole Act), is observed by the R&D institutions.

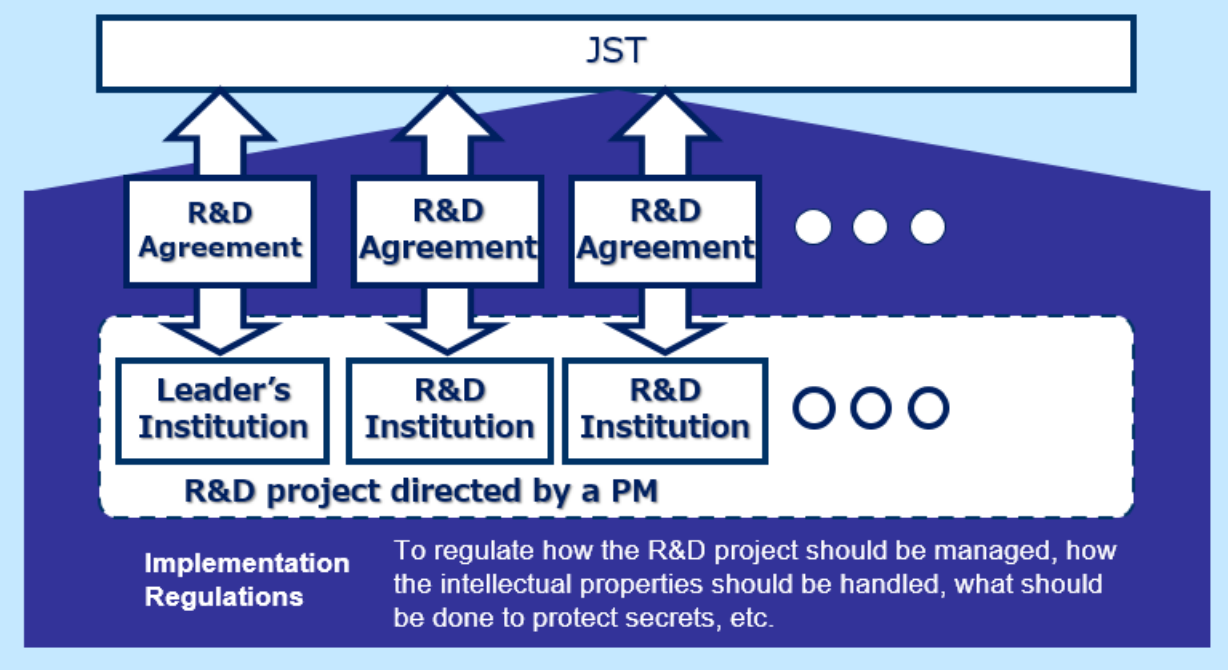


Fig.3 Organizations and Contracts

3.4 R&D funds

JST, on the basis of the R&D agreement, pays R&D funds as direct cost and indirect cost to the R&D institutions.

3.4.1 Direct cost

The direct cost is for the expenditures listed below paid by an R&D institution etc.

a. Cost for goods: the expense to purchase a new facility, equipment, or consumables*.
b. Cost for travel: the expense for the PMs', Performers', and R&D project participants' travel, as described in the R&D plan for PMs and Performers.
c. Cost for labor: The labor cost and rewards for the PM, the Performers, and the R&D project participants*
d. Others: the cost for the publication of research results (submitting a paper), leasing equipment, transport, and patents.

*For the purchase of a new research facility and/or equipment, assume the use of "a

system to share the research facility/equipment by the unit of a research organization" ("equipment sharing system" from here). It is discussed in the "Introduction of a New Research Facility/Equipment Sharing System Integrated with the Management of Research institutions" (Advanced Research Platform Group, Council for Science and Technology, November 2015). For more details, see section 5.13, "Promotion of sharing research facilities and equipment.

*In the R&D project proposal form, the description on the major facility to be purchased is needed; after the adoption is determined, in the course of the refining of the R&D project by the PM, the plans for the purchase, operation, sharing of the applicable facility should be brushed up. In addition, from the viewpoint of the effective and efficient implementation of each R&D project implemented in this program, some arrangements may be made for the facility to be purchased with the direction of the PD in cooperation with the sub-PD and the advisors etc.

*The duplicated labor cost of a person that is managed by the national government with a management expense grant for national university corporations, incorporated administrative agencies, or with government subsidies to incorporated educational institutions, will be excluded. Furthermore, the labor cost for the PMs and the persons who support the activities of the PMs conform to the regulations of the PM's institution. It should be within the appropriate scope, according to socially accepted ideas (to be discussed in deliberation with JST in advance).

*In JST's competitive research fund projects, a principal investigator (a PM for the Moonshot R&D Program) at university can pay for costs for their own personnel and delegated work other than research (buyout costs) only when meeting requirements. Please see below for the necessary requirements.

○Expenditure of Personnel Expenses for Principal Investigators (PIs) from the Direct Expenses of Competitive Research Funds" (October 9, 2020)
https://www8.cao.go.jp/cstp/compefund/pi_jinkenhi.pdf

○Revision of the Direct Expenses of Competitive Research Funds to Allow Expenses for Non-research Activities on Behalf of Researchers (Introduction of a Buyout System)" (October 9, 2020).

https://www8.cao.go.jp/cstp/compefund/buyout_seido.pdf

*In Moonshot R&D, appropriating the direct cost to other costs is allowed when the research results are expected to lead to a patent during the R&D project implementation period (the cost for a patent application, patent lawyers, travel, procedures, and translation).

＜Moonshot Research and Development - Instruction of procedures to execute contracted research and development＞

(for universites) https://www.jst.go.jp/contract/moonshot/2022/moonshota.html

(for companies) https://www.jst.go.jp/contract/moonshot/2022/moonshotc.html

3.4.2 Indirect cost

Indirect cost is the cost that is necessary for the management etc. of the R&D institutions etc. for the implementation of the R&D project, which can be paid based on the following ratio with respect to the direct cost:

Indirect cost is regarded, in principle, as 30 percent in comparison with the direct cost for universities and 10 percent for others (20 percent for medium- or small-sized companies only). The definition of medium- or small-sized companies is based on the situation at the time of the decision of their prospective participation in the R&D project. They must conform to the Small- and Medium-sized Enterprise Basic Act, Article 2, Paragraph 1 (the scope of small- and medium-sized enterprises and the definition of terms).

When utilizing indirect cost, R&D institutions, etc., must create a policy for its use and execute this in a systematic and reasonable way, as well as ensuring transparency of expenditure, in accordance with the “Common Guidance for the Execution of Indirect Expenses of the Competitive Fund” (agreed upon by the coordination committees of relevant ministries and agencies for competitive research funding on April 20, 2001, and revised on October 1, 2021).

3.4.3 Multi-year contracts and the carry-over system

JST has R&D agreements as multiple-year contracts, which make it possible to carry over R&D funds and make contracts for procurements that continue beyond fiscal years. The aim is to further effective and efficient uses of R&D funds and prevent misconduct for the maximization of R&D funds. (as for the carry-over system, there may be cases in which multiple-year contracts are not allowed or carry-over is not applicable depending on the clerical management systems etc. of R&D institutions etc. besides the handling that is different among universities and companies).

3.5 PDs' progress management and evaluation of the PMs

As for the progress management of PMs, evaluation, etc., in cooperation with the sub-PD and the advisors etc., the PD handles these kinds of work.

（1） Progress Management of PMs

PMs need to provide status reports of their R&D projects to the PD as requested. Their reports should be submitted, in principle, biannually; however, the timeline may vary. Furthermore, PD may visit the sites of R&D institutions etc. for the purpose of grasping the progress status, giving advice and/or instruction, etc. in cooperation with the sub-PD and the advisors etc., as necessary.

（2）Evaluation of PMs

The PD evaluate the PMs during the realization of the R&D projects, in cooperation with the sub-PD and the advisors etc.

The evaluation will be conducted in FY2027 and FY2029, and if it is decided to continue beyond FY2029, in FY2032 and FY2034.

In addition, Funding agency will have the self-evaluation every year. The evaluation of the PMs are performed based on the status of the progress with respect to the milestones (standards and conditions) that can quantitatively evaluate the progress of an R&D project target and/or of an R&D project that is/are defined in the R&D plans as well as the status of the project management of the PMs. The evaluations are performed in consideration, as necessary, to the state including external factors such as the

changes in the economic and/or social environments in the period up to the time of the evaluation from the time for refining.

Resulting from the evaluation, the R&D project plans may change, the R&D cost may increase or decrease, or the R&D project may be terminated altogether (a PM may be dismissed).

[Viewpoints of evaluation]

○ The appropriateness of project targets and contents aimed at achieving the MS Goals
○ The status of progress toward project targets (particularly comparisons of both domestic and overseas)
○ The future prospects of project targets
○ The status of establishing an R&D system
○ PM's project management status (including flexibility and nimbleness)
○ Status of research data storage, sharing, and disclosure
○ Cooperation with industry and the status of bridging the gap between the R&D and practical use in society (including the status of acquiring private funding [matching] and spin-out)
○ Effective and efficient R&D promotion through international cooperation
○ Challenging and innovative efforts based on bold ideas
○ Effective and efficient use of research funding (including role sharing between the public and private sectors, and stage-gates)
○ Bi-directional communication activities (public dialogue on science and technology)

（3）Others

To manage the PDs' portfolios, there may be opportunities for further review of the PMs, depending on their management methods after the evaluation period defined here.

3.6 The roles and responsibilities of the PMs, leader's institutions, and Performers

3.6.1 The roles and responsibilities of the PMs

The PMs gather the wisdom of a variety of researchers such as top-runner researchers,

younger researchers, and senior researchers in and outside Japan, plan, propose, and implement challenging R&D projects based on a bold idea that is not an extension of some conventional technology, construct and take management on their own, and carry the responsibility for the R&D projects in general for the achievement of the MS Goals and the realization of the R&D concepts.

Specifically, they promote the following management responsibilities for R&D projects with the support of their leader's institution or the like.

[The management of the R&D projects performed by PMs]

(i) Designing R&D projects

○ Planning and proposing R&D projects

・To formulate scenarios backcast from the achievement of the MS Goals, to prepare R&D Plans, including the targets of R&D projects, specify milestones, etc.

○ Building research and development organizations

・To formulate plans to construct optimal research and development organizational infrastructure to promote R&D projects

・To select Performers based on the above-mentioned plans

(ii) Implementing and undertaking the management of R&D projects

○ Undertaking the management of R&D projects

・ To summarize the R&D Plans for each Performer, as well as the budget plans, to grasp the progress status, and to summarize reports, etc.

・ To promote cooperation among each Performer as necessary

・ To undertake the management of research and development implementation, in addition to that mentioned above

○ Evaluating R&D projects

・ To flexibly conduct reviews to alter the orientation, including the acceleration or deceleration of R&D projects conducted by each Performer and the spin-off of part of research results

○ Applying research and development results

・ To formulate the principles of handling intellectual properties, to appropriately acquire intellectual properties, and to apply the results from the researches and

developments, such as the activities required to transfer technology

(iii) Organizing a system to support PM activities

○ To hire and undertake the management of the work done by personnel supporting the PM activities from the leader's institution

○ To organize the system in relation to management, including the cooperation of Performers in addition to the above-mentioned entity

(iv) Cooperation with JST

○ Reports to the PD, the sub-PD and the advisors as the external experts

・ To report on the status of the progress of the R&D projects to the PD, the sub-PD and the advisors

・ To respond to the advice and/or guidance from the PD, the sub-PD and the advisors

・ To respond to evaluation

○ Making Business Arrangements

・ The regulations governing implementation overseen by R&D institute, JST, contracting businesses, and each entity involved to manage the implementation

・ To cooperate with JST in symposiums, training sessions, etc. and participation therein

○ The management for the R&D projects instructed by the PD or the like besides the above-mentioned

(v) Publication and outreach activities based on the results of R&D projects

○ To undertake the management of the homepage, publish pamphlets, hold symposiums, make press releases, etc.

○ Two-way communication activities in which researchers explain their research activities to society in a way that is easy to understand (science and technology dialogue with the public)

○ To report publication and outreach activities to JST

○ To undertake the management and operation of public relations and outreach activities regarding R&D projects in addition to those mentioned above

3.6.2 The Roles and responsibilities of leader's institutions

The leader's institutions are the employers of the PMs, which mainly undertake the management of the operation to support PM activities to ensure that the PM activities can be performed effectively and efficiently.

