Strategic Basic Research Programs

Cutting-edge Research and Development on Information & Communication Sciences (CRONOS)

FY2024 Application Guidelines

Application Period

April 25, 2024 (Thu) to 12:00 PM June 20, 2024 (Thu)

Note: This translation is provided as a reference material. If there is any discrepancy between this translated version and the original Japanese version, the original Japanese version prevails.

Japan Science and Technology Agency

Department of R&D for Future Creation
April 2024

Outline of the Call for Proposals

(1) Schedule of call and selection

The following is schedule for call and selection of R&D proposals for FY2024:

Start of call for proposals	April 25, 2024 (Thu)
Deadline for R&D proposal submission (Reception deadline via e-Rad)	June 20, 2024 (Thu) 12:00 (noon, Japan Standard Time)
Document review	Mid-July to late July
Interview for applicants who pass the document review	Mid-August to late August
Notification of results	Mid-September to late September
Start of R&D	Early October onwards

※1 All dates except for the start of call for proposals and the deadline for acceptance are tentative. These dates may change in the future.

※2 Please be sure to check the latest information on the application process, the schedule of the application briefing session, the participation process, etc., on the Call Information Page (hereinafter referred to as the Call Information Page) on the CRONOS webpage.

※3 The specific date and time for the interview will be determined by JST. We will inform you on the Call Information Page as soon as the interview schedule and the e-mail contact date to the interview for applicants who pass the document review are decided.

Call Information Page: https://jst.go.jp/kisoken/cronos/koubo/index.html

(2) Application process

Please download the Application Form and other materials required for application from the Call Information Page.

Applications must be made through e-Rad (https://www.e-rad.go.jp/) (refer to "Chapter 5: Submission via Cross-Ministerial R&D Management System (e-Rad)"). As the deadline approaches, the number of users accessing e-Rad also increases, which places a load on the system, leading to problems such as page transition delays, errors when uploading R&D proposals, and returning to the top page due to errors. Therefore, you may not be able to complete your application by the deadline, so please complete your application ahead of time. **Proposals that did not go through the complete application procedure via e-Rad within the deadline shall not be considered regardless of the reason. Furthermore, R&D proposals cannot be revised or replaced after the application deadline.** Moreover, in the event of a large-scale system error on e-Rad that hinders the application during the application period, please note that work arounds may be posted on the Call Information Page.

Please unify the descriptions in the e-Rad and the main text of the R&D proposal regarding affiliated institutions, positions, etc. (if there are discrepancies, the description in the main text of the R&D proposal will be treated as correct). Please note that if there are any defects in the R&D proposal uploaded to e-Rad that hinder review, it will be rejected. "Defects that hinder review" refer to errors in the Application Form (using forms from different programs), omissions in the forms related to the R&D proposal (specially Form 1 "R&D proposal cover"), unreadable corrupted text, significant omissions in items included in the R&D proposal, etc.

JST is not responsible for any defects in R&D proposals that occur before the application deadline, regardless of whether the proposal is accepted or not. Therefore, please note that JST will not make any corrections to the R&D proposal without prior confirmation from the applicant, nor will it make any requests for corrections to the applicant, before the application deadline.

For information on the application procedure of the R&D proposal, as well as the points to note during the application, please refer to the Call Information Page "Chapter 4: Points to be noted regarding application" and "Chapter 5: Submission via Cross-Ministerial R&D Management System (e-Rad)."

(3) Areas and the Grand Challenges calling for Proposals

This program calls for R&D proposals covering a wide range of technical areas in information and communication sciences. In FY2024, we will set two areas as shown in the table below. Each area encompasses multiple technical area, and the two areas promote R&D while promoting together.

