

[Provisional translation]

Moonshot Research and Development

Moonshot Goal 8

Performers

Application Guidelines

Application Period

Tuesday, March 1, 2023 – Noon, Tuesday, May 9, 2023



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Chapter 1 To those who are applying for or participating in the project

1.1 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.

• For sustainable development goals (SDGs), JST endeavors, and the like, please access the following website.

(In Japanese) <https://www.jst.go.jp/sdgs/actionplan/index.html>

(In English) <https://www.jst.go.jp/sdgs/en/actionplan/index.html>

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



1.2 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.

Japan Science and Technology Agency,
Executive Director and Manager, Office for Diversity and Inclusiveness,
Department of Developing Human Resources for R&D Programs

1.3 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 2 Application and selection

2.1 Moonshot R&D project & Moonshot Goal 8

(1) Moonshot R&D project

In the Moonshot Research and Development Program, the government sets ambitious targets (Moonshot Goals, hereinafter “MS Goals”) that will attract people to tackle important societal issues such as super-aging societies and climate change, and promotes research and development based on the R&D concept established by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) that sets out the fields and domains where challenging R&D should be pursued. For each of the 9 MS Goals,¹ under the supervision of a Program Director (PD) who is responsible for all R&D activities related to the MS Goal, a Project Manager (PM) formulates scenarios to achieve the MS goals and the realization of the R&D program, designs the R&D project, establishes an R&D system, and manages the implementation of the R&D project, among other responsibilities. The Performers implement their assigned R&D tasks in the project as directed by the PM in order to achieve the MS Goal and realize the concept.

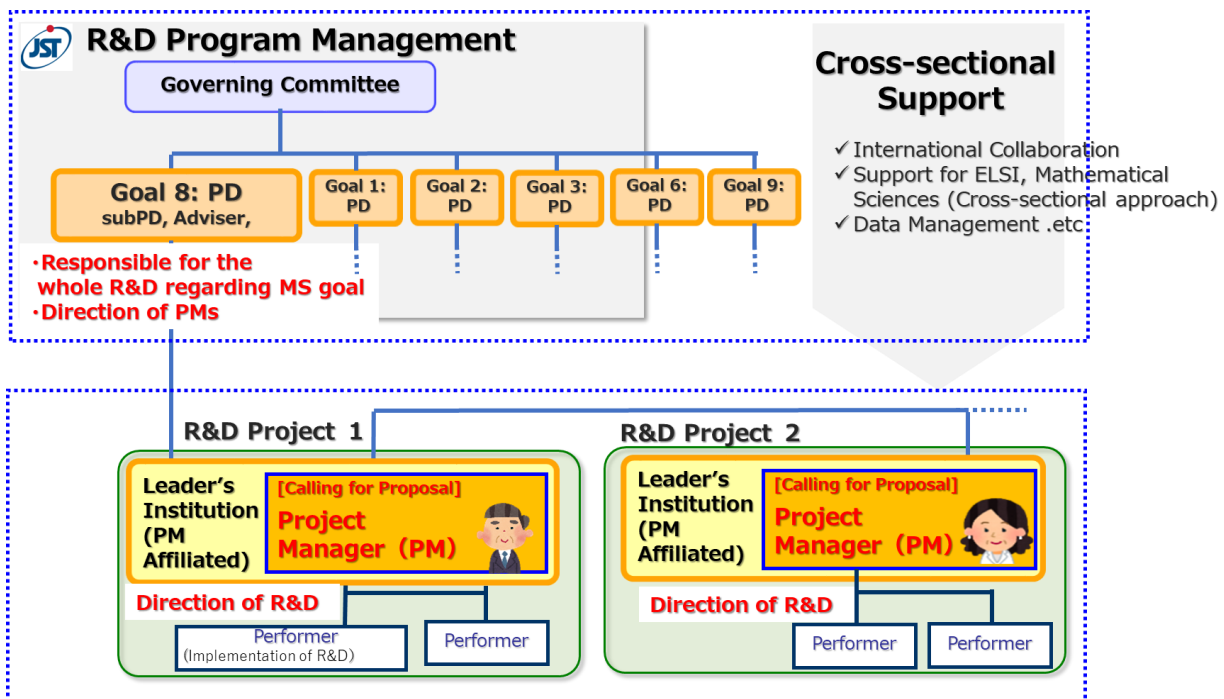


Fig. 1 Overall Management Structure of Moonshot R&D Projects at JST

^{*1} The Council for Science, Technology and Innovation (CSTI) set MS Goals 1-6 in January 2020, after which the Headquarters for Healthcare Policy set MS Goal 7 in July of the same year, and finally CSTI set MS Goals 8 and 9 in September 2021. JST is in charge of MS Goals 1, 2, 3, 6, 8, and 9.