A leader's institution, based on its contract with JST, organizes an environment in which the PM activities can be performed effectively and efficiently, hires personnel to support the PM, and constructs organizational infrastructure, thereby providing various types of support to the PMs' activities, including managing the progress of the R&D projects undertaken by the Performer, who works for the leader's institution or any other organization, and supporting the PM activities.

Specifically, it supports the activities in section 3.6.1, [The management of the R&D projects performed by PMs].

In addition, a leader's institution should manage the cross-organizational support provided to PM activities with the front-runner support function of Moonshot R&D, in addition to direct support for PM activities.

3.6.3 The roles and responsibilities of Performers

The Performers take management of the assignments for the researches and developments in the R&D projects as instructed by the PMs for the achievement of the MS Goals and the realization of the R&D concepts. The Performers make plans for the R&D project based on the targets that should be achieved within the purpose and scope to implement the applicable tasks as instructed by the PM. They then implement the R&D projects based on the R&D Plans that have been approved by the PM. Before a Performer initiates an R&D project, the R&D institution to which the Performer belongs must finalize a consignment research and development contract with JST, as well as take a pledge regarding the regulations under which it will abide when implementing the R&D projects in which it participates.

Furthermore, depending on the status of the progress of the research and development, and with the approval of PD, each PM may increase, decrease, or cancel the budget of the part of R&D project.

*PMs and Performers need to observe section 3.7, "Contract items the PMs and Performers should pay attention to," as well as the roles and responsibilities described in section 3.6.1, "The roles and responsibilities of PMs," and section 3.6.3, "The roles and responsibilities of Performers." See these sections for further detail. PMs must observe these roles and responsibilities as if they were a Performer, if they are allowed to implement R&D projects on their own and are conducting the tasks entailed therein.

*Leader's institutions and R&D institutions (referred to as "R&D institutions etc." from here) need to observe section 3.8, "Items the R&D institutions etc. should pay attention to in particular," as well as the roles and responsibilities described in section 3.6.2, "The roles and responsibilities of leader's institutions," and section 3.6.3, "The roles and responsibilities of Performers." See these sections for further detail. The leader's institution must also observe them as an R&D institution, if its PM is allowed to implement the research and development on his or her own and is conducting the tasks entailed therein.

3.7 Contract items the PMs and Performers should pay attention to

(1) Participants must fully recognize that the taxes of national residents cover the R&D funds of JST, and they must spend them justly and efficiently.

(2) After PMs are adopted, they and the Performers must observe the following items through guidance sessions, which are held by JST. They must submit to JST a document stating that the following items are confirmed. Furthermore, note that if the research ethics learning materials in Item c below are not finished, the R&D funds may be suspended until there is confirmation that the training course has been completed.

a. To observe the requirements of the public invitation and the regulations of the organization to which they belong;

b. To understand that the taxes of national residents cover the R&D funds of JST and that they should not commit improper acts in their R&D activities (falsification, alteration, and/or theft of papers) or improperly use R&D funds;

c. To notify and educate others about their participation in the course on research ethics learning materials, as designated by JST (eAPRIN, formerly CITI); to

prevent in advance improper R&D activities or improper use of R&D funds among the R&D project participants

*For more details, see section 4.1, "Completing the course on research and ethics education."

(3) To prevent improper R&D activities in advance (falsification, alteration, and theft), the R&D PMs and participants need to finish the research ethics learning materials (eAPRIN, formerly CITI),etc.

*For more details, see section 4.1, "Completing the course on research and ethics education.

(4) The PMs and participants should proactively support and ensure a variety of career paths inside and out of the country for the young doctoral researchers who are paid with R&D funds.

*For more details, see section 4.14, "Improving the treatment of doctoral students", section 4.15, "Ensuring self-sustaining, stable research environment for young researchers", section 4.16, “Voluntary research activities of young researchers employed for implementing the project” and section4.17, “Supporting various career paths for young researchers”.

(5) Handling R&D Results

a. Acquire intellectual property rights properly. You follow the R&D agreement and have your R&D institution apply for (or file) a patent.

b. If you publish a paper about the R&D results acquired from the implementation of an R&D project, explain that it is fruit of a Moonshot R&D project.

c. The PMs will be asked to submit, together with the R&D project plan to JST, the "Data Management Plan" that compiles, by following the items listed below, the retainment and management and the publication or non-publication of the R&D data accrued as a fruit and the principles of the usage of the R&D data you can publish and, based on this plan, to appropriately implement the storage, management, publication, partial publication or non-publication of the data on the basis of the "Guidelines for Operation and Evaluation of the Moonshot R&D Program" and "JST's basic policies for handling research achievements toward an open science promotion."

・JST's basic policies for handling research achievements toward an open science promotion
https://www.jst.go.jp/all/about/houshin.html#houshin04

For the details of the items you fill in, see "The Guideline for the Use of the Basic Principle of JST in Relation to the Research Results for the Promotion of Open Science."
https://www.jst.go.jp/pr/intro/openscience/guideline_openscience_r4.pdf

<The items you complete in the data management plans>
・The principles for the retainment/management of the R&D data as a target of management
・The principles in relation to the publication/non-publication of R&D data
・The methods of and organizations for publishable R&D data
・The assumed uses and purposes of publishable R&D data
・The endeavors for the promotion of the usage of publishable R&D data
・Other special remarks

d. For the advanced data management, clarify the categories of storage-sharing-publication of research data based on the open-close strategy. And promote research information exchange and storage-sharing- publication of research data, by utilizing the research data infrastructure system (NII Research Data Cloud) and other tools. When using NII Research Data Cloud, in order to ensure the accuracy of adding metadata to research data and reduce the input load, the necessary information related to this call registered in e-Rad will be provided to NII Research Data Cloud.
e. We will ask the PMs and Performers to collaborate with R&D project participants on cross-sectional and outreach activities to promote cooperation and the multiplier effect in R&D at workshops and symposiums held by JST in or outside the country and for MS Goals and R&D concepts. In addition, we expect that global activities

and publications will be proactively made in the course of the promotion of R&D activities.

(6) Understanding in advance that JST will provide the required information, such as the R&D project name, participants, and consignment cost, to the Cross-ministerial R&D Management System (e-Rad) and the Cabinet Office (section 4.31, "The handling information on e-Rad). In addition, we may ask that each type of information be provided.

(7) There are cases in which a tracing evaluation will be conducted after a certain period has passed after the end of an evaluation or the like in relation to this program and/or after the R&D project. On such occasions, you are asked to provide each type of information or participate in interviews.

3.8 Items the R&D institutions etc. should pay attention to in particular

The R&D institutions etc. must sufficiently recognized that the original funds of the funds for the consigned R&D are public funds while the R&D project is implemented and, thus, try to implement the R&D projects efficiently. The R&D institutions etc. that cannot fulfill their responsibilities listed below are not allowed to implement PM activities or to implement the R&D.

(1) In the case in which the R&D institution, etc. are domestic organizations based in Japan

a. The R&D institutions etc. must, in principle, enter an R&D agreement with the contents presented by JST. In addition, they are obligated to implement R&D appropriately. They must follow the implementation regulations, the R&D agreement, the instructions for the clerical processes, and the R&D plan. If it is not possible to enter an R&D agreement, or if it is judged that the/or the R&D institutions etc. cannot let or lets the PM activities and/or the R&D be implemented appropriately, the implementation of PM activities and R&Ds at the applicable/or the R&D institutions etc. are not allowed.

*For the R&D agreement template, access the following website:
https://www.jst.go.jp/contract/download/2022/2022_moonshot_keiyakusho.pdf

b. The R&D institutions etc. need to make efforts for the appropriate execution of

the Research funds after organizing a management and audit organization for the public R&D cost on the responsibility of the R&D institution etc. on the basis of the Guidelines for the Management and Audit of Public Research Funds In Research Institutions (practice standards) (decision, Minister of Education, Culture, Sports, Science and Technology, February 15, 2007; revised on February 1, 2021). Furthermore, R&D institutions etc. are obliged to make report periodically to MEXT on the status of the implementation of organizing the organizations etc. in relation to the management and the audit of public Research funds and to correspond to each type of surveys in relation to organizing organizations etc. (section 4.27, "Guidelines for the management and audit of public research funds in research institutions (practice standards)."
https://www.mext.go.jp/a_menu/kansa/houkoku/1343904_21.htm

c. R&D institutions need to make efforts for the prevention of misconducts after organizing necessary regulations and organizations on the responsibility of the R&D institutions etc. on the basis of the Guidelines for Responding to Misconduct in Research (decision, Minister of Education, Culture, Sports, Science and Technology, August 26, 2014). The R&D institutions must prevent misconduct after they have organized the necessary regulations and organizations. The responsibility of the representative and R&D institutions is based on the Guidelines for Responding to Misconduct in Research (decision, Minister of Education, Culture, Sports, Science and Technology, August 26, 2014). The R&D institutions must respond to each type of organizational survey in the guideline (section 4.28, "Guidelines for responding to misconduct in research").
https://www.mext.go.jp/b_menu/houdou/26/08/1351568.htm

d. The R&D institutions etc. are obliged to have the participants in the R&D projects fully recognize the contents of the guidelines described in items "b" and "c" above and to have them learn from the educational materials in relation to the research ethics designated by JST.

e. The R&D institutions etc. need to appropriately make payment and take management by following the regulations of the institutions and the R&D institutions with consideration also to flexibility and to follow the applicable rules

with respect to the items for which the rules specific to Moonshot R&D are provided in the (JST) official administration manual defined by JST while executing the R&D funds. The representative and R&D institutions that receive a subsidy for scientific research funds can conform to the handling of the scientific research funds at their leader's institutions and R&D institutions with respect to the items on the usage of R&D funds not described in the (JST) official administration manual.

f. The R&D institutions etc. need to make a contract with the participants in the R&D project to the effect that the intellectual property rights that may accrue by the implementation of the R&D belong to the applicable R&D institutions etc., or to organize the work regulations to define provisions to that effect. In particular in the cases in which a student or students that is or are not in the relationship of employment with the R&D institutions etc. becomes or become a participant or participants in the R&D project, it is necessary to make necessary arrangements such as making a contract etc. with the applicable student or students in advance so that the intellectual property rights in relation to the invention (including devices and the like) made by the applicable student or students in the course of the implementation of this R&D project belong to the research and development institutions except for the cases in which the student or students clearly cannot be an inventor or inventors. Further, with respect to the conditions for transferring the rewards of intellectual property rights, the R&D institution must take measures to prevent disadvantaging student-inventors.

If the right to transfer or implement exclusively is established for the applicable intellectual property right, it is necessary to acquire approval from JST in advance.

If filing an application or a patent, registering such establishment, or making a waiver is applicable, the R&D institution must submit a report to JST.

g. The R&D institutions etc. are obliged to correspond to the accounting audit by JST, the audit by a national government, or the like.

h. The R&D institutions etc. in the cases in which JST makes designation depending on an investigation on the organization for the clerical management, the status of accounting, or the like, need to follow the procedures of changing the method of payment of the R&D funds, the reduction of the consigned R&D cost, or the like.

When the liquidation or downsizing of JST is necessary due to an assessment at the end of JST's mid- and long-term targets, or when revisions arise in the budgetary policies of the national government, we may cancel a contract before its expiration or reduce the R&D funds based on the special provisions in the R&D agreement. Based on the results of an evaluation of an R&D project, we may increase or reduce the R&D funds, change the period of a contract, terminate the research, or take other measures. If JST judges that continuing the R&D project is inappropriate, we may cancel the contract or take other measures even during the contract period. The R&D institutes etc. need to follow those instructions.

i. If the applicable R&D institutions etc. are the national government or a local government, when making an R&D agreement, they need to make sure to implement the procedure for necessary budgetary measures by the start of the R&D development agreement on the responsibility of the R&D institutions etc. (If a fault in a necessary procedure is revealed after making the contract, the R&D agreement will be canceled, the R&D funds will be returned, and other measures may be taken.)

J. As part of the efforts to prevent misconduct in PM activities and R&D activities, JST mandates that researchers who are participating in newly adopted R&D projects and are affiliated with research institutions, etc., complete one of the following programs or materials:

- "eAPRIN" provided by the Association for the Promotion of Research Integrity
- "eL CoRE" provided by the Japan Society for the Promotion of Science
- "For the Sound Development of Science" by the Japan Society for the Promotion of Science
- "Responsible Research Practices to Learn from Cases

– A Casebook to Instill Awareness and Learning –" by the Japan Agency for Medical Research and Development

- "A Compendium of Near-Miss Incidents Related to Research Integrity" by the Japan Agency for Medical Research and Development
- Other research ethics education programs and training deemed equivalent by the

affiliated research institution

(If deemed equivalent by the research institution, JST's video "Gaps in Ethics" is also acceptable.)