Areas	AREA 1 Mainly in the area of information and communication	AREA 2 Mainly in the area of information processing
Program Officer (PO)	NAKAO Akihiro (Professor, The University of Tokyo)	KAWAHARA Yoshihiro (Professor, The University of Tokyo)
Main technology categories (TC) included in the area	TC1: Communication Service TC2: Information and Communication Infrastructure (sensing, collection, encoding, compression, recognition, classification, optimization, control, and learning related to communication) TC3: Network Security (cyber attack/security operation system) TC4: Devices and communication principle (radio wave, light, quantum communication)	TC5: Information Service TC6: Information Processing Infrastructure (sensing, collection, encoding, compression, recognition, classification, optimization, control, and learning related to information processing) TC7: Information Security (encryption/authentication/privacy) TC8: Device and calculation principle (electronic, optical, quantum circuits)

In this program, we designed the Grand Challenges in encouraging challenging R&D and call for R&D with new ideas to realize the challenge. Through efforts to achieve the Grand Challenges, the program aims to create innovative information and communication technologies in various research approaches and to foster advanced research personnel.

The Grand Challenges for FY2024 are as follows. The Grand Challenges define as common to both areas. If the applicant wishes to challenge on a Grand Challenge other than GC1 to GC10, it is also possible for the applicant to design it as GC00.

GC number	Grand Challenge name
GC00	Grand Challenge designed by applicants
GC1	Communication service that can co-create new experiences by exploring people and AI
GC2	Network architecture that can be reconfigured to follow changes in needs and technology
GC3	Building a vertically integrated network to achieve global coverage
GC4	Cyber-physical security innovation that solves fundamental issues that give attackers an advantage
GC5	Devices and communication methods that dramatically improve capacity, latency, and power performance
GC6	Multimodal information sensing from sensors embedded into the environment
GC7	Information architecture to handle the ever-expanding information and semantic space
GC8	Creation of new theories for analyzing and optimizing phenomena and systems where objective functions and constraints change
GC9	A trust framework that permanently records and utilizes all information, protects data sovereignty, and innovates information distribution.
GC10	Device informatics supporting the creation and design innovation of new materials, circuits, and processors

For details on call and selection policies in each area and the details of the Grand Challenges, please check “Chapter 6: Areas and Grand Challenges Targeted for Application” carefully before applying. We welcome R&D proposals regarding innovative challenges that are not bound by existing assumptions.

Contents

Chapter 1　Call for R&D proposals

1.1 About the Strategic Basic Research Program - CRONOS

1.1.1 Program overview

This program aims to contribute to an advancement of Japan's information and communication sciences through developing innovative technologies in the field and fostering researchers with unique ideas and conceptual skills. It sets challenging goals ("Grand Challenges") with the ultimate objective of bringing about paradigm shifts in information and communication sciences in promoting research. With the Grand Challenges and a flexible scheme that enables integration of basic and applied research, we promote research that leads to a transformation of society, and target to achieve proofs of concept (POC).

※CRONOS: Cutting-edge Research and Development on Information & Communication Sciences

1.1.2 Management system

The overall operation of this program will be supervised by a Program Director (PD) appointed by JST. The PD oversees overall program operations and performs overall management of R&D. The PD receives advice from Program Advisors (PA) who advise the PD on important matters in program operation, formulates and reviews program plans, coordinates cross-regional matters including budgets, determines adoption projects in each area. Also, PD will decide on important projects in program management, such as the implementation of applied research.

The Program Officer (PO) will manage each area under the overall supervision of the PD. With the cooperation of external experts such as Area Advisors (AD) with professional knowledge, we will conduct selection of candidate projects, manage research progress through site visits, provide instructions to each team, review toward applied research, evaluate projects, etc. Additionally, PO will increase or decrease R&D budgets through evaluation, etc., and terminate (cancel) projects early.