(2) Moonshot Goal 8

In order to achieve MS Goal 8, research and development are being promoted. MEXT has established an R&D concept that sets out the fields and domains where challenging R&D should be pursued in order to achieve the objectives of MS Goal 8. For details, please see Appendix 1 in the Outline of Calls for Applications, "R&D Concept."

<p>Moonshot Goal 8 (PD : MIYOSHI Takemasa)</p>	<p>Realization of a society safe from the threat of extreme winds and rains by controlling and modifying the weather by 2050.</p>
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In this MS Goal, 8 PMs are currently implementing R&D projects based on the portfolio concept designed by the PD. The R&D projects are divided into two approaches, the first being "Core Research," which aims to achieve the MS Goal by backcasting from an image of society in 2050 and is pursued based on an overall scenario, and "Feasibility Studies," which involve research that may contribute to the achievement of the MS Goal, but for which it is difficult to envision an overall scenario at this stage. Each R&D project pursues its research and development to achieve their goals while also engaging in cooperation and collaboration with the other projects.

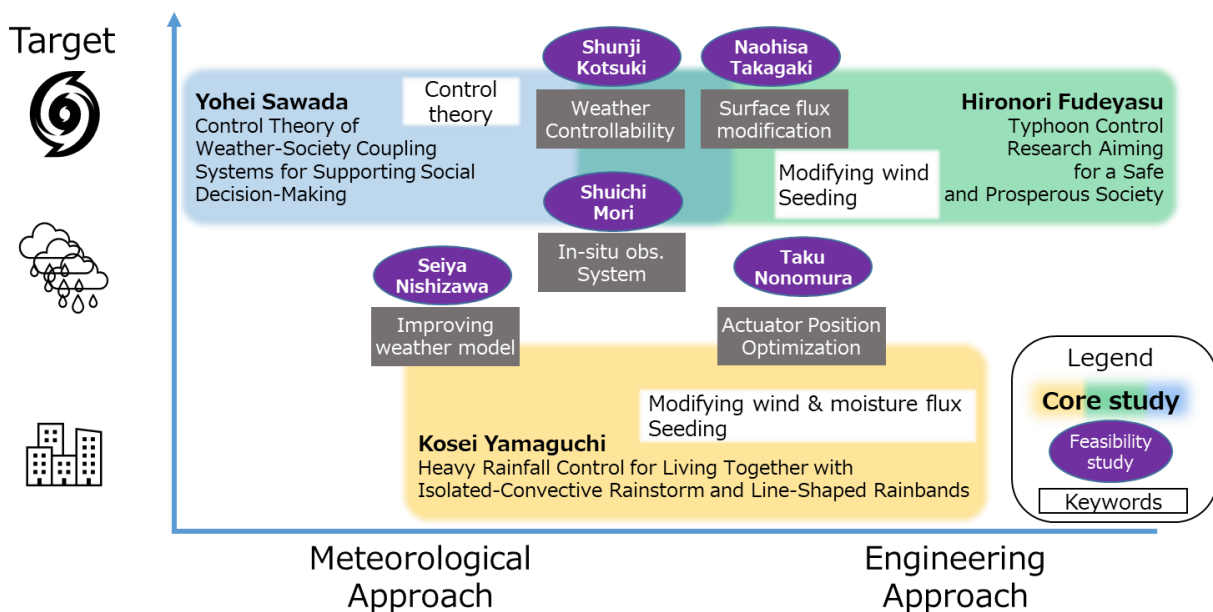


Fig.2 Program portfolio

2.2 The Call and selection of Performers and R&D subject

This call invites applications for Performers and R&D subjects in the following “Core Research” R&D projects being pursued for this MS Goal, in order to develop methods for causing atmospheric disturbances that are necessary for the control of extreme weather events. The adopted proponents will participate in one or more R&D projects and conduct R&D as a Performer. Which project(s) the proponent will participate in will be decided upon adoption based on the content of the R&D.

PM	R&D project
SAWADA Yohei	Control Theory of Weather-Society Coupling Systems for Supporting Social Decision-Making
FUDEYASU Hironori	Typhoon Control Research Aiming for a Safe and Prosperous Society
YAMAGUCHI Kosei	Heavy Rainfall Control for Living Together with Isolated-Convective Rainstorms and Line-Shaped Rainbands

The PD’s thoughts on the call for applications are included in Appendix 2 in the Outline of Calls for Applications, “PD’s supplement,” so please read it before submitting your application.

2.3 Schedule of the call for application and selection

Call for application starts from	Tuesday, March 1, 2023
Applications accepted until	Noon, Tuesday, May 9, 2023 <No delay accepted>
Period of document-based review	mid-May – early June
Period of interview-based review	mid-May – early June
Notification and announcement of selection results (Notification sent to all proponents)	Early August
The periods to implement R&D subject	September 2023 - March 2025

※ Everything after the document-based review is tentative. All the above information is

subject to change. JST will notify proponents of the specific time and date of the interviews.