If it is difficult to attend a program on research ethics education at the affiliated institution, such as when the institution does not conduct any programs on research ethics education, it is possible to take the eAPRIN (e-learning materials operated by the Association for the Promotion of Research Integrity (eAPRIN)) through JST.

For this purpose, if the applicable researcher or the like does not fulfill the obligation to finish the study course in spite of the reminder from JST, JST will instruct the R&D institutions etc. to suspend the whole or part of the R&D funds. In these cases, the execution of the R&D funds should be suspended as instructed, and do not resume the payment of the R&D funds until another instruction is made.

k. The R&D institutions etc. should provide measures, such as making a joint R&D agreement with other R&D institution to which the Performer belongs. It should not violate the R&D agreement with JST or the implementation regulations for handling intellectual property rights and maintaining secrecy. Ensure that there are no issues with the implementation of the R&D project, the use of the R&D results, or the like.

l. As the funds for consigned R&D are originally public funds, please pay careful attention to the economy, efficiency, efficacy, legal adherence, and accuracy of their utilization, and ensure that they are handled appropriately in a way that establishes accountability. Please strive for systematic utilization, and be alert so that the R&D institutions can ensure that there is no procurement of materials at the end of the research period or the end of the fiscal year with the aim of using up the budget.

(2) If the R&D institutions are overseas organizations

a. The R&D institutions should enter into an R&D agreement using JST’s joint research agreement template. Indirect cost is 30% or less of direct cost. In addition, they are obligated to implement the R&D appropriately by following the R&D agreement and the R&D plan. If it is not possible to enter into an R&D agreement within three

months after adoption, or if it is judged that the research at the applicable R&D institution cannot be conducted appropriately, the implementation of the R&D at the applicable R&D institution will not be permitted.

b. The R&D institutions etc., on the basis of the applicable principles or the like if the R&D agreement and JST defines principles separately, are obliged to make payments and manage the R&D cost appropriately. It is the responsibility of the R&D institutions to prepare in English a breakdown of the costs and describe the contents of the payments from the R&D funds (equivalent to the list of expenditures of domestic institutions). In addition, the R&D institutions etc. need to correspond to each type of surveys in relation to the status of the payment in response to the request from JST even during the period of an agreement.

c. For further details on the conditions, please refer to the latest joint research agreement template.

* JST may judge that an R&D agreement should not be made to control security in trade for the institutions listed in the "Foreign User List**".

**See also: https://www.meti.go.jp/policy/anpo/law05.html#user-list

3.9 Other Considerations

3.9.1 Systems for Childbirth, Childcare, Care Giving

As part of its efforts to promote equal participation from men and women, JST has implemented support systems for childbirth, childcare, and care giving. This system provides a "Gender Equality Promotion Fund" (standard amount: 300,000 yen per month x number of months of support) for R&D projects, etc., with the aim of enabling full-time researchers who are employed through projects being funded by JST (not including indirect costs) to continue their research in the midst of life events (childbirth, childcare, nursing care), or to continue their careers from the time they return to research if they have to suspend their research.

See the website below for more details.

https://www.jst.go.jp/diversity/about/research/child-care.html

3.9.2 Using the JREC-IN Portal

The database of researchers and research staff (JREC-IN Portal https://jrecin.jst.go.jp) is

the largest website for recruiting researchers in Japan. The service contains information on human resources, including researchers, supporting staff, as well as engineers involved in research. The database is completely free to use.

The database currently holds more than 20,000 advertisements for roles at universities, public research organizations, and private business firms, and has more than 140,000 registered users. Using JREC-IN Portal's online application functionality also simplifies the management of application documents and reduces the burden on job seekers. We hope you'll make use of the JREC-IN Portal to search for human resources (postdoctoral, researchers, and so on) with high levels of knowledge when recruiting for research projects.

JREC-IN Portal is also integrated with researchmap, and through its resume and performance list creation features, enables easy preparation of application documents using information registered on researchmap.

Chapter 4 Instructions for proponents

4.1 Completing the course on research and ethics education

To apply to this program, proponents need to have completed a course on research and ethics education. Note that if we cannot confirm their finishing the course, we will regard their applications as not having satisfied the requirements.

Take the course on research and ethics education and apply for the procedure to declare your completion by following either one of Items (1) and (2) below. See Chapter 5, "How to use the cross-ministerial R&D management system (e-Rad) for your application," for how to input information.

(1) If the proponents have completed the program at the organization to which they belong

If an e-learning or training session, such as a course on each type of research ethics education (including eAPRIN, formerly CITI), has been finished at the time of applying, then use the e-Rad application information input screen to declare that the proponent has finished the program.

(2) If a program has not been completed at the organization to which the proponent belongs (including when no such program is provided by the organization to which the proponent belongs)

a. If eAPRIN (formerly CITI) has been finished in a JST project in the past

If an eAPRIN (formerly CITI) has been finished in a JST project at the time of the application, then use the e-Rad application information input screen to declare the proponent has finished the program.

b. Other than "a" above

If it is difficult to take a course on research ethics education at the organization to which the proponent belongs because, for example, such a program is not provided at the organization, the proponent can take a digest version of eAPRIN (formerly CITI) via JST. For how to take the course, access the website of the call for research proposals.

Website of the call for research proposals

https://www.jst.go.jp/moonshot/koubo/202303/ms8.html

Access the following URL to take a course.

https://edu2.aprin.or.jp/ard/

It takes roughly one to two hours to take a course, and you do not need to pay for it. After completing the course and completing it promptly, please enter "Digest version completed" on the e-Rad application information.

■ The inquiry office for the contents of the programs on research and ethics education

Research Integrity Section, Audit and Legal Affairs Department, Japan Science and Technology Agency

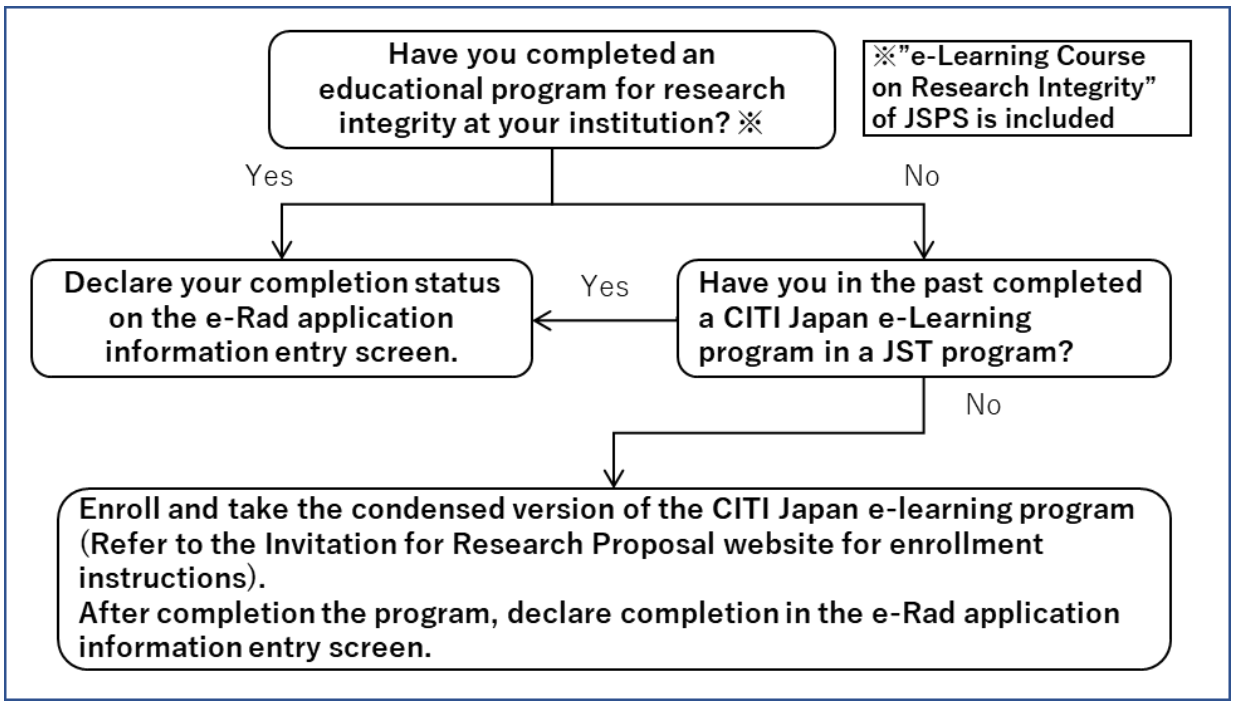
E-mail: rcr-kousyu@jst.go.jp

■ The inquiry office for the call for research proposals

Department of Moonshot Research and Development Program, Japan Science and Technology Agency

E-mail: moonshot-koubo@jst.go.jp

* Write, in the body of the email, the title of the call program, the projectID on e-Rad, the name of the proponent, and the title of the R&D project. Also, make sure to write “[2024 PM]” in the subject.



The flowchart for completing a course on research ethics and declaring the completion of a course

JST also requires the completion of one of the following programs or materials for researchers participating in this project:

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- "eAPRIN" provided by the Association for the Promotion of Research Integrity
- "eL CoRE" provided by the Japan Society for the Promotion of Science
- "For the Sound Development of Science" by the Japan Society for the Promotion of Science
- "Responsible Research Practices to Learn from Cases

– A Casebook to Instill Awareness and Learning –" by the Japan Agency for Medical Research and Development

- "A Compendium of Near-Miss Incidents Related to Research Integrity" by the Japan Agency for Medical Research and Development
- Other research ethics education programs and training deemed equivalent by the affiliated research institution

(If deemed equivalent by the research institution, JST's video material "Gaps in Ethics" is also acceptable.)

= =

If it is difficult to attend a program on research ethics education at the affiliated institution, such as when the institution does not conduct any programs on research ethics education, it is possible to take the eAPRIN (e-learning materials operated by the Association for the Promotion of Research Integrity (APRIN)) through JST

The same approach will be taken in the next fiscal year; therefore, if the project is adopted, all research participants will be required to complete one of the above-mentioned research ethics education programs or materials designated by JST (except for those who have already completed one of the above-mentioned programs or materials designated by JST through their affiliated institution or JST projects).

4.2 Restrictions on multiple applications

In relation to the call of Moonshot R&D, the following restrictions were applied to multiple applications.

As for the other programs in and outside JST, certain measures may be taken if it is judged that an irrational duplication or an extreme convergence is made. For the details, see section 4.3, "Measures for irrational duplications and extreme convergences.

(1) No one proponent is allowed to make applications of two or more R&D projects for the same MS Goal.

(2) Anyone who is already a PM for MS Goals (1-9) for which R&D projects have already begun are not allowed to apply for this call for MS Goal 10 PMs. Application forms that do not meet this requirement will be considered incomplete and will not be accepted.

(3) In the case in which you plan to participate, as a PM or a performer, in the proposal for two R&D projects or more and two or more of the R&D projects are adopted, we may make adjustment, depending on the judgment of a PD, after considering the contents, the scale, etc. of the R&D, for the reduction of the R&D cost and for not allowing the participations in some problems among the R&D project in which the

applicable researcher participate.

[Reference]

Table: Eligibility for applications and planning for R&D projects

Position in the Proposed Project / **Position in other Moonshot project**	PM (Proponent)	Performer (Note1)
PM	**X**	✓ **(Note3)**
Performer (Note 1)	✓ **(Note2, 3)**	✓ **(Note3)**

(Note 1): The MS Goals (1, 2, 3, 6, 8, 9,10) driven by JST define a "Performer" as someone "who manages the assignments for the researches and developments entailed in the R&D projects, as instructed by the PM, to achieve the MS Goals and embody the R&D concepts." This definition of "Performer" also applies in the case of the MS Goals (4, 5, 7) handled by other funding agencies.

(Note 2): We will also evaluate whether the requirements described in "2.5.1 Requirements that proponents as PM candidates are expected to have" are fully satisfied, such as all responsibilities of the R&D project must be undertaken for all periods of the R&D project's implementation.

(Note 3): Once you are allowed to participate in the project after selection, any extreme convergences or irrational duplication will be taken into consideration, and, based on the PD's judgement, you may be subject to adjustments such as the research funds for the project being reduced or applied to only one of the research projects you are carrying out.