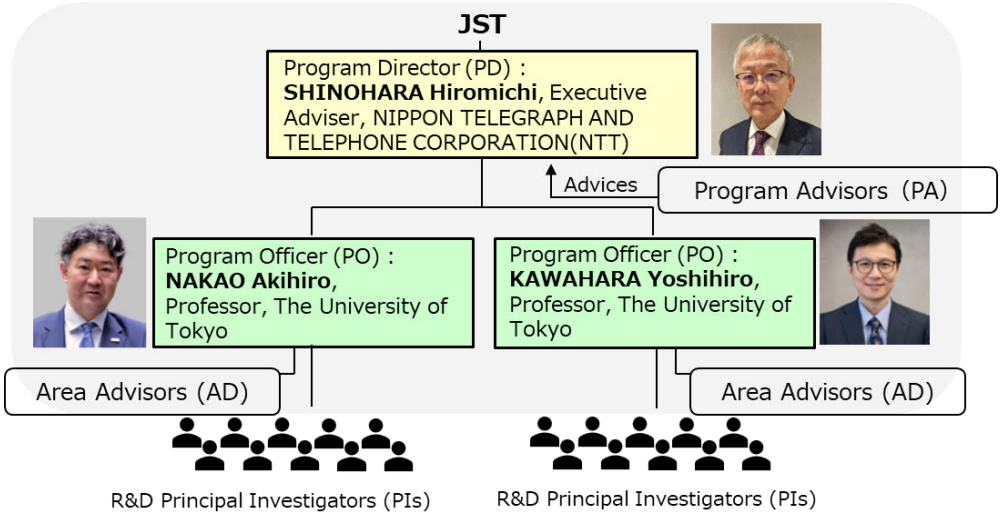


Figure: Management system of this program

1.1.3 Program features and operation scheme

（1） Areas

This program covers a wide range of technical areas in information and communication sciences. Issues that cannot be resolved by technological innovation based on conventional common sense or by innovation in specific technical areas are emerging as technological needs, becoming more diverse and complicated. Through efforts to achieve the Grand Challenges, this program aims to promote collaboration and integration between different technical areas, including personnel exchanges.

As shown in the figure below, two areas have been defined, one focusing on the information and communication area and the other on the information processing area, and the POs manage each area in cooperation with each other.

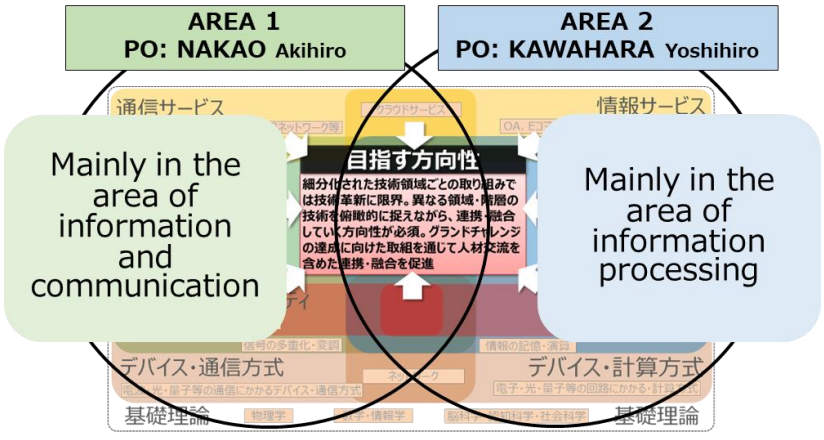


Figure: Target and Area of this program

（2） Grand Challenges (GC)

In this program, in order to encourage challenging research and development, we have designed the Grand Challenges and are looking for research and development with new ideas to achieve this goal. The concept of the Grand Challenges include the following four points from ① to ④. The Grand Challenges include a wide range of technical area. Through efforts to achieve the Grand Challenges, the program aims to create innovative information and communication technologies in various research approaches and to foster advanced research personnel.