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/202302/index.html>

※ 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.)

2.4 The periods to implement R&D subject

In principle, the period will be from September 2023 to March 2025.

After the completion of the R&D period, R&D may be continued under certain conditions.

For more details, please check the “PD Guidelines for PM Additional Applications” in the appendix.

2.5 Monetary amount for R&D projects

In principle, the monetary amount is limited to 5 million yen (direct costs only. Indirect costs are handled separately).

However, if a special need is recognized during the selection process, measures may be taken to exceed the cap on R&D costs.

In addition, in the event that the R&D is continued after the R&D period ends (please see the preceding section 2.4, “The periods to implement R&D subject”), the R&D costs needed will be addressed at that stage. For more details, please check the “PD Guidelines for PM Additional Applications” in the appendix.

2.6 The number of proposals to be adopted

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

2.7 Proponent requirements

2.7.1 Proponent and research group requirements

Applications can be made by the proponent alone, or as a group consisting of the proponent and multiple research participants. We encourage young researchers to apply as individual proponents or to join such research groups. In addition, applications from researchers who are already participating in Moonshot R&D projects are allowed, but please be aware of the effort involved.

In the case of forming a group of multiple research participants, as noted in the following sections 3.2, "Commissioned R&D contracts" and 3.5 "The roles and responsibilities of Performers," since it is necessary for the research institutions the research participants are affiliated with to conclude an R&D implementation agreement, the proponent and the research group should all be affiliated with the same institution in principle. In the case of a research group composed of participants from multiple research institutions, each affiliated organization will need to conclude a commissioned R&D contract in principle.

Proponents need to satisfy all of the application requirements (1) to (2) below.

- (1) 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 5.1, "Completing the course on research and ethics education."

- (2) 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 application form to fill in the information of proponents.

2.7.2 Research Institution requirements

The research institution with which the proponent is affiliated is required in principle to be a research institution located in Japan with a status as a corporate entity.

In the event that a proponent is affiliated with an overseas institution, in principle a commissioned R&D contract must be concluded with the R&D institution in accordance with the details provided by JST. In addition, the proponent is obligated to properly conduct R&D in accordance with the commissioned R&D contract and the R&D plan. If the commissioned R&D contract has not been concluded within 3 months after adoption, or if it is determined that the R&D will not be properly conducted at the R&D institution concerned, the implementation of R&D at the R&D institution concerned will not be allowed.

*Please contact us at the email address listed at the end of this call for applications for the template for commissioned R&D contracts for overseas institutions, etc.

2.8 How to apply

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/koubo/202302/index.html>

When applying, please take note of the following points.

- Please make sure when you submit your application that any comments or examples in blue font have been deleted.
- Applications should be submitted by the proponent him/herself.
- When preparing the application form, please ensure that you create an application which is concise and to the point, based on the model.

- Add page numbers at the bottom center of the application forms.
- Please submit application forms that have been converted into PDF format. Please convert your file into a PDF directly from Word format or another application rather than printing it out on paper and then scanning the pages. When creating the PDF, please do not select any security settings such as printing or copying restrictions.

2.9 Methods of selection

2.9.1 The steps to select

The proposals received will undergo a document-based review and an interview-based review. During the review process, individuals may be asked questions about the content of their applications.

The review will be conducted privately, but no one with a conflict of interest of the application will be in charge of reviewing the applications. Moreover, the evaluation staff involved in the review are obligated not to divulge any information obtained during the review process to any third party, not only during the period when they serve as an evaluation staff, but also after they leave said role.

Document-based review

Applications will be reviewed by multiple experts in meteorology, engineering, mathematical sciences, and social sciences, etc., who will select the applications that will move on to the interview-based review.

Interview-based review

Multiple experts in meteorology, engineering, mathematical sciences, and social sciences, etc., will conduct interviews of the proponents. Those who will be interviewed will be notified separately of the interview schedule and procedures.

Decisions on R&D subjects and Performers

Based on the evaluations conducted in the document-based review and the interview-based review, JST will decide the R&D subjects and Performers.

*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/koubo/202302/index.html>

2.9.2 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.

(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 Performer

If the Performer makes a proposal that designates an "institution related to the Performer" as a joint research institution, and research funds are allocated to the "institution related to the Performer" by JST, this may constitute a conflict of interest for the Performer. Therefore, conflict of interest management will be implemented to appropriately determine conflicts of interest between the Performer and "institutions related to the Performer," taking into consideration the necessity, rationality, and appropriateness of the relationship, and also to avoid the possible creation of any doubts among third parties.

"Institutions related to the Performer" refer to joint research institutions to which any of the following cases apply. Note that points a and b are treated in the same manner whether they apply to the Performer alone or to the Performer's spouse or immediate family members (hereinafter "the Performer, etc.").

- a. An organization established based on the results of the Performer, etc.'s R&D activities.