4.3 Measures for irrational duplications and extreme convergences

○The measures for irrational duplications

In the event that multiple competitive research grants or other research funds (all research funds from inside and outside Japan, including grants, subsidies, joint research funds, and consigned research funds that are currently allocated to individual research projects※) are unnecessarily distributed through duplication to the same research being

undertaken by the same researcher, if any of the following applies, the research will not be adopted, its adoption will be cancelled, or the distribution of funds will be reduced (hereinafter, “non-adoption of research problems, etc.”), depending on the extent of duplication.

- Applications are made at the same time for two or more competitive funds for practically the same research (including the cases in which considerable duplication is made; the same applies to the following) and are adopted
- Applications are redundantly made for practically the same research that has been already adopted, and competitive funds have been already distributed
- There is duplication in the purpose of the research funds among two or more research
- Other cases similar to the above

Applications for other competitive funds are not restricted in the application phase for this program; however, if an application is adopted for any other competitive funds, quickly report to the office personnel of this program. Any omission in this application may result in the rejection of the research proposal or other action under this project.

※ Excluding basic expenses or internal funds that are distributed within your institution, commercial activities as prescribed in the Commercial Code, and funding through direct or indirect finance.

○ The measures for extreme convergences

Depending on the degree of the challenge, research subjects may fail the selection process, even if the contents of an R&D proposal for this program and an R&D project implemented using another competitive funds differ, if the total of the R&D funds distributed in the applicable fiscal year to the applicable researcher or R&D group (referred to as "researcher group" from here) exceeds the limit that can be used effectively and efficiently, the amount is not used entirely within the R&D period, or any of the following applies.

- If excessive R&D funds have been distributed to the researcher group and the R&D method
- If the R&D funds distributed to the applicable R&D exceeds the researcher's effort

(the ratio (%) of the time necessary to implement the applicable R&D with respect to the total time* of the work of the researcher)

・If an unnecessarily expensive R&D facility is purchased

・Other cases similar to the above

If the contents described in the proposal to this program should be altered after it is submitted because, for example, another application is made for another competitive funds and is adopted, quickly report to the office personnel of this program. If this report is omitted, the decision of the adoption in this program may be canceled.

*The time for research activities and teaching, management assignments, and other activities substantially equivalent to work is included in the total work time of a researcher.

○Methods of elimination of irrational duplications and extreme convergences

To confirm that adequate efforts can be ensured while eliminating irrational duplications of competitive research funds and extreme convergences and ensuring transparency in research activities, you will be asked to provide the following information when you submit an application.

（ｉ）Information on the current status of application for and acceptance of other competitive research funds, including those granted by other ministries and agencies, and on all current affiliated institutions and positions.

When applying, PMs and Performers will be asked to provide information on the current status of application for and acceptance of other competitive research funds, including those granted by other ministries and agencies (name of the program, research title, implementation period, budget, efforts, etc. (hereinafter, “information on research funds”)), and on all current affiliated institutions and positions (including side jobs, participation in foreign personnel recruitment programs, emeritus professorships without employment contracts, etc. (hereinafter referred to as “information on affiliations and positions”)) in the application documents and in the Cross-ministerial R&D Management System (e-Rad). If any false information is included in the application documents or in e-Rad, the R&D project may not be adopted.

Within the information on research funds, information related to joint research, etc. for which confidentiality agreements, etc. have been exchanged will be handled as follows, taking individual circumstances into consideration so that collaborative industry-academia activities, etc. are not curtailed.

- You will only be asked to provide information which is necessary to ensure that the R&D project applied for does not create irrational duplication of research funds or extreme convergences and to ensure adequate efforts with relation to carrying out the R&D project (in principle, the names of partner institutions involved in joint research, etc., the amount of research funds received, and information related to the efforts).
- However, if there are any issues with submitting this information due to unavoidable circumstances, for example based on the details of a previously concluded confidentiality agreement, an application may be submitted without including the names of partner institutions and the amount of research funds received. Note that even in this case, we may make an inquiry with your affiliated institution if necessary.
- In addition to your affiliated organization, information may also be shared with research fund allocation institutions and relevant ministries and agencies, but even in such cases, such information will only be shared to those who are obligated to maintain confidentiality.

Note that when concluding confidentiality agreements, etc., in the future, we ask you to consider including the condition that information, limited to what is necessary, will be submitted when applying for competitive research funds. Please note, however, that it is also possible to conclude an agreement that does not include a condition to submit such confidential information, as long as both parties to the agreement agree on the scope of information to be kept confidential and the justification for doing so (e.g., information that is critical for corporate strategy and is considered to be highly confidential in nature, etc.).

（ii）Other information necessary to ensure transparency with regard to all research activities you are involved with.

In addition to information on research funds and on your affiliated organization and position, you will be asked to make a pledge that you are appropriately reporting to

your organization all information necessary to ensure transparency with regard to all research activities you are involved with, including donations and support other than funds for facilities or equipment, etc.,* in accordance with the relevant rules and regulations. If it is found that information is not being appropriately reported in violation of the pledge, the research project may not be adopted, etc.

With regard to information on the acceptance status of facilities and equipment, etc. that are not being used for the proposed R&D project but are being used for other research the applicant is engaged in, in addition to the pledge, your affiliated organization may be asked to provide information on its understanding of the situation from the standpoint of ensuring that no irrational duplications or extreme convergences are created and that the R&D project can be carried out adequately.

*Including cases where the provision of goods such as research facilities, equipment, or devices or services is received without compensation.

○ Providing information on the contents of an application to prevent irrational duplications and extreme convergences

In order to prevent irrational duplications and extreme convergences, we provide information, within the scope necessary, on part of the contents of an application to the personnel in charge of other competitive funds including other governmental bodies by way of the Cross-ministerial R&D Management System (e-Rad).

4.4 Ensuring research integrity with regard to new risks associated with the internationalization and opening up of research activities

In order to promote the creation of science, technology, and innovation in Japan, it will be necessary to continue to vigorously pursue international collaborative research with diverse partners, with open science as the basic underlying principle. At the same time, in recent years, new risks associated with the internationalization and the opening up of research activities have raised concerns that openness and transparency, the values upon which the research environment is based, may be undermined, and that researchers may become unintentionally ensnared in conflicts of interest or responsibilities. Amid these circumstances, it is essential that Japan establishes a research environment that has international credibility in order to pursue the international cooperation and exchange

which is necessary while also preserving the fundamental values of the research environment.

To that end, based on the “Policy for Ensuring Research Integrity with Regard to New Risks Associated with the Internationalization and Opening up of Research Activities” (decided by Council for Science, Technology and Innovation on April 27, 2021), universities and research institutions, etc. should develop relevant rules and management systems, including for conflicts of interest or responsibilities. It is important for researchers and universities and research institutions, etc. to take independent actions to ensure the soundness and fairness of research (research integrity).

From this perspective, we will confirm that adequate efforts can be ensured along with eliminating irrational duplications of competitive research funds and excessive convergence and ensuring the transparency of research activities, and in addition, inquiries may be made to your affiliated organization as necessary regarding the status of relevant rules and its understanding of the situation.

4.5 Managing unjustifiable use and reception

As for the unjustifiable use and reception funds for implemented problems (referred to as "unjustifiable use" from here), the following applies strictly.

○Measures when an unjustifiable use of research funds is recognized

(i) Canceling contracts and other measures

The R&D agreement will be canceled or altered with respect to the problem in relation to which an unjustifiable use or the like has been recognized. We will demand the entire or partial refund of consignment fees. In addition, we may not renew the contract in the next fiscal year or after.

(ii) Measures to restrict the qualification for application or participation *1

The measures for restricting the qualification for applying to this program or participating in it, or the measures for strict warning, are issued, as shown in the table below, depending on the degree of the unjustifiable act of the researchers *2 who violated the due care of a prudent manager without being recognized or directly

involved with the researchers who engaged in the unjustifiable use of R&D funds from this program (referred to as "the researchers who engaged in unjustifiable use").

In addition, applications and participation may be restricted in other competitive funds, including other governmental bodies by providing a synopsis of the applicable unjustifiable use to the personnel of the other competitive funds, including other governmental bodies. The synopsis would include the name of the researcher who made an unjustifiable use, the title of the project, the organization to which he or she belongs, the problem to be solved by the research, the amount of the budget, the fiscal year of the research, the details of the misconduct, and details of the measures provided.

*1. "Applications and participation" refer to proposing a new task, applying for calls, and making applications to participate in a new research project as a joint researcher group or to participate in ongoing research to solve a problem (continuing problem) as one of the R&D personnel, as a research director or a joint researcher or otherwise.

*2. "The researchers who violated the due care of a prudent manager" refers to the researchers who violated the obligation to advance the program with the due care of a prudent manager even if they are not recognized so much as involved in the unjustifiable use.

<table>
<tr><th>The people within the restriction on an application due to unjustifiable use or reception</th><th colspan="2">The degree of unjustifiable use</th><th>The period to restrict applications *3</th></tr>
<tr><td rowspan="4">The researchers who engaged in unjustifiable use or the researchers conspired to make such use
*1</td><td colspan="2">Private misappropriation for acquiring personal profits</td><td>10 years</td></tr>
<tr><td rowspan="3">2. Other than 1</td><td>① A case whose social influence is large and the viciousness of the act is judged to be high</td><td>5 years</td></tr>
<tr><td>② Other than ① and ③</td><td>2 – 4 years</td></tr>
<tr><td>③ case whose social influence is small and the viciousness of the act is judged to be low</td><td>1 year</td></tr>
<tr><td>The researchers who used other unjustifiable means to receive the competitive funds and the researchers who conspired to do so</td><td colspan="2"></td><td>5 years</td></tr>
<tr><td>The researchers who were not directly involved in the unjustifiable use but violated the duty of the due care of a prudent manager*2</td><td colspan="2"></td><td>Two years at the maximum to one year at the minimum depending on the degree of the violation of the researcher who was obligated to show the due care of a prudent manager</td></tr>
</table>

A strict warning is issued under any of the following conditions without restricting application or eligibility for participation.

*1. In the case of Item 1, the influence over society is minor, the malignancy of the act is minor, and the amount of unjustifiable use is small;

*2. In the case of Item 3, the influence over society is minor, and the malignancy of the act is minor;

*3. The period to restrict applications will, in principle, begin from the fiscal year following the year in which the unjustifiable use was recognized and the research fund was paid back. Qualification for participation is also restricted in the year in which the unjustifiable use was recognized.

(iii) Disclosing unjustifiable cases

In this program, among the researchers who engaged in the unjustifiable use of R&D funds, the researchers who have violated the due care of a prudent manager, and the researchers whose qualification for application and participation in this program is restricted will be, in principle, disclosed by JST in the synopsis of the applicable unjustifiable cases or the like (name of the research institution, name of the project, fiscal year in which the misconduct occurred, details of the misconduct, amount of research funds spent on the misconduct, number of researchers involved in the misconduct, etc.). The researchers will be disclosed by the MEXT.

In addition, according to the "Guidelines for the Management and Audit of Public Research Funds In Research Institutions (practice standards)," if an unjustifiable act is recognized as a result of an investigation, the research institution is supposed to disclose the results of the investigation promptly; each institution is asked to take proper action based on the guidelines.

*For an overview of the unjustifiable cases disclosed on the website of MEXT as of present, access the following website.

https://www.mext.go.jp/a_menu/kansa/houkoku/1364929.htm

4.6 Measures for researchers whose applications and qualifications for participation are

restricted in other competitive funds

The researchers who are restricted due to an unjustifiable use of research funds, including in other competitive research funding systems across different government ministries and agencies, are restricted from making an application or qualifying to participate in this program during the period in which they are restricted from qualification and application in other competitive funds.

"Other competitive funds" include those that start new calls in the fiscal year 2024 or later. The systems that were terminated in the fiscal year 2023 or earlier are also included.

*For the specific systems currently within the scope, access the following website.

https://www8.cao.go.jp/cstp/compefund/ (Competitive funds)

4.7 Measures for violations of relevant laws

When conducting research, if relevant laws and/or ordinances, guidelines apply, there will be consequences and/or punishment based on the applicable laws, ordinances and/or the like, the R&D funds may be suspended, and/or the decision on the distribution of the R&D funds may be canceled.

4.8 Carrying over

In the case that a multi-year contract will continue until the following fiscal year, Carry-overs may be allowed up to the end of the next fiscal year at the latest if it proves difficult to complete the expenditures within the fiscal year because it is unavoidable. It may be due to the difficulty of the investigation before a research test or in the decision on the R&D method, various conditions for plans, the weather, difficulty in procuring materials, or other reasons.