Figure: Concept of Grand Challenges

JST designs Grand Challenges by considering R&D trends, industry trends, and social requirements, as well as consulting with PD, PAs, POs, and external experts. The applicant selects the Grand Challenge to challenge on and submit R&D proposals to contribute to it. Alternatively, if the applicant wishes to challenge on something other than the Grand Challenges designed by JST, it is also possible for the applicant to design the Grand Challenge itself. For details, please refer to "Chapter 2 Call for proposals and proposal selection", ”Chapter 6 Areas and Grand Challenges Targeted for Application”.

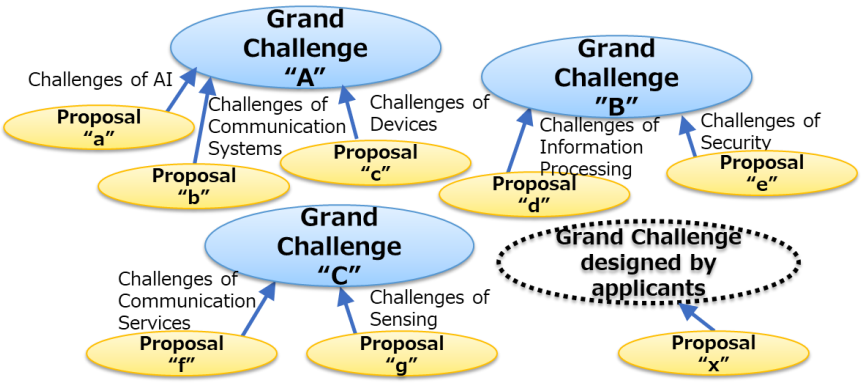


Figure: Approaches to Grand Challenges

The goals of the Grand Challenges are big pictures that are expected to be realized in the future society. The applicant should specifically describe in the research and development proposal what range, what, and how far, and what approach to promote within the research and development period for the goals indicated by the Grand Challenge.

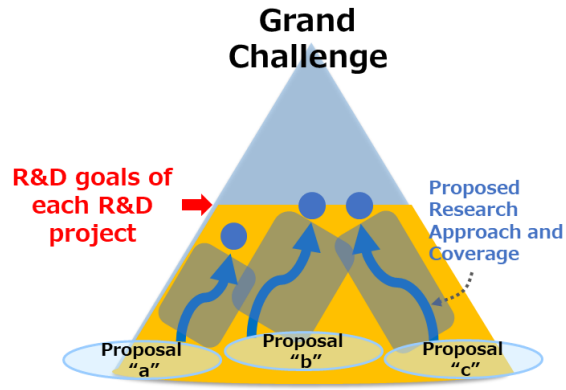
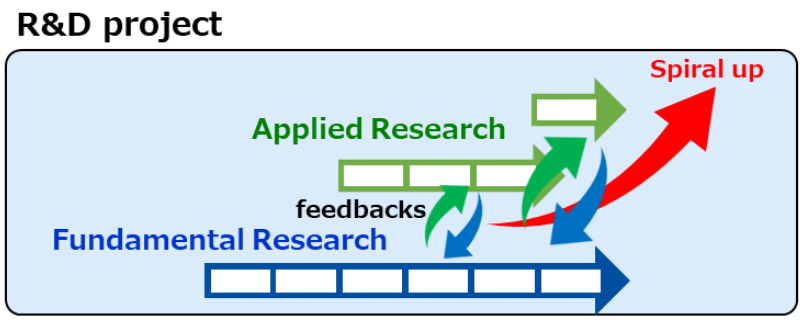


Figure: Relationship between the Grand Challenges and the R&D goals of each R&D project

（3） Operation scheme

The R&D projects in this program consist of "fundamental research" and "applied research" that aims to bridge applications. Based on the characteristics of research and development in information and communication sciences, this program will engage in fundamental research and proof of concept (POC) of the results of that research, which will lead to social change, through an operational scheme that transcends the boundaries between fundamental and applied research. In the process of conducting applied research, if there are matters to be considered in the fundamental research phase, we will aim to spiral up by going back and forth between fundamental and applied research, such as reviewing the research and development plan in fundamental research. In operating, we will collaborate with the National Institute of Information and Communications Technology (NICT), which promotes research and development of information and communication technologies, and other organizations.