(This includes cases in which the Performer, etc. is not directly involved in the management but only has a title such as technical advisor, or cases in which the Performer, etc. only holds shares in the organization.)

- b. An organization in which the Performer, etc. is an officer (including CTO, but not including technical advisor).
- c. An organization in which the Performer holds shares.
- d. An organization from which the Performer receives revenues from royalties or licensing fees.

Proposals that designate an "institution related to the Performer" as a joint research institution will be reviewed from the viewpoint of the necessity, rationality, and appropriateness of the organization.

Therefore, if you wish to designate an "institution related to the Performer" as a joint research institution, please declare that an "institution related to the Performer" is included in the joint research institutions on form 5 of the application form.

Please note that in some cases, you may be asked to provide other materials in order to conduct Performer conflict of interest management.

(3) 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>

2.10 Viewpoints in selection

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

- ① Is the research proposal capable of contributing to achievement of the MS Goal and the R&D project milestones?
- ② Is the application consistent with Appendix 2 in the Outline of Calls for Applications, “PD’s supplement”?
- ③ Is the research plan reasonable?

Chapter 3 Promoting R&D projects after adopted

3.1 Formulation of R&D plans

Using the R&D plan in the application as the base, please revise the plan under the direction of the PD and other personnel and formulate the R&D plan, taking into account feedback provided during the review process and any advice, etc. from experts after adoption.

3.2 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 research 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 4.8, "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.

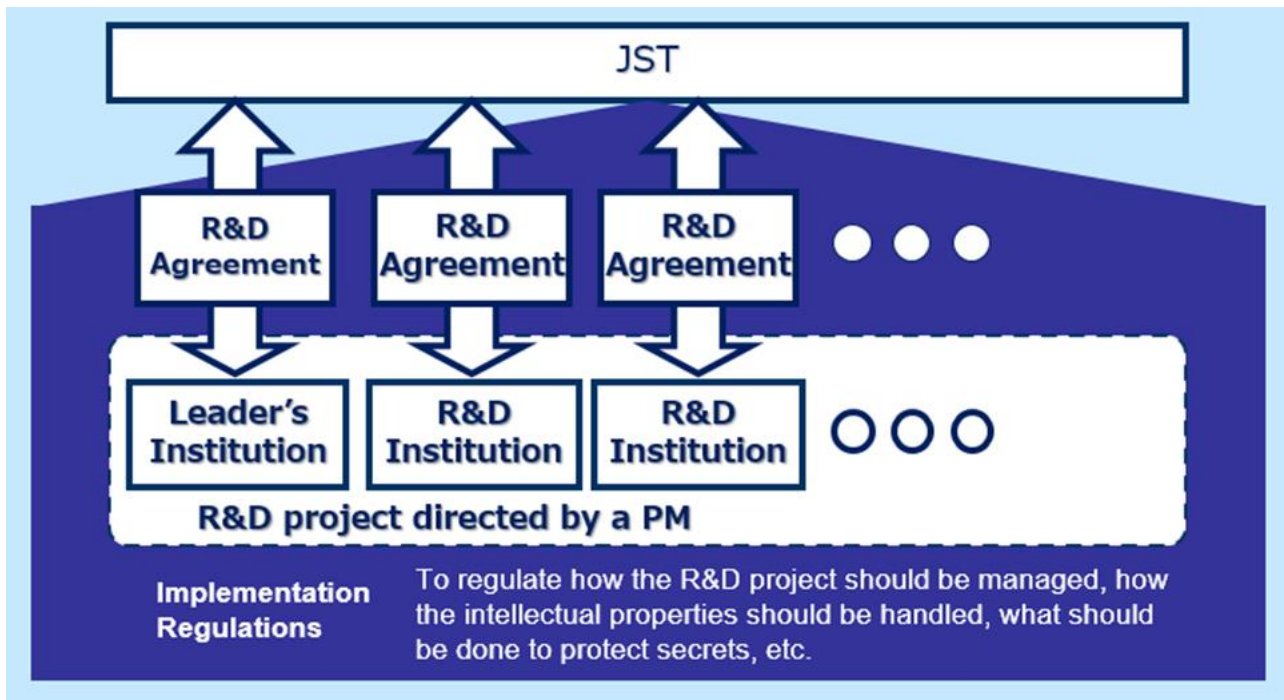


Fig.3 Organizations and Contracts

3.3 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.

3.3.1 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

*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 4.12, "Promotion of sharing research facilities and equipment.

*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 universities) <https://www.jst.go.jp/contract/moonshot/2022/moonshota.html>

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

*In JST's competitive research fund projects, a principal investigator at university can pay for costs for their own personnel and delegated work other than research (buyout costs) only when meeting requirements.

○"Introduction of a buyout system to make it possible to pay delegated-work costs (costs for non-research work delegated to others) from direct costs and the payment of PI personnel cost from direct costs (correspondence)" (September 17, 2020)"

<https://www.jst.go.jp/osirase/2020/pdf/20200917.pdf>

3.3.2 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).