4.9 Cross-ministerial expenses handling partitioned table

In this program, the cost structure is determined based on the cross-ministerial cost categorization table that is to be commonly used for competitive funds. For the handling of costs, please refer to the website including the information of cross-ministerial cost categorization table.

(for universites) https://www.jst.go.jp/contract/moonshot/2022/moonshota.html

(for companies) https://www.jst.go.jp/contract/moonshot/2022/moonshotc.html

In response to the “The 6th Science, Technology, and Innovation Basic Plan”, “Integrated Innovation Strategy 2023, and the “Comprehensive package to strengthen research capacity and support young researchers,” the system for competitive research funding is being improved. Based on this, the project is intended to subsidize a PM and Performer in the payment of personnel cost and costs for delegated work other than research (buyout costs) from direct costs. （※For details, see "3.4.1 Direct costs.）Regarding the payment of a PM and Performer’s personnel cost and costs for delegated work other than research (buyout costs), check the below for requirements and information on procedures.

Furthermore, based on the "Common Guidelines for the Development of Competitive Research Funding Systems from the Perspective of Gender Equality and Talent Development" (agreement of the meeting of ministries and agencies related to competitive research funds, February 8, 2023), this project allows for the expenditure of funds from direct costs towards promoting the development of talents in science and engineering fields who will lead the next generation.

○「競争的研究費の直接経費から研究代表者（PI）の人件費の支出について」（令和 2 年 10 月 9 日）
Expenditure of Personnel Expenses for Principal Investigators (PIs) from the Direct Expenses of Competitive Research Funds" (October 9, 2020)
https://www8.cao.go.jp/cstp/compefund/pi_jinkenhi.pdf
○「競争的研究費の直接経費から研究以外の業務の代行に係る経費を支出可能とする見直し（バイアウト制度の導入）について」（令和 2 年 10 月 9 日）
Revision of the Direct Expenses of Competitive Research Funds to Allow Expenses for Non-research Activities on Behalf of Researchers (Introduction of a Buyout System)" (October 9, 2020).
https://www8.cao.go.jp/cstp/compefund/buyout_seido.pdf

4.10 Diversion of expenses

The amount of funds that can be used for purposes outside the scope of an account title without approval from JST is 50 percent or less of the total direct cost.

4.11 Securing the R&D period until the fiscal year end

JST requires that researchers who have received competitive funds of any kind must complete the tasks listed below in order to continue their JST-funded research until the end of a fiscal year.

(1) JST inspects the completion of the project and the achievements of the research.

(2) Submit a report on the results of the accounting by May 31.

(3) Submit a report on the achievements of the research by May 31.

Each R&D institution should organize the necessary systems at the institution for those practices in order to secure the R&D period that continues at the end of a fiscal year.

4.12 Indirect costs

Institutions receiving indirect costs must, under the responsibility of the head of the research institution, create policies regarding the use of indirect costs and execute them in a planned and proper manner, ensuring the transparency of their use through explanations to researchers, among other means. Proper management of indirect costs must also be performed and receipts and other documents proving the appropriate use of indirect costs must be properly stored for five years from the fiscal year following the completion of the project.

Institutions that receive an allocation of funding for indirect costs must report the actual use of indirect costs for each fiscal year by June 30 of the following fiscal year via e-Rad. (if an R&D institution have acquired two or more competitive funds, report all indirect costs from such competitive funds). If you do not know how to operate e-Rad for reporting, refer to e-Rad Operation Manual (https://www.e-rad.go.jp/manual/for_organ.html) or “Frequently Asked Questions” (https://qa.e-rad.go.jp/)

Due to the revision of the "Common Guidelines for the Execution of Indirect Costs of Competitive Research Funds" (agreement of the meeting of ministries and agencies related to competitive research funds, April 20, 2001), based on accounting standards it has become possible to use accumulated funds for the replacement of depreciated assets, limited to projects financed by funds or operational grants provided to independent administrative legal entities.

4.13 Promotion of sharing research facilities and equipment

According to the "Renovation on the Competitive Research Funds for the Continuous Creation of Research Achievements (Midterm Summary) (Examination Meeting on the Renovation of Competitive Funds, June 24, 2015), it is appropriate that relatively large-scale facilities and equipment that have high general-purpose performance should be, in principle, shared so that original research objectives can be sufficiently accomplished.

Moreover, the 6th Basic Plan for Science, Technology, and Innovation (March 26, 2021, Cabinet decision) and the Integrated Innovation Strategy 2023 (May 9, 2023 Cabinet decision) call for the promotion of the development and shared use of research equipment and facilities, the establishment of a system for implementing, upgrading, and utilizing systematic research equipment and facilities (development of core facilities), and the formulation and publication of shared-use policies.

The Ministry of Education, Culture, Sports, Science and Technology formulated the “Guidelines for Promoting the Shared Use of Research Facilities and Equipment” in March 2022, aiming to further strategic development, operation, and shared used of research facilities and equipment at universities, etc.

R&D institutions must endeavor to share the particularly large and general-purpose-performance research facility/equipment purchased for this program as long as it is within the scope of research and does not present obstacles to applicable research projects. This applies to research facility/equipment purchased with other research funds and for purchasing/sharing them; a total of two or more research funds based on what is stated above within the scope of the management conditions of other research funds. And when doing so, in order to strengthen research capabilities through the utilization of the latest research facilities and equipment, it is important to consider further shared use with the awareness that it is possible to do so even when the project has already started. Note the necessity to maintain a balance between the management of shared equipment/facility and the use for the achievement of the research objectives of an applicable research project.

Moreover, endeavor to cooperate with the "University Collaboration and Research Facility Networking Project," implemented for the nationwide mutual usage of the facilities by

National Institutions of Natural Sciences, as well as the “Program for supporting introduction of the new sharing system” and “Program for supporting core facilities” used by universities to promote the joint use of research facilities and equipment beyond the framework of research organizations and R&D institutions.

- "Renovation on the Competitive Research Funds for the Continuous Creation of Research Achievements (Midterm Summary)" (Examination Meeting on the Renovation of Competitive Funds, June 24, 2015)
  https://www.mext.go.jp/b_menu/shingi/chousa/shinkou/039/gaiyou/1359306.htm
- ”6th Basic Plan for Science, Technology, and Innovation”(March 26, 2021 Cabinet Decision)
  https://www8.cao.go.jp/cstp/kihonkeikaku/6honbun.pdf
- “Integrated Innovation Strategy 2023” [Cabinet decision (June 9, 2023)]
  https://www8.cao.go.jp/cstp/tougosenryaku/togo2023_honbun.pdf
- About unifying the rules for various office procedures of competitive funds” (Agreed upon by the coordination committees of relevant ministries and agencies on competitive funds, revised on May 24, 2023)
  https://www8.cao.go.jp/cstp/compefund/toitsu_rule_r50524.pdf
- Purchase of shared facilities under multiple research funding systems (combined use) （Agreed upon by funding agencies and relevant ministries and agencies, September 10, 2020）
  https://www.mext.go.jp/content/20200910-mxt_sinkou02-100001873.pdf
- ”Guidelines for Promoting the Shared Use of Research Facilities and Equipment” (formulated in March 2022)
  https://www.mext.go.jp/content/20220329-mxt_kibanken01-000021605_2.pdf
  https://youtu.be/x29hH7_uNQo
- "University and College Cooperation Research Facility Network Project"
  https://chem-eqnet.ims.ac.jp/
- “Program for supporting introduction of the new sharing system”” Program for supporting core facilities”
  https://www.jst.go.jp/shincho/program/pdf/sinkyoyo_brochure2020.pdf

4.14 Improving the treatment of doctoral students

The “6th Science, Technology, and Innovation Basic Plan” (determined by the Cabinet on March 26, 2021) sets out the numerical target of tripling the current number of students in the second half of their doctoral course who receive payment equivalent to living expenses (around 30% of students in the second half of their doctoral course are granted an amount roughly equivalent to living expenses) in order to enhance economic support for graduate students, especially students in the second half of their doctoral course, so as to attract excellent students and mature students from within Japan and overseas. It states, “in order to promote the payment of salaries to doctoral students at an appropriate level as a research assistant (RA) from competitive research funds and joint research funds, the government will formulate rules for the payment of RA expenses relating to employment and remuneration for RAs at each R&D program and university, and implement them sequentially from FY2021,” and demands wider employment and improved treatment of doctoral students as RAs, etc., in each university and R&D organization.

The “Guideline for the Employment and Education of Post-Doctoral Researchers” (Committee on Human Resources, the Council for Science and Technology, December 3, 2020) states that “Postdoctoral course students are also researchers in a sense, and therefore ensuring an environment and support system suitable for them is an important duty of the universities nurturing them,” “it is especially important to set rewards according to the nature and contents of their work, pay them salaries according to their work hours under an appropriate work management and appropriately assess their research contribution,” and “it is necessary at universities and other institutions that an proponent for a competitive research funding can request the subsidization of research assistant (RA) employment cost as a direct cost and also to review school provisions so that appropriate rewards are provided to RAs.”

Based on these, it is recommended that doctoral course students necessary for implementing R&D in the project be proactively employed as RAs, unit prices be set according to the nature and contents of their work and their salaries be paid according to work hours under an appropriate work management. When applying for this program,

you should include the amount of salary paid to these doctoral students in the financial planning.

- In the 6th Science and Technology Basic Plan, an annual salary of JPY 1.8 million is reasonable for covering living expenses, as well as the research incentive allocated to the researcher in the Research Fellowship for Young Scientist (DC) to allow outstanding Ph.D. students to concentrate on their research without feeling financial anxiety.
- Regarding the treatment of post-doctoral students for implementing the research project, the "Guideline for the Employment and Education of Post-Doctoral Researchers" states that "considering the average salary of specially appointed assistant professors employed through competitive research funds, an hourly payment of 2,000 to 2,500 yen* should be the standard salaries of such students."
  *In view of the average salary of specially appointed assistant professors employed through competitive research funds, it is conceivable that a payment of 2,000 to 2,500 yen an hour will become standard for doctoral students in the second half of their course. (In the "Employment Status of Instructional Staff at 18 Research Universities (quick summary edition)" published in August 2020, the average monthly salary of specially appointed assistant professors was in the 400,000–450,000 yen range. These figures were divided by the working hours (7 hrs. 45 min to 8 hrs.) of actual working days (19 to 20), excluding holidays, etc., then, considering the status of second-half doctoral-course students, this was multiplied by 0.8.)
- The actual amount of salary and payment period will be decided by the R&D institution. It does not limit payment above or below the above levels.
- When hiring students as RAs, etc., you need to avoid excessively long working hours and consider the balance between the work and study/learning time of doctoral students.

4.15 Ensuring self-sustaining, stable research environment for young researchers

The "Guidelines for Hiring and Training of Postdocs, etc." (Council for Science and Technology Human Resources Committee, December 3, 2020) state that although there

are many postdocs whose tenure is less than 3 years, too short a tenure can hinder career development, so it is necessary to secure a tenure that allows postdocts to concentrate on their research activities for a certain period of time, and that considering that it is desirable for postdocs to get experience at one or two locations, and then move on to the next stage by their mid-30s, in which tenure changes from 3 years to 7 years, ideally each post should have a tenure between 3 and 5 years.

In regard to national university corporations and inter-university research institute corporations, “Guidelines for reform of personnel and salary management in national university corporations, etc. -Toward building attractive personnel and salary management effective for improving education and research capabilities-" (Ministry of Education, Culture, Sports, Science and Technology, February 25, 2019) states ”To meet two requirements, “fostering young teachers and securing stable employment,” it is desired to promote an institutional design which takes into account the development of researchers while maintaining mobility, for example, by securing a certain period of employment, in the order of 5 to 10 years, even in fixed-term posts using highly flexible expenses such as indirect costs or donations.”

Based on these points, when the project in this program hires young researchers such as research assistants or postdocs, a certain period of employment (5 years or more) should be ensured as much as possible with an attempt to secure the period up to the stage-gate as the length of term by using external funds including indirect costs, basic research funds and donations, etc. while making confirmation with the personnel and accounting staff at the administrative departments.

4.16 The Promotion of Efforts towards Gender Equality and Talent Development

In line with the " Science and Technology Basic Plan (Cabinet decision on March 26, 2021)," the "Basic Plan for Gender Equality (Cabinet decision on December 25, 2020)," and the "Policy Package for Education and Talent Development towards the Realization of Society 5.0 (Council for Science, Technology, and Innovation decision on June 2, 2022)," efforts are being made to create research environments that facilitate the continuation of research activities by both men and women even in the event of life events such as childbirth, childcare, and caregiving, and to promote the appointment of outstanding female researchers as project leaders. Additionally,

initiatives to convey the appeal of science and technology to female junior and senior high school students, including parents and teachers, are aiming to increase the percentage of women advancing to master's and doctoral programs in science and and technology fields, overcoming the current situation where the rate of women advancing to doctoral programs in natural sciences is low, thereby increasing potential bearers of knowledge in Japan.