- R&D period (overall): within 5.5 years (within 6th years)
- Total R&D budgets (overall): Approx. 220-300 million yen

*Period and budget may vary depending on the evaluation and content of each R&D project.

Figure: Structure of R&D project

a. Fundamental research

Preliminary evaluation of R&D projects will be evaluated centered on the overall concept for the Grand Challenge including the assumption of applied research and the specific contents and plans of fundamental research. In fundamental research, we will promote the creation of results that will create top-level technological breakthroughs internationally for the Grand Challenge, and foster advanced research personnel.

b. Applied research

The selected R&D principal investigator (PI) will offer a distinct plan for a POC to the PO. If the plan is approved, further funding will be allocated and the plan will be put into action. Applied research will be determined through a review of the in-program call for selected PIs. Please note that the implementation of applied research will be approved through a competitive review process, and the timing of the in-program call for proposals and review will be determined by the JST. After the start of R&D, PIs can propose based on the progress of each R&D project. Through software development based on basic theory, theoretical verification using actual data, and demonstration testing in testbeds, the project aims to produce results that, at the end of the research, can be used as a bridge to Ministry of Internal Affairs and Communications (MIC)/NICT projects, promote the creation of university-launched ventures, and lead to research by companies and other entities. Furthermore, when

contemplating future social implementation, it is anticipated that careful thought will be given to factors such as social acceptability, legislation, and regulations. If a R&D project encompasses various applied research advancements, it is possible to generate several proposals. Unfortunately, it is not feasible to assign a research budget for every R&D concern.

※Proof of concept (POC) here means to achieve the requirements to determine whether it can be transferred to corporate research.

(4) Management by PO

Under the detailed management of POs, PIs belonging to universities, public research institutions, companies, etc. will promote research and development. At the start of the R&D, based on the results of the preliminary evaluation and coordination with PO, etc., the R&D goals, etc. may be adjusted from the time of proposal.

After the start of R&D, R&D representatives can flexibly review the R&D plan in fundamental research and optimize the implementation system after approving the R&D plan by PO, etc. In addition, for R&D projects that are proposed and approved for implementation for application in the area of applied research, it is also possible to change the major research and development system such as the introduction of new groups with the approval of POs, etc. for the revised research and development plan.

(5) Research and development system

The PI can organize an optimal R&D team consisting of multiple researchers.

a. In addition to the " Principal Investigator Group " led by themselves, the PI may establish a group consisting of researchers belonging to other laboratories within the Institute or other R&D institutes (the " Co-principal Investigator Group ") if necessary for the realization of the R&D concept. It is also possible to propose single group/individual R&D proposals.

b. When forming a joint R&D group, one of the researchers involved in the group will be appointed as the "Co-principal investigator (Co-PI) " to represent the group.

c. To facilitate R&D, it is feasible to employ researchers, research assistants, and other

personnel and include their expenses within the budget allocated for R&D (within the scope of the collaborative research agreement of the R&D institution) .

For information on the requirements related to the R&D system, please see section "2.6 Application Requirements."

1.1.4 Notes on application

(1) Active participation and development of young researchers

In order to strengthen the information and communication field in our country, it is expected to foster researchers with unique ideas and conceptual skills in the field. As human resources who will be responsible for the future in this field, it is strongly required to train researchers and engineers who are expected to lead the future industry and academia of Japan, including doctoral personnel, in this program. In addition, it is also necessary to raise awareness of graduate students and undergraduate students who are expected to become researchers and engineers in the future. Therefore, we will actively encourage the participation of young researchers in places such as the implementation of research and development in the central position and the direction of research and development, and the participation of master and doctoral students in this program. For details, please refer to "3.5 Responsibilities of research and development principal investigators and co-principal investigators", "4.13 Improving the treatment of doctoral students", "4.14 Ensuring independent and stable research environments for young researchers", "4.15 Promotion of initiatives related to gender equality and human resource development", "4.16 Voluntary research activities of young researchers employed for project implementation", "4.17 Supporting diverse career paths for young researchers".