3.3.3 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).

3.4 Evaluation of the Performers

Performers are evaluated by PM on an annual basis. In addition, the PM is subject to an annual evaluation by the PD, and the R&D subject may be changed or terminated depending on the results of the evaluation. The results achieved by the R&D subject will be evaluated in view of the expected contribution to the project at the time of adoption and other factors.

3.5 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.

*In addition to the responsibilities noted in 3.5, "The roles and responsibilities of Performers," Performers must comply with 3.7, "Contract items the Performers should pay attention to," so please refer to that section.

3.6 The roles and responsibilities of research institutions

The R&D institutions must sufficiently recognized that the original funds of the funds for the consigned R&D are public funds while the R&D subject is implemented and, thus, try to implement the R&D subjects efficiently. As R&D institutions that do not fulfill the responsibilities described below is not allowed to conduct R&D, when submitting an application, please ensure that you obtain consent from all research institutions where you plan to conduct R&D (hereinafter, "participating institutions") in advance.

- (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/moonshot/koubo/202302/index.html>

- 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 5.27, "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 5.28, "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 a course of the endeavors to prevent misconducts in PM activities and R&D activities, JST has determined to oblige the researchers etc. participating in a newly adopted R&D project and belonging to the R&D institutions etc. to take and finish the study course of the learning materials in relation to research ethics. (JST takes management of the procedures etc. necessary to take the study course). R&D institutions etc. are asked to take management so that applicable persons will surely take and finish the study course.

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 with the content presented by JST. 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. The R&D institutions should transfer intellectual property rights that accrue during the implementation of the R&D to JST for no compensation.

* 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>

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

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

(3) 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.pdf

<The items you complete in the data management plans>

- The principles for the retention/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
- (4) 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 4.30, "The handling information on e-Rad). In addition, we may ask that each type of information be provided.
- (5) 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 the 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.

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.

(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/202302/index.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

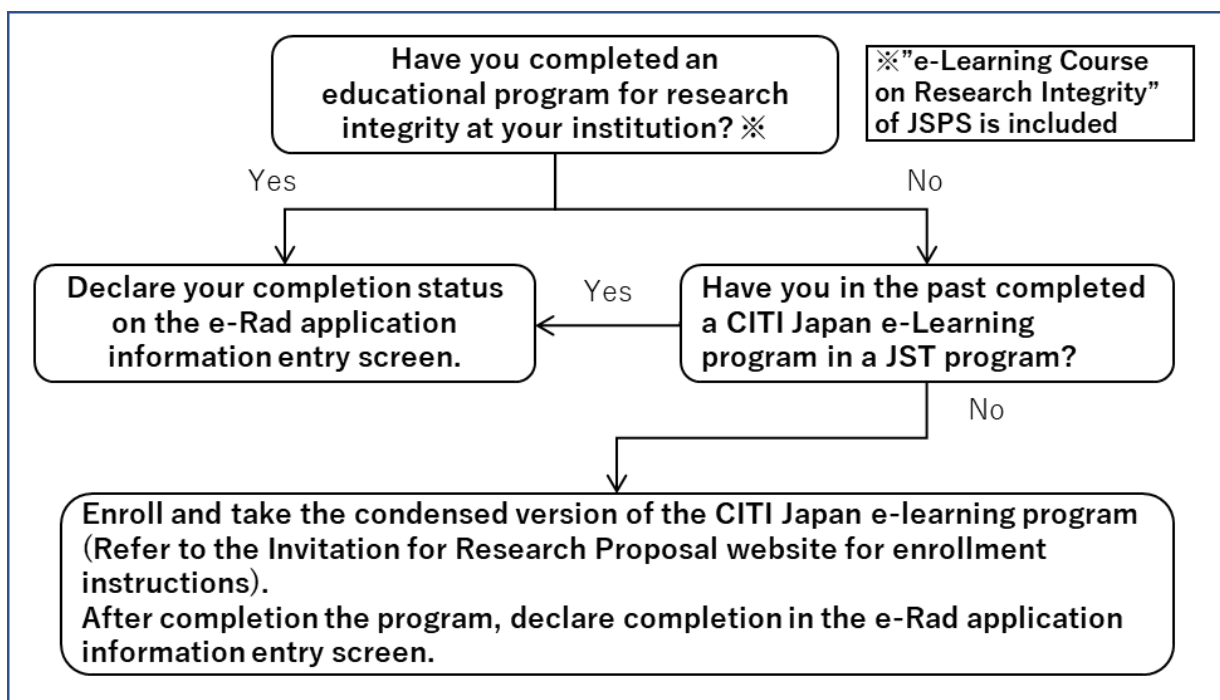
E-mail: rcr-kousyu@jst.go.jp

- 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 "[2023 PM]" in the subject.