If gender differences are not considered in R&D processes where they should be, it could lead to unsuitable results at the social implementation stage. Therefore, R&D development must be conducted in consideration of gender differences, such as differences in physique and the structure and function of the body.

Based on these considerations, efforts must also be made in the project to promote the active participation of female researchers and to expand the base of future talents in science and technology.

- R&D that does not consider gender differences, such as differences in physique and the structure and function of the body, might result in unsuitable results during societal implementation. Therefore, these efforts should be conducted with consideration of gender differences.

- Expenses related to science, physics, chemistry, etc., classes or outreach lectures at elementary, junior high, and high schools conducted online by doctoral degree holders in science and technology fields can be covered as direct costs.

- Expenses for distributing research results in a format easily understandable by junior and senior high school students via social media, etc., can also be covered as direct costs.

- It is possible to include achievements of the above two outreach activities in research reports. These will be eligible for a positive evaluation. Plans related to the above can also be included in research proposals and will be eligible for positive evaluation during the review.

4.17 Voluntary research activities of young researchers employed for implementing the project

On the basis of the “Policies for the Voluntary Research Activities of Young Researchers Employed for the Implementation of the Project with Competitive Research Funds” (policies concerning competitive research funds—policies agreed to at a liaison meeting

of related ministries and agencies, revised on December 18, 2020), when an affiliation of an R&D Principal Investigator (PI) judges that young researchers employed from the budget of the R&D project should conduct voluntary research activities to contribute to the improvement of their own research and management capabilities, and that such activities will not become an obstacle to the promotion of the project, part of their efforts regarding the project can be allocated for the activities and their personnel cost regarding the activities can also be refunded from the budget.
Please see below for details.

○ "Implementation Policy for Voluntary Research Activities of Young Researchers Employed for Projects in Competitive Research Funds" [Agreement among ministries and agencies related to competitive research funds (Revised on December 18, 2020)]
https://www8.cao.go.jp/cstp/compefund/jisshishishin.pdf

4.18 Supporting various career paths for young researchers

One of the goals of the 6th Basic Plan for Science, Technology, and Innovation (March 26, 2021, Cabinet decision) is to create an environment in which excellent young people can envision career paths that will enable them to play an active role not only in academia, but also in a wide range of fields such as industry or the government. In addition, the “Guidelines for Hiring and Training of Postdocs, etc.” (Council for Science and Technology Human Resources Committee, December 3, 2020) states that efforts to diversify career paths after the postdoctorial period are important, and that it is essential for doctoral candidates with advanced expertise and superior research skills to play an active role in a variety of fields including venture companies and global corporations, and to create innovations.

Based on the understanding of these circumstances, when the R&D project, adopted by this program, employs young researchers such as special-appointment or post-doctoral researchers with allocated public research funds (competitive funds, other project research funds, or public research funds for universities), special efforts for supporting these researchers to obtain diverse carrier paths are requested. Use of indirect costs for these efforts may be considered.

- Include in the proposal an action plan for supporting diverse career paths for young researchers employed with public research funds ("Career Support Action Plan") (for example, recommending participation in lectures conducted in collaboration with companies, long-term internships, networking events with companies, counseling, and active participation in research activities including in different fields). The Career Support Action Plan will be checked during the selection process.
- The expenses necessary for the development of young researchers' abilities are considered fundamental expenses that support research activities. Based on this perspective, a portion of activities of young researchers that are part of the Career Support Action Plan outlined in the proposal can be incorporated within the research effort.
- During mid- and post-term evaluations, report the status of initiatives based on the Career Support Action Plan and the career paths of young researchers after the end of their time on the project. This content is also eligible for positive evaluation.

  In evaluations, if young researchers participate in initiatives (e.g., lectures conducted in collaboration with companies, long-term internships, networking events with companies, counseling) conducted by public research institutions (including public research institutions other than the employer institution), in a manner that doesn't impact their research activities, this participation will be considered an initiative in place of direct career support by the research representative and is eligible for positive evaluation.

4.19 Securing URAs and other management personnel

The 6th Basic Plan for Science, Technology, and Innovation (March 26, 2021, Cabinet decision) points out that efforts to ensure the quality of the professional duties of university research administrators (URAs) and other management personnel and to improve their treatment are important so that they will become attractive positions. The "Comprehensive package to strengthen research capacity and support young researchers" (Council for Science, Technology, and Innovation January 23, 2020) also indicates the need to establish career paths for management personnel, URAs, engineers, and other human resources.

In light of the above points, when management personnel such as URAs, employed or newly employed by the research institution, engage in the management of the research program of

this project, the research institution is encouraged to secure a contract period for these personnel that is the same as the research period and is not limited to this project. You are also encouraged to strive to ensure a certain length of employment by utilizing indirect costs from other external funds, foundational expenses, donations, etc., and prevent the employment period from being short-term wherever possible.

In addition, we ask that proactive efforts be made to support the career paths of these management personnel by having them participate in URA training, etc. Furthermore, please consider utilizing indirect cost for these efforts.

4.20 Secure trade control (managing technology leaks overseas)

At R&D institutions, many kinds of state-of-the-art technology are studied. Especially in universities and colleges, internationalization has increased the number of international students and researchers from foreign countries, which has increased the risk of leaking advanced technology, research materials, and research equipment. These entities may increasingly be used viciously for the development or production of weapons of mass destruction. Therefore, for R&D institutions to advance each type of research activity, including applicable R&D, R&D institutions must organize their management so that R&D results that may be used for military purposes cannot be transferred to parties, such as developers of weapons of mass destruction and terrorist groups, that may engage in suspicious activities.

In Japan, trade is controlled (*1) based on the Foreign Exchange and Foreign Trade Act (law No. 228, 1949, referred to as the "Foreign Exchange Act" from here). Therefore, in principle, it is necessary to acquire permission from the Minister of Economy, Trade, and Industry in order to export (provide) freight or technology under the restriction of the Foreign Exchange Act. Observe the Foreign Exchange Act and other national laws and ordinances, guidelines, and notifications. If research is conducted in violation of relevant laws, ordinances, guidelines, and/or the like, it will be subject to consequences and/or punishment based on the applicable laws and/or ordinances and/or the like; the R&D funds may be suspended and/or the decision on the distribution of the R&D funds may be canceled.

*1 Currently, Japan’s security export control system is based on international

agreements and the like and consists mainly of: (i) the system (list system) that requires permission from the Minister of Economy, Trade, and Industry, in principle, in order to export (provide) freight (technology) that has a certain level of specifications and/or functions, such as carbon fiber and numerically controlled machine tools; and (ii) the system (catch-all control) that requires permission from the Minister of Economy, Trade, and Industry if certain requirements (for purposes, consumers, or information) are satisfied for the export (provision) of freight (technology) not included in the list.

The Foreign Exchange Act covers not only the export of goods, but also the providing of technology. Prior permission is required for providing any list-regulated technologies to a non-resident (this includes residents who fall under the specified type (*2)), or for any provision which takes place outside of Japan.Providing technology here includes providing work knowledge by way of technical guidance, skill training, and technical support at seminars; it includes using paper, email, CDs, DVDs, and USB memories as storage media to provide designs, specifications, manuals, specimens, test products, or other technical information. Accepting international students from foreign countries and activities for joint research may include many technical exchanges that may be subject to the Foreign Exchange Act. Please be aware that the provision of technology acquired through this project, or the provision of technology already possessed as a result of utilizing this project, may also be subject to regulation.

*2 Refers to a type of resident who is strongly influenced by a non-resident, specifically the type stipulated in “Regarding transactions or acts to provide technology that require permission pursuant to Article 25, Paragraph 1 of the Foreign Exchange Act and Article 17, Paragraph 2 of the Foreign Exchange Order” 1. (3) サ ①-③.

In addition, in accordance with the Foreign Exchange Act, when exporting list-regulated goods or providing list-controlled technology to a foreign country as a business, it is necessary to establish a system for security export control（*3）.

For this reason, by the time of contract conclusion, it may be necessary to verify through the Cross-Ministerial Research and Development Management System (e-Rad) whether the provision of goods or technology that falls under the export control of the Foreign Exchange Act is planned as part of this project, and if there is an intention to provide such goods or technology, whether a management system is in place. If there is an intention to provide

goods and technologies, and no management system exists, the establishment of such a system will be required by the time of provision or the end of this project, whichever is sooner. The status of the confirmation may be reported to the Ministry of Economy, Trade and Industry upon its request. In addition, the contract may be cancelled in whole or in part if any violation of regulations related to the Foreign Exchange and Foreign Trade Act is found with regard to the technology and other components acquired through this program. (*4)

*3 Exporters, etc. are obligated to comply with the standards of compliance for exporters, etc. stipulated in Article 55-10, Paragraph 1 of the Foreign Exchange Act. In addition, the security export control system here refers to the internal control system of an organization to pre-emptively prevent unauthorized exports, etc. by appropriately exporting list-regulated goods or providing list-regulated technology to foreign countries based on the control system in the standards of compliance for exporters, etc.

4.21 The strict implementation of United Nations Security Council Resolution

In light of North Korea's September 2016 nuclear test and successive ballistic missile launches, on November 30, 2016 (local time, New York), the United Nations Security Council (hereinafter the "Security Council") adopted Security Council Resolution 2321, which imposed additional and stronger sanctions on North Korea. In connection to this, on February 17, 2017, MEXT issued the "(Request for the) Strict Implementation of United Nations Security Council Resolution 2321," (28 受文科際第 98 号) to all relevant institutions.

According to section 11 of the text of this resolution, "Science and Technology Cooperation" is not limited to technology that is restricted by the Foreign Exchange Act—it includes all cooperation, with the exception of cooperation that aims for medical exchange, and it is important that R&D institutions pay attention to the strict implementation of this resolution when carrying out different research activities, including applicable consigned research.

For more information on Security Council Resolution 2321, see the following:

○ Ministry of Foreign Affairs: United Nations Security Council Resolution 2321, Japanese

translation (Notification no. 463 of the Ministry of Foreign Affairs (issued December 9, 2016))
https://www.mofa.go.jp/mofaj/files/000211409.pdf

4.22 Promoting dialog with society and collaboration

According to "About the Promotion of 'Science/Technology Dialog with Citizens'" (Guideline for Basic Endeavors; decision by the minister of science and technology policies and the members of Diet with expertise, June 19, 2010), the attitude in which the excellent achievements of science and technology are constantly produced and the achievements of science and technology should be returned to our citizens to further develop science and technology in our country. If your proposal is adopted in this call and you accept 30 million yen or more of public funds a year per project (competitive or project research funds), You are asked to take a positive attitude toward the activities of this program, including the lecture sessions for citizens on research achievements, the continuous distribution of information on research achievements at the symposiums and over the internet, and at the roundtable conferences involving a variety of stakeholders.

(Informative) Promoting "Science/Technology Dialog with Citizens" (principles for basic measures)https://www8.cao.go.jp/cstp/stsonota/taiwa/taiwa_honbun.pdf

Furthermore, the "Sixth Science, Technology and Innovation Basic Plan" (Cabinet decision on March 26, 2021) calls for the co-creation of knowledge through the participation of diverse entities, including public engagement, and the strengthening of science and technology communication. Examples of platforms provided by JST for “bidirectional dialogue and collaboration in a bidirectional among diverse entities” include the following.

- Science Agora
  https://www.jst.go.jp/sis/scienceagora/
- The National Museum of Emerrging Science and Innovation
  https://www.miraikan.jst.go.jp/en/

4.23 Open access and data management plan

JST announced the basic policy for handling R&D achievements towards the promotion of open science in April 2017, and Revised April 2022. The policy covers the basic concepts for allowing one's access to papers on R&D achievements and archiving, as well as on managing and disclosing R&D data.

Researchers participating in Moonshot R&D projects are required, in principle, to make their research papers publicly available through institutional repositories and open-access publications, and particularly for peer-reviewed papers, to ensure they are made public within 12 months. Additionally, taking into account the data policy of the research institutions, a Data Management Plan should be created that outlines the policies and plans for the storage, management, and publication (or non-publication) of research data generated as a result of research activities (*1), and submitted to JST along with the research proposal. Research activities must be conducted following this plan, including the storage, management, and publication of research data. It is also possible to modify this plan during the course of conducting research. Furthermore, for research data, particularly data subject to management as defined in the data management plan, researchers are required to assign metadata (*1) as indicated by JST. Managed data with assigned metadata should be properly cataloged in the institutional repository designated by each research institution or in the Research Data Cloud operated by the National Institute of Informatics or similar.