1.2 Researchers considering application and participation

1.2.1 Contributing to achieving the Sustainable Development Goals

JST is contributing to the achievement of the Sustainable Development Goals!

At the United Nations Sustainable Development Summit held in September 2015, the outcome statement, "**Transforming Our World: The 2030 Agenda for Sustainable Development**," which has the Sustainable Development Goals (SDGs) at its core, was unanimously adopted as a new, more comprehensive global action goal for people, the planet, and prosperity. The 17 goals of the SDGs indicate the various sustainability issues facing humanity and call for solving these issues in an integrated and inclusive manner. It is expected that science, technology, and innovation will provide the scientific evidence necessary to resolve these social issues and suggest better policy decisions. These roles are consistent with the new responsibilities of science, "science in and for society," which were set out in the "Declaration on Science and the Use of Scientific Knowledge and the Science Agenda" (Budapest Declaration*) adopted by the International Scientific Council in 1999. As a core institution promoting Japan's science and technology policy, JST promotes cutting-edge basic research and engages in problem-solving research and development (R&D) that responds to the needs of society. The SDGs are universal goals that can encompass JST's mission, and we would like to co-create them with industry, academia, and the public and private sectors through JST programs, working together with researchers to achieve a sustainable society.

President, Japan Science and Technology Agency

*The Budapest Declaration specifies "Science for knowledge," "Science for peace," "Science for development," and "Science in society and science for society" as the responsibilities, challenges, and obligations for science in the 21st century.

1.2.2 Promoting diversity

JST promotes diversity!

Diversity is an essential component for the promotion of scientific and technological innovations. New perspectives on science and technology can be created through collaboration and discussion with various stakeholders with different specialties and values, regardless of age, gender, or nationality. JST is promoting diversity in all its activities in science and technology to engage in issues facing our future society, strengthen our country's competitive power, and enrich the spiritual happiness of our people. The United Nations SDGs also include many targets deeply involved with topics of diversity, including gender equality, and we are contributing toward resolving issues in Japan and worldwide.

Currently, activities by women are viewed as the "largest potential of Japan" and are positioned at the core of the growth strategy of the Japanese government. Expanding the

participation of women in R&D is also important, and female researchers are indispensable as diverse human resources that support scientific and technological innovation. JST expects female researchers to apply actively. To improve the environment to allow researchers to return to work, JST is constantly improving the existing “Childbirth, childcare, and long-term care support system” by listening to the opinions of researchers who use this system.

The call for and review of new research proposals will also be conducted from a diversity perspective.

We cordially invite all researchers to respond to the call for research proposals.

President, Japan Science and Technology Agency

We are waiting for your application

JST promotes diversity based on the idea that diversity is about understanding people who think differently from you and integrating your ideas with theirs to create new value. This leads to solving domestic issues and issues common to the world. We will address global social issues such as the SDGs by promoting diversity in cooperation with international institutions.

Diversity at JST is for women and young and non-Japanese researchers. To ensure that each researcher can fully demonstrate their abilities, we will continue to provide support for childbirth, childcare, and long-term care and strive to maintain a balanced staffing structure for committees and other activities. We aim to create an environment where several people can work hard together. In particular, we welcome applications from female researchers, from whom we have received few applications in the past, and we will work to create new value.

Japan Science and Technology Agency

Diversity Promotion Supervisor
General Manager, Diversity
Promotion Office

1.2.3 Aiming for fair research activities

Aiming for fair research activities

Recent incidents involving misconduct and dishonesty in research activities have resulted in an alarming situation that threatens the relationship of trust between science and society and hinders the healthy development of scientific technologies. There must be a function of autonomous self-purification in the scientific community to prevent misconduct in research activities. Each researcher must be disciplined and work to create new knowledge and inventions useful for a society based on high moral standards that meet society's expectations.