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

JST obliges the researchers participating in Moonshot R&D to complete the specific units of eAPRIN (formerly CITI). In the next fiscal year, we will provide the same opportunities; if adopted, in principle, all the R&D participants will be asked to complete the units of eAPRIN (formerly CITI). This excludes cases in which the units of eAPRIN (formerly CITI Japan) specified by JST have been finished.

4.2 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

The decision of the adoption in this program may be canceled, 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) Provision of 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 subject 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 subject 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 subject (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) Provision of 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 subject 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 subject 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 subject 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).

4.3 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.

4.4 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 the R&D funds. 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 and incorporated administrative agencies under the jurisdiction of 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 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.

The people within the restriction on an application due to unjustifiable use or reception	The degree of unjustifiable use		The period to restrict applications *3
The researchers who engaged in unjustifiable use or the researchers conspired to make such use *1	Private misappropriation for acquiring personal profits		10 years
	2. Other than 1	① A case whose social influence is large and the viciousness of the act is judged to be high	5 years
	② Other than ① and ③		2 - 4 years

	③ case whose social influence is small and the viciousness of the act is judged to be low	1 year
The researchers who used other unjustifiable means to receive the competitive funds and the researchers who conspired to do so		5 years
The researchers who were not directly involved in the unjustifiable use but violated the duty of the due care of a prudent manager*2		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

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. The synopsis includes the researcher, the title of the project, the organization to which he or she belongs, the fiscal year of the research, the contents of the unjustifiable act, and the contents of the measures provided). The researchers will be disclosed by the MEXT with respect to the synopsis of the applicable unjustifiable cases or the like (including the title of the project, the organization to which the researcher belongs, the fiscal year of the contents of the unjustifiable act, and the contents of the measures provided).

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 URL.

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

4.5 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, in other competitive funds* under management of a national governmental body or an incorporated administrative agency, 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 2023 or later. The systems that were terminated in the fiscal year 2022 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)

4.6 Measures for violations of relevant laws

If relevant laws and/or ordinances, guidelines, and/or the like are violated to implement an R&D project, 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.

4.7 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 or designing, the weather, difficulty in procuring materials, or other reasons.

4.8 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 universities) <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 2020”, 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. 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.

○“Introduction of a buyout system to make it possible to pay delegated-work costs (costs for non-research work delegated to others) from direct costs and the payment of PI personnel cost from direct costs (correspondence)” (September 17, 2020)”

<https://www.jst.go.jp/osirase/2020/pdf/20200917.pdf>

4.9 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.

4.10 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.

4.11 Retaining receipts for indirect costs and reporting on use results

If R&D institutions receive payments for indirect costs, they must undertake appropriate management of the indirect costs and retain the documents that prove the appropriate payments for indirect costs, such as receipts and the like, for five years from the fiscal year following the completion of the project.

In addition, the R&D institutions etc. that have received the payment for the indirect cost need to make a report to JST by June 30 in the next fiscal year on the results of the usage of the indirect cost (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/>)

4.12 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 2022 (June 3, 2022 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 use 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 of the equipment 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 2022" [Cabinet decision (June 3, 2022)]
https://www8.cao.go.jp/cstp/tougosenryaku/togo2022_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 March 5, 2021)
https://www8.cao.go.jp/cstp/compefund/toitsu_rule_r30305.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

4.13 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 applicant 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.

4.14 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 postdocs 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.

4.15 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.

- Regarding the voluntary research activities of young researchers employed for implementing the project (correspondence)” (April 10, 2020)

<https://www.jst.go.jp/osirase/2020/pdf/20200414.pdf>

*Human resources development etc. are included in the purpose of the Moonshot R&D program.

4.16 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 postdoctoral 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.

4.17 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 URAs and other management personnel employed at or newly hired by R&D institutions, etc. are engaged in the management of R&D projects, R&D institutions are requested to utilize budget such as the indirect cost of not only this program but also other external funding, basic expenses, donations, or the like, or to take other measures in order to ensure a certain tenure not as short as 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.

4.18 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 (after May 1, 2022, 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 note that the export (provision) of technology acquired through the program may also be subject to regulations.

*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) .

By the time the contract is signed, we will confirm whether the export of goods or technologies subject to the export control laws of the Foreign Exchange and Foreign Trade Act is planned through this program, and if so, whether a control system is in place. Please note that if you intend to export technology and do not have a control system in place, you will be required to submit a written pledge to establish a system prior to the export or by the end of the project, by the time the contract is signed. 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.

*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.