For more details, please refer to the following:

Please see the following for details:

○ JST Policy on Open Access to Research Publications and Research Data Management：
https://www.jst.go.jp/all/about/houshin.html#houshin04

○ Implementation Guideline: JST Policy on Open Access to Research Publications and Research Data Management:
https://www.jst.go.jp/pr/intro/openscience/guideline_openscience_r4.pdf

（※１）DMP に記載すべき項目、及びメタデータ項目については本ガイドラインに記載。

○公的資金による研究データの管理・利活用（内閣府）

https://www8.cao.go.jp/cstp/kenkyudx.html

・公的資金による研究データの管理・利活用に関する基本的な考え方

（統合イノベーション戦略推進会議）

https://www8.cao.go.jp/cstp/tyousakai/kokusaiopen/sanko1.pdf

・「公的資金による研究データの管理・利活用に関する基本的な考え方」におけるメタデータの共通項目（2023 年 3 月 31 日時点）

https://www8.cao.go.jp/cstp/common_metadata_elements.pdf

JST analyzes statistic data including the number of data modules, types of data, types of publication and place of data storage aiming for the confirmation of information in the data management plan, support of researchers, and feedback to the basic policy (revision). The analyzed data is released to the public but the data available for tracing personal information such as name is strictly held back.

＊ For the bioscience data, also see “4.23 Open data from the Bioscience Database Center”.

4.24 Open data from the Bioscience Database Center

Life Science Database integration Coordination Program（https://biosciencedbc.jp/）implemented by the JST Bioscience Database Center (NBDC) promotes the integrated use databases in the field of life sciences which have been created by various research institutions, etc.

According to "The Progress of the Project to Promote the Integration of the Life Science Database and Its Orientation in the Future" (January 17, 2013), the center, as a leader, is supposed to expand the applicable projects to use the data and database.

You are asked to cooperate with us in the disclosure, from the center, of the following types of data and databases that may be collected from this program as related to the field of life science.

No.	Type of the data	Disclosed to	URL for Disclosure
1	Overview of the Database Constructed for Disclosure	Integbio Database Catalog	https://integbio.jp/dbcatalog/

No.	Type of the data	Disclosed to	URL for Disclosure
2	Recorded data in the constructed database for public use	Bio Science Database Archive	https://dbarchive.biosciencedbc.jp/
3	The ones related to human beings from Item 2	NBDC Human Database	https://humandbs.biosciencedbc.jp/

4.25 Guidelines for writing acknowledgements

When publishing the research results from this program, please indicate that you have received our fund. Please include "[Moonshot R&D Program] Grant Number [10 digits (JPMJMS + 4 digits of project number)] in the Acknowledgment of the paper. Example of Acknowledgement in English is as follows:

This work was supported by JST [Moonshot R&D Program] Japan Grant Number [JPMJMSxxxx].

* If such results are made with multiple funding programs, please indicate all program names and systematic numbers. Grant number will be provided at the time of adoption.

4.26 Research support service partnership certification system（A-PRAS）

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) established the “Research Support Service Partnership Certification System” in FY2019. This system, in which the MEXT Minister certifies private businesses’ services that satisfy certain requirements, is intended to improve the research environment, promote scientific technologies, accelerate the creation of innovations and support various efforts for research support services in Japan. As of April of 2023, there are multiple certified services including those related to finding co-researchers, publicizing and commercializing research results, and procuring research funds or equipment. Please make use of these diverse services.

For details of the certified services, see the following website. Please utilize these services.

https://www.mext.go.jp/a_menu/kagaku/kihon/1422215_00001.htm

4.27 Matters Related to Competitive Research Funding Reform

Currently, the government is discussing institutional improvement of competitive research funds for more effective and efficient use of R&D costs based on “The 6th Science, Technology, and Innovation Basic Plan”, “Integrated Innovation Strategy 2023” and “Comprehensive package to strengthen research capacity and support young researchers.” If the government indicates a policy for the institutional improvement and operation common to other competitive funding program during the open call period, we will inform you when applying the policy to the open call and operation.

4.28 Guidelines for the management and audit of public research funds in research institutions (practice standards)

(1) Organize the institution according to the "Guidelines for the Management and Audit of Public Research Funds in Research Institutions (practice standards)"

R&D institutions, etc. that are applying to this program and researchers need to observe the contents of the "Guidelines for the Management and Audit of Public Research Funds at Institutions (standard for implementation)" (revised on February 1, 2021)

R&D institutions, etc. must try to properly execute the research funds by organizing a system for managing and auditing the research funds under their responsibility based on the guidelines mentioned above. As a result of the investigation of the status of the organization based on the guidelines, if MEXT recognizes a fault in the relevant status of an institution, then the measures for reducing its indirect cost from all the competitive funds distributed by MEXT or an incorporated administrative agency under the jurisdiction of the MEXT may be taken with respect to the applicable institution.

* For "Guidelines for the Management and Audit of Public Research Funds in Research Institutions (practice standards)," access the following MEXT’s website.
https://www.mext.go.jp/a_menu/kansa/houkoku/1343904_21.htm

(2) "Self-evaluation Checklist for Structuring Organizations" based on "Guidelines for the Management and Audit of Public Research Funds in Research Institutions (practice standards)"

Upon contracting for this project, each research institution is required to establish a management and audit system for research funds based on the indicated guidelines, and to respond and submit a Self-Evaluation Checklist for System Establishment, etc. (hereinafter referred to as “Checklist”) to provide a report on the status of the system. (Contracts will not be permitted without answering and submitting the Checklist.)

Therefore, after April 1 of 2024, please check the content on the MEXT website and answer and submit of the Checklist according to the information provided on the website before concluding the commissioned research contract.

Institutions that have submitted the Checklist for FY2023 are allowed to contract regardless of the above, but must proceed with answering and submitting the FY2024 version of the Checklist by December 1, 2024.

Procedures related to answering and submitting the Checklist must be continuously carried out during the period in which the institution is managing the funds allocated for competitive research grants, among others, received from JST.

Institutions that do not receive competitive research funding from MEXT or independent administrative legal entities under the jurisdiction of MEXT are not required to answer or proceed with the Checklist.

For more details on this matter, please refer to the MEXT website.

https://www.mext.go.jp/a_menu/kansa/houkoku/1324571.htm

*The website mentioned above contains information for the FY2023 version of the Checklist, so for details regarding the FY2024 version of the Research Misconduct Checklist, please check the MEXT website after April 1, 2024.

4.29 Guidelines for responding to misconduct in research

(1) Structure organizations based on the "Guidelines for Responding to Misconduct in Research"

The R&D institutions etc., in applying for this program and implementing research activities must observe the "Guidelines for Responding to Misconduct in Research" (decision, Minister of Education, Culture, Sports, Science, and Technology, August 26, 2014)*1.

As a result of an investigation into the status of an organization based on the

guidelines mentioned above, if MEXT recognizes an error in the status of the applicable institution, then measures for reducing the indirect cost of the competitive funds distributed by the MEXT or an incorporated administrative agency under the jurisdiction of MEXT may be taken against the applicable institution.

*1. For the "Guidelines for Responding to Misconduct in Research," access the following MEXT's website.

https://www.mext.go.jp/b_menu/houdou/26/08/1351568.htm

(2) Submitting a checklist on the status of the endeavors based on the "Guidelines for Responding to Misconduct in Research"

To enter into a contract in this program, the R&D institutions must submit a checklist on the status of their endeavors based on the "Guidelines for Responding to Misconduct in Research" (referred to "research misconduct checklist" from here). They will not be allowed to implement research until the research misconduct checklist has been submitted.

After April 1, 2024, please check the content on the website, download the form for the FY2024 version of the Research Misconduct Checklist from e-Rad, fill in the necessary information, and submit it to the Research Integrity Promotion Office, Research and Development Infrastructure Division, Science and Technology Policy Bureau of MEXT through e-Rad before concluding the commissioned research contract.

Further, you do not need to apply if your organization is not engaged in research activities or if it is engaged in such activities but does not accept funds from the MEXT or an incorporated administrative agency under the jurisdiction of MEXT.

For details on how to submit a research misconduct checklist, access the website of MEXT.

https://www.mext.go.jp/a_menu/jinzai/fusei/1420301_00001.html

*The website mentioned above contains information for the FY2023 version of the Checklist, so for details regarding the FY2024 version of the Research Misconduct Checklist, please check the MEXT website after April 1, 2024.

(※1) Your institution must make e-Rad available. Note that it normally takes about two weeks to register. For details on the procedure for using e-Rad, access the

following website.
https://www.e-rad.go.jp/organ/index.html

(*2) Institutions conducting research activities with budget allocations or measures received from MEXT or independent administrative legal entities under the jurisdiction of MEXT must submit the Research Misconduct Checklist every year by September 30 (or the preceding business day if September 30 falls on a weekend or public holiday) during the period they are conducting such research activities.

(3) Measures for research activity misconduct based on the "Guidelines for Responding to Misconduct in Research."

Strict measures will be taken, as stated below, if any misconduct is performed during research activities in this program.

(i) Canceling contracts and other measures

If a specific type of misconduct (forgery, falsification, or theft) is recognized in an R&D subject in this program, the R&D agreement will be canceled or altered depending on the case. We will demand a whole or partial refund of the R&D funds. In addition, we may not enter into a contract in the next fiscal year or after.

(ii) Measures to restrict the qualification for application or participation

We will take measures to restrict the qualification for application and participation in this program, as stated in the table below, depending on the viciousness of specific types of misconduct and the degree of the responsibility of the parties involved in the misconduct and the parties recognized as having a certain degree of responsibility because of their obligation to use caution with the applicable papers, reports, and the like even if they were not directly involved in research papers, reports, etc. in this program.

In addition, if measures for restricting the qualification for application or participation are taken, the qualification for application and participation may be restricted in the same manner in the competitive funds of the other MEXT and the

competitive funds of the other governmental bodies; the information will be provided to the personnel of the competitive funds distributed by MEXT and the incorporated administrative agencies under the jurisdiction of the MEXT (referred to as "the competitive funds in relation to the MEXT" from here). It will also be reported to the personnel of the competitive funds distributed by other governmental bodies and the incorporated administrative agencies under their control (referred to as "the competitive funds of other governmental bodies" from here).

(*) "Application and participation" refers to proposing and applying for new research topics, participating in new research as a co-researcher, or participating as a research representative or co-researcher in ongoing research projects (continuing projects).

<table>
<tr><th colspan="3">Persons restricted from application due to a specific type of misconduct</th><th>The degree of the specific type of misconduct</th><th>The period of restricted applications *</th></tr>
<tr><td rowspan="2">The person involved in a specific type of misconduct</td><td colspan="2">1. The person’s misconduct is especially vicious; for example, if he or she intended to perform misconduct from the beginning of the research project</td><td></td><td>10 years</td></tr>
<tr><td>2. The author of the paper or the like in relation to the research in which a specific type of</td><td>The author who takes responsibility for the applicable paper or the like (the supervisor, representative for the</td><td>The influence over the development of the research in the applicable field and/or the social influence are significant, and the viciousness of the act is judged to be high</td><td>5 – 7 years</td></tr>
</table>

	misconduct occurs	authors, or the person with responsibility equivalent to the above-mentioned person)	The influence over the development of the research in the applicable field and/or the social influence are insignificant, and the viciousness of the act is judged to be low	3 – 5 years
		The authors other than the above		2 – 3 years
	3. The persons involved in a specific type of misconduct excluding 1 and 2 above			2 – 3 years
The author who takes responsibility for the paper related to the research in which a specific type of misconduct is performed even though he or she is not involved in the misconduct (the person responsible for supervision, the representative of the authors, or the person who is recognized as having responsibility equivalent to the above-mentioned persons)			The influence over the development of the research in the applicable field and/or the social influence are significant, and the viciousness of the act is judged to be high	2 – 3 years
			The influence over the development of the research in the applicable field	1 – 2 years

	and/or the social influence are insignificant, and the viciousness of the act is judged to be low	

* The period of restricted applications will, in principle, begin from the fiscal year following the year in which the specific type of misconduct is recognized to have taken place. The qualification for participation is also restricted in the year when the misconduct is recognized.