The details of controlling security in trade are published on the website of the Ministry of Economy, Trade, and Industry. For more information, see the following:

- Ministry of Economy, Trade, and Industry: Security Trade Control (in general)
<https://www.meti.go.jp/policy/anpo/>
- Ministry of Economy, Trade, and Industry: Deemed export controls (Page related to *2 above)
<https://www.meti.go.jp/policy/anpo/anpo07.html>
- Ministry of Economy, Trade, and Industry: Sensitive Technology Control Guide for Security Trade Control (for universities, colleges, and R&D institutions)
https://www.meti.go.jp/policy/anpo/law_document/tutatu/t07sonota/t07sonota_jishukanri03.pdf

- Ministry of Economy, Trade, and Industry: Security Export Control Regulations Manual for Academic and Research Institutions
<https://www.meti.go.jp/policy/anpo/daigaku/manual.pdf>
- Center for Information on Security Trade Control
<https://www.cistec.or.jp/export/jisyukanri/modelcp/modelcp.html>
- Ministry of Economy, Trade, and Industry: Security Export Guidance [Introduction]
<https://www.meti.go.jp/policy/anpo/guidance.html>

4.19 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>

4.20 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

4.21 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 publically available through institutional repositories and open-access publications, and for peer-reviewed papers in particular, to ensure they are made public within 12 months in principle. A leader's institution (PM's institution) is also requested to prepare a data management plan (DMP). This DMP should contain details on policies and plans for archiving, managing, and publishing, or the non-disclosure of research data, which are being developed for achievements. A leader's institution must also submit the DMP, along with the R&D plan document to JST. It is also mandatory to undertake archiving, managing, and publication of research data based on this DMP. In addition, for research data subject to management as prescribed in a data management

plan, etc., metadata must be assigned as defined by JST. The DMP can be changed through the course of R&D implementation.

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

In addition, in the Moonshot R&D Program, PMs are required to establish a DMP based on the “Guidelines for the Operation and Evaluation of the Moonshot R&D Program” (Attached Document 2). Based on the DMP, researchers are required to aggregate the metadata of the data to be managed and submit the aggregate as a data management report every fiscal year.

Explanation of Metadata in the Moonshot R&D Program, Version 2

https://www8.cao.go.jp/cstp/ms_metadatainstructions.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 entered data, 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 items described in a data management plan, see also section 4.7, “The Items the PMs and Performers Should Note regarding Their Contacts,” paragraph (5), item c.
- * For the bioscience data, also see “5.23 Open data from the Bioscience Database Center”.

4.22 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.

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/
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/

<Inquiry Office>

Bio Science Database Center, Japan Science and Technology Agency

Phone: 03-5214-8491

e-mail: nbdc-kikaku@jst.go.jp

4.23 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] Grant Number [JPMJMSxxxx].

* If such results are made with multiple funding programs, please indicate all program names and systematic numbers.

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

“The Development of Policies for Science Technology Innovations for Creating Knowledge-Intensive Values—Japan Leading the World through the Realization of Society 5.0—Final Summary” (the Comprehensive Policy Special Committee of the Council for Science and Technology, March 26, 2020) states that, given the fact that research support and research outcome feedback to the society, which were conventionally implemented as public projects by administrators, have been provided by newly emerging businesses with strong will and passion, a new mechanism for public-private partnership (cooperation between the public and private sectors) needs to be established.”

Amid this situation, 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. There are nine certified services as of FY2020.

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

- “The Development of Policies for Science Technology Innovations for Creating Knowledge-Intensive Values – Japan Leading the World through the Realization of Society 5.0 – Final Summary”

(the Comprehensive Policy Special Committee of the Council for Science and Technology, March 26, 2020)

https://www.mext.go.jp/b_menu/shingi/gijyutu/gijyutu22/houkoku/1422095_00001.htm

4.25 Reforming competitive research expenses

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 2020" 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.

4.26 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.

*1 For "Guidelines for the Management and Audit of Public Research Funds in Research Institutions (practice standards)," access the following 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)"

To enter into a contract in this program, each R&D institution, etc. must structure their

organization so that it manages and audits the research funds based on the above-mentioned guidelines and must submit the "Self-evaluation Checklist for Structuring Organizations," which is a report on its status (referred to as "checklist" from here). Research cannot be implemented until a checklist has been submitted.

Therefore, until the designated date before the contract begins, it is necessary to submit a check list of fiscal year 2023 via the Cross-ministerial R&D Management System (e-Rad) from the R&D institutions etc. to the Competitive Funds Control Office, Research Environment Section, Research Promotion Bureau, MEXT after April 1st, 2023. Please note that, regardless of the above, there is an acknowledged contract with R&D institutions, etc., that have submitted the FY2022 research misconduct checklist; in this case, your institution should submit the FY2023 research misconduct checklist by December 1, 2023.

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 MEXT or an incorporated administrative agency under the jurisdiction of MEXT.

For details on how to submit the checklist, access the following website of the MEXT.

(The web page below contains content relating to the checklist for FY2022. Please check the MEXT website from April 2023 for the checklist for FY2023.)

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

*Note: You are required to make e-Rad available. Note that it normally takes about two weeks to register the research institution. For details on the procedure for using e-Rad, access the following website.

<https://www.e-rad.go.jp/organ/index.html>

The standard guideline promotes the "communication of information and the commonization." Therefore, it is asked for the R&D institutions etc. to post the check list on a website or the like for proactive communication of information.

4.27 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 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.

Therefore, until the contract begins, it is necessary to submit a research misconduct check list by using the Cross-ministerial R&D Management System (e-Rad) from the R&D institutions that conduct R&D to the Research Fairness Promotion Office, Research Environment Section, Research Promotion Bureau, MEXT after April 1st, 2022. Please note that, regardless of the above, there is an acknowledged contract with R&D institutions, etc., that have submitted the FY2021 research misconduct checklist; in this case, your institution should submit the FY2022 research misconduct checklist by September 30, 2022. 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 following website of MEXT.

(The web page below contains content relating to the checklist for FY2021. Please check the MEXT website from April 2022 for the checklist for FY2022.)

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

*Note: 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>

(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 project 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 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).

Persons restricted from application due to a specific type of misconduct		The degree of the specific type of misconduct	The period of restricted applications *
	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		10 years
The person involved in a specific type of misconduct	2. The author of the paper or the like in relation to the research in which a specific type of misconduct occurs	The author who takes responsibility for the applicable paper or the like (the supervisor, representative for the authors, or the person	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
			5 - 7 years

	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

	<p>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</p>	<p>1 - 2 years</p>
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* 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 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.

(iv) Disclosing misconduct cases

If any misconduct is performed during research activities in this program, JST, in principle, will disclose a summary of the applicable misconduct case. This will include

the name of the researcher, the title of the project, the organization to which he or she belongs, the fiscal year of the research, the contents of the unjustifiable act, and the contents of the measures taken. In addition, MEXT will disclose the contents of the applicable cases (the title of the project, the type of misconduct, the field of research in which the misconduct took place, the title of the funds with which the misconduct was performed, the outline of the misconduct case, the measures taken by the R&D institution, and the measures taken by the organization that distribute the funds).

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

4.28 Obligation to complete research and ethics education and compliance courses

The researchers who participate in an R&D project 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 PM and the Performer need 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.

4.29 Handling information, such as items described in research proposals

The information included in the documents submitted at the time of the proposal will be used for the examination to determine the adoption of an R&D project. In addition, "Form 1" in the proposal will be used for the statistical analysis of research trends to contribute to the operations of JST; individuals will not be identified. The secrets in the

content of applications will be strictly kept to maintain the benefits of the proponents and the viewpoints of "the Act on the Protection of Personal Information Held by Independent Administrative Institutions" and others. For details, access the following website.

https://elaws.e-gov.go.jp/search/elawsSearch/elaws_search/lsg0500/detail?lawId=415AC0000000059

In addition, the written proposals of adopted projects may be used by JST to promote R&D after they have been adopted.

4.30 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). The above-mentioned information will be disclosed on the website of Moonshot R&D promptly after the adoption.

4.31 Registering researcher information to researchmap

One of the largest researcher information databases in the country, researchmap (<https://researchmap.jp/>) provides a comprehensive view of researchers in Japan, which enables you to disclose information on achievements over the Internet. 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 register information to researchmap.

4.32 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."

Chapter 5 How to apply

5.1 Acceptance of applications using the application form

Please download the documents necessary for the application, such as the application form template, from the program website

(<https://www.jst.go.jp/moonshot/koubo/202302/index.html>), and submit your application using the application form provided on the program website.

The maximum file size of an application form that can be uploaded is 3 MB. When the deadline is about to close, a large number of people may try to access the application form, which may overload the system, cause it to take a long time to load new pages, or cause issues such as inability to upload your application form or errors that bring you back to the home page, which could make you unable to submit your application before the deadline. Please allow yourself sufficient time to finish your application. If you have not finished your application by the submission deadline, your application will not be eligible for evaluation, regardless of the reason. In addition, we will not accept any replacement or substitute of your application form after the submission deadline has passed.

Please ensure that the affiliation or any other information in the application form and in the written application is the same. (If any discrepancies are found, the description in the written application will take precedence.) Please be aware that applications that have been uploaded which are inadequate in a way that makes them difficult to evaluate will not be accepted. "Inadequacies that make evaluation difficult" refers to omissions in the application forms, corrupted text that makes it difficult to review, glaring omissions in the items to include in the application form, and so on.

This call will not accept applications submitted through the e-Rad system, but after adoption, the proponent will be asked to enter information on the research results and financial performance in e-Rad in cooperation with the PM. Therefore, proponents are asked to obtain an e-Rad researcher ID number before submitting an application.

Moonshot Research and Development - website

<https://www.jst.go.jp/moonshot/koubo/202302/index.html>

See also this site for the latest information and FAQs.

[Inquiry Office]

Make sure to email us your inquiries.

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