(iii) Measures for researchers whose applications and qualifications for participation are restricted from other competitive funds and in fundamental costs.

For the researchers whose applications and qualifications for participation are restricted due to misconduct in research activities, the application and qualification for participation in this program are restricted for the same duration as that of the competitive funds of the MEXT, a grant for the operation cost of national university corporations, inter-university research institution corporations, and the independent administrative agencies under the control of MEXT, the fundamental cost from the subsidies to private educational institutions, or the competitive funds of other governmental bodies.

"Other MEXT-related competitive research funding systems, etc." and "competitive research funding systems related to other ministries and agencies" include systems that will start new public calls for proposals from FY2024 onwards. This also applies to systems that ended before FY2023.

(iv) Disclosing misconduct cases

If there is any misconduct in research activities uncovered in the project, JST will in principle disclose information about the case, etc. (name of misconduct case, type of misconduct, project name, summary of the misconduct case, measures taken by JST, etc.). Furthermore, MEXT will also in principle disclose information about the project (name of

misconduct case, type of misconduct, research field of the misconduct case, name of the expense under which the misconduct occurred, summary of the misconduct case, measures taken by the research institution, measures taken by the funding agency, etc.)

In addition, according to the above-mentioned guideline, if some misconduct is recognized, the R&D institutions etc. that manage the R&D are supposed to disclose the result of the investigation promptly; each institution is asked to take proper action based on the guideline.

https://www.mext.go.jp/a_menu/jinzai/fusei/1360483.htm

4.30 Obligation to complete research and ethics education and compliance courses

The researchers who participate in an R&D subject of this program are supposed to take the research ethics education to prevent misconduct in their research activities, as required in the "Guidelines for Responding to Misconduct in Research." They must also complete compliance education courses, as required in the "Guidelines for the Management and Audit of Public Research Funds in Research Institutions."

During the procedure for reaching an R&D agreement, which comes after a proposed research challenge is adopted, the research director needs to submit a document to the effect that the researchers and all other participants of the research challenge in Moonshot R&D have taken research ethics and compliance education courses and understood the content.

4.31 The handling of information on e-Rad

The information on e-Rad about specific adopted projects (the title of the project, the title of the research challenge, the name of the R&D organization, the name of the person in charge of the R&D, the amount of the budget, the period of the implementation, and the overview of the problem) is handled as "the information that is supposed to be published" as defined in Article 5, Item 1-a in the "Act on Access to Information Held by Independent Administrative Agencies" (law No. 140, 2001). This information will be published appropriately after adoption not only on the project's webpage but also on the JST Project Database (hereinafter "PDB," https://projectdb.jst.go.jp/) and the Integrated Research Project Search (GRANTS, https://grants.jst.go.jp/). Moreover, research outcome reports and

other documents submitted by researchers, which are eligible for public release, may be published on the PDB.

4.32 Providing information from e-Rad to the Cabinet Office

The 6th Basic Plan for Science, Technology, and Innovation (March 26, 2021 Cabinet decision) notes that in science, technology, and innovation administation, the EBPM of policy formulation based on objective evidence will be carried out in all relevant ministries and agencies. The information registered to e-Rad will be used for the appropriate evaluation of R&D with national funds, effective, efficient, and comprehensive strategies, proposals for planning, and the principles for distributing resources.

Therefore, it is asked that information on research and accounting results in each fiscal year of the adopted problems be registered to e-Rad.

The information necessary for macro-analysis is provided to the Cabinet Office; it should include information on research and accounting results. If it is difficult to register individual research outcome information and accounting performance information of each research director or program representative on e-Rad, JST may provide that information to the Cabinet Office.

4.33 Registering researcher information to researchmap

Researchmap (https://researchmap.jp/) is a database of researchers in Japan with over 300,000 registrations, allowing for the management and publication of performance information. In addition, researchmap is lined to e-Rad and educator databases at universities. It enables registered information to be used in other systems; therefore, researchers do not need to register the same achievements repeatedly in written declarations and databases.

The information registered to researchmap is effectively used to instigate and check the statistics of proposals for the academic and science and technology policies of the national government. The participants in this program are asked to cooperate and proactively register information to researchmap.

4.34 Patent applications by JST

If an invention or the like is not turned into a right by the R&D institution, JST may do so. Therefore, if the R&D institution does not expect to turn an invention or the like into a right, we want the researcher to submit a quick report of the information on the applicable invention or the like to JST in any form. ("The information on the applicable invention" stated above refers to the information necessary for JST to judge whether the application is suitable to become a right; it could include a copy of the invention notification used by the R&D institution.)

Based on the received report, JST will deliberate on whether the invention should be turned into a right. If it is judged that JST can apply the invention or the like, the R&D institution and JST will make another contract, "Agreement to Transfer the Right to Acquire a Patent."

*Regarding the Non-Publication System for Patent Applications:

The patent system is designed to promote further technological improvements and prevent redundant research and development by uniformly disclosing inventions that have been applied for patents, as well as grant of patent rights. Before the establishment of the non-publication system for patent applications, Japan's patent system required the government to disclose the contents of any patent application after 18 months, even if the invention should not have been disclosed for security reasons. In other countries, it is common to have a system that keeps such patent applications confidential. Therefore, in Japan, the Act on the Promotion of Ensuring National Security through Integrated Implementation of Economic Measures (Law No. 43 of 2022), also known as the Economic Security Promotion Act, established a non-publication system for patent applications.

Under the Act, if a patent application's detailed description includes an invention that, if disclosed publicly, could significantly jeopardize the safety of the nation and its citizens through external actors, a procedure called a "preservation designation" reserves patent procedures such as application publication, patent examination, and rejection decisions. During this period, the disclosure of the invention's content, including its publication, and the implementation of inventions that could lead to similar outcomes are generally prohibited. Furthermore, withdrawing the patent application to avoid this system is also prohibited. Please comply with national laws, guidelines, and directives, including the Economic Security Promotion Act.

Details about the non-publication system for patent applications are available on the Cabinet Office's website. For more information, please refer to the following:

- Cabinet Office: System for Non-Publication of Patent Applications

https://www.cao.go.jp/keizai_anzen_hosho/patent.html

4.35 Response to the Startup Development Five-Year Plan

Following the decision regarding the Startup Development Five-Year Plan* at the Council of New Form of Capitalism Realization (chaired by the Prime Minister) on November 28, 2022, this program strongly encourages proposals from startups and proposals involving startups to contribute to creating an ecosystem in Japan that nurtures startups, through the acceleration of startup entrepreneurship and the promotion of open innovation by existing large enterprises. Additionally, during the implementation of the R&D projects, efforts should be made to encourage the participation of new startups with an eye toward social implementation.

https://www.cas.go.jp/jp/seisaku/atarashii_sihonsyugi/kaigi/dai13/shiryou1.pdf

https://www.cas.go.jp/jp/seisaku/atarashii_sihonsyugi/kaigi/dai13/gijisidai.html

Chapter 5 How to use the cross-ministerial R&D management system (e-Rad) for your application

5.1 The cross-ministerial R&D management system (e-Rad)

The Cross-ministerial R&D Management System (e-Rad) brings a series of processes in relation to the management of call-for type research systems (accepting applications > selection > adoption > management of the adopted problems > accepting the registration of research results and accounting results, etc.) online, which is managed by each governmental body.

*”e-Rad” has been abbreviated from “electronic Research and Development”; the first letter of each of these words has been used to create the short form that the Cross-ministerial R&D Management System is referred to as.

5.2 How to use e-Rad for your application

You are supposed to use e-Rad for your application to thisprogram.

To apply, please refer to the e-Rad portal site（https://www.e-rad.go.jp/）.

※In principle, paper documents cannot be accepted when using e-Rad, so we ask that you please use the e-Rad portal site to complete all of the application procedures.

In addition, when applying, please pay particular attention to the following points.

(1) Registration prior to the use of e-Rad (https://www.e-rad.go.jp/organ/index .html)

You need to register the proponent and his or her organization before using e-Rad.

(i) Registering the proponent's organization

The organization to which the proponent belongs must be registered on e-Rad by the time of the application. Appoint one person from the organization to which the proponent belongs as the representative to manage all clerical work on e-Rad. The representative should use the e-Rad portal site (referred to as “portal site” from here) to download the registration form for the R&D institution and apply for registration by postal mail (the proponent must undertake the abovementioned process by himself or herself if he or she belongs to an organization outside Japan or does not belong to any institution).

This registration step should be completed at least two weeks prior to the intended start date for using e-Rad because it may take several days to process your registration. Once registration is completed, you do not need to register again when applying for some other system or program provided by a governmental body, even if you have already finished the registration for the same.

(ii) Registration of departmental information, organizational representative information, position information, and researcher information

An office representative will log in to e-Rad using the ID and password obtained in step (i), register the departmental information, the organizational representative information (if there is such person), the position information, and the researcher information, after which an ID and password will be issued to the organizational representative and the researcher.

For how to register, please go to the e-Rad portal site (https://www.e-rad.go.jp/manual/for_organ.html) and refer to the following manuals for representatives of research organizations: "10. Procedures for Research Institutions" and "11. Procedures for Organizational Representatives of Research Institutions."

（2）Application through e-Rad

・Please refer to the manuals for researchers on the e-Rad portal site (https://www.e-rad.go.jp/manual/for_researcher.html) for how researchers should apply for an R&D project. Applications that do not have the e-Rad status of "research fund allocation institution processing" or "accepted" prior to the submission deadline will be considered invalid. Please check the status of your application by going to the "list of applications/adopted R&D subjects." Regardless of whether the researcher submitted the application prior to the deadline, if the status does not change to either of these, please contact the personnel in charge as described in section 5.3 "Others," below. Note that the "accepted" status is necessary in order for research fund allocation institutions to manage an application for an R&D project, but this status is not necessary from the standpoint of the researcher having completed his/her application. If the status

of the application documents has changed to “application in progress” and the status of the application process has changed to “research fund allocation institution processing, application in progress” prior to the deadline for submissions, then your application has been successfully submitted.

<Notes>

① When submitting an application, you will need to enter the application information online and submit the application form as an attachment.

You can upload a file that is roughly 3 MB or smaller as the electronic media for your application form; the maximum file size is 10 MB. Pay attention to the file size when using image data. If exceeding the maximum file size is unavoidable, please contact the personnel in charge specified in section 5.3 “Others,” before uploading the file.

② Your application is not examined if the documents in your application are not complete or are faulty. Carefully read the instructions about preparing the files described in this application form and the template of the R&D project proposals.

5.3 Others

(1) Inquiries about how to use cross-ministerial R&D management system（e-Rad）

Contact our personnel in charge of JST programs if your inquiry is about the program . Contact e-Rad Help Desk if your inquiry is about how to use e-Rad. Double-check the website of this call or the e-Rad portal site before you make inquiries. You are not allowed to make any inquiries about the status of selection or the adoption or rejection of your proposal.

Inquiries about this program; inquiries about the processes of preparing, submitting, or any other step	Department of Moonshot Research and Development Program, JST	Please ensure that any inquiries are made by e-mail. E-mail: moonshot-koubo@jst.go.jp Office hours: 10:00–17:00 *Except for Saturdays, Sundays, national holidays, and the year-end new-year holiday Tel: 03-5214-8419

concerning your application files		We will only accept emergent telephone inquiries on the day of the deadline or in an emergency. Even if we receive your question(s) by telephone, we may ask to handle the issue via e-mail.
Inquiries about how to use e-Rad	e-Rad Help Desk	Phone Number: 0570-066-877 (Navigation Dial) Office hours: 9 AM – 6 PM *Except for Saturdays, Sundays, national holidays, and year-end new-year holidays

・The website for this call
https://www.jst.go.jp/moonshot/en/application/202112/

・ e-Rad portal site https://www.e-rad.go.jp/

(2) When e-Rad can be used

e-Rad is, in principle, in operation 24×7. However, the service may be interrupted for system maintenance.

Before we interrupt the service, we post notifications on the e-Rad portal site.

Moonshot Research and Development - website

https://www.jst.go.jp/moonshot/en/application/202403/index.html

See also this site for the latest information and FAQs.

[Inquiry Office]

Make sure to email us your inquiries.

Japan Science and Technology Agency

Department of Moonshot Research and Development Program

K's Gobancho, 7, Gobancho, Chiyoda-ku, Tokyo 102-0076 Japan

E-mail: moonshot-koubo@jst.go.jp

*Please make sure to write “[2024 PM]” in the subject.

(Office Hours: 10am-5pm, Except for Saturdays, Sundays, National holidays, and year-end new-year holidays)