As a funding agency for research, JST considers research misconduct a serious issue and makes every effort to prevent it in cooperation with relevant organizations to regain public trust.

1. JST believes that fairness in research activities is extremely important for Japan, which seeks to develop itself through science and technology.
2. JST supports honest and responsible research activities.
3. JST strictly condemns any misconduct in research activities.
4. JST will promote education in research ethics and reform its research funding system in cooperation with relevant organizations to prevent misconduct.

We must develop a healthy scientific culture based on social trust to build a society filled with hopes and dreams for a bright future. Therefore, we request the continued understanding and cooperation of the research community and related institutions.

President, Japan Science and Technology Agency

Chapter 2　Call for proposals and proposal selection

2.1 Areas/Grand Challenges targeted for call

(1) Areas targeted for call

This program calls for R&D proposals covering a wide range of technical areas in information and communication sciences. Issues that cannot be resolved by technical innovation based on conventional common sense or by innovation in specific technical areas are emerging as technical needs, becoming more diverse and complicated. Through efforts to achieve the Grand Challenges, this program aims to promote collaboration and integration between different technical areas, including personnel exchanges.

Technology categories will be established for the areas. Two areas, one focusing on the information and communication area and the other on the information processing area, are defined, and the PO of each area manages the area. Each area will encompass multiple technological fields and hierarchies, and the two areas will promote research and development in collaboration with each other.

Please refer to the application guidelines "Chapter 6:Areas and Grand Challenges Targeted for Application " for policies regarding each area and PO selection. When making a proposal, in Form 1 “R&D proposal cover” please select the area for which you are applying and the main technology category (Main technology categories refer to R&D proposals with high originality, R&D proposals with a large center of gravity, etc.).

In addition, by coordination with PD and PO, depending on the content of the selected the Grand Challenge and R&D proposal, it may be selected in a different area than the applied area. In this case, we will contact you individually.

Areas	AREA 1 Mainly in the area of information and communication	AREA 2 Mainly in the area of information processing
Program Officer (PO)	NAKAO Akihiro (Professor, The University of Tokyo)	KAWAHARA Yoshihiro (Professor, The University of Tokyo)

Main technology categories (TC) included in the area	TC1: Communication Service TC2: Information and Communication Infrastructure (sensing, collection, encoding, compression, recognition, classification, optimization, control, and learning related to communication) TC3: Network Security (cyber attack/security operation system) TC4: Devices and communication principle (radio wave, light, quantum communication)	TC5: Information Service TC6: Information Processing Infrastructure (sensing, collection, encoding, compression, recognition, classification, optimization, control, and learning related to information processing) TC7: Information Security (encryption/authentication/privacy) TC8: Device and calculation principle (electronic, optical, quantum circuits)

(2) Grand Challenges targeted for call

This program aims to encourage innovative R&D by presenting a significant problem. We are currently seeking proposals that offer novel approaches to address this difficulty. Please refer to "1.1.3 Program features and operation scheme" for the concept of the Grand Challenges. We welcome R&D proposals regarding innovative challenges that are not bound by existing assumptions.

The Grand Challenges for the FY2024 application are as follows. The Grand Challenges define as common to both areas. For details on the Grand Challenges, please refer to the application guidelines, "Chapter 6: Areas and Grand Challenges Targeted for Application." When applying, please indicate and provide a detailed description of the Grand Challenge you are targeting in Form 1 “R&D proposal cover” .

If the applicant wishes to challenge on a Grand Challenge other than GC1 to GC10, this new Grand Challenge can be design as GC00. When considering a proposal as GC00, be sure to write the title and summary of the proposed GC in Form 1 “R&D proposal cover”.

The Grand Challenge will be reviewed according to future R&D trends, industrial trends, social needs, etc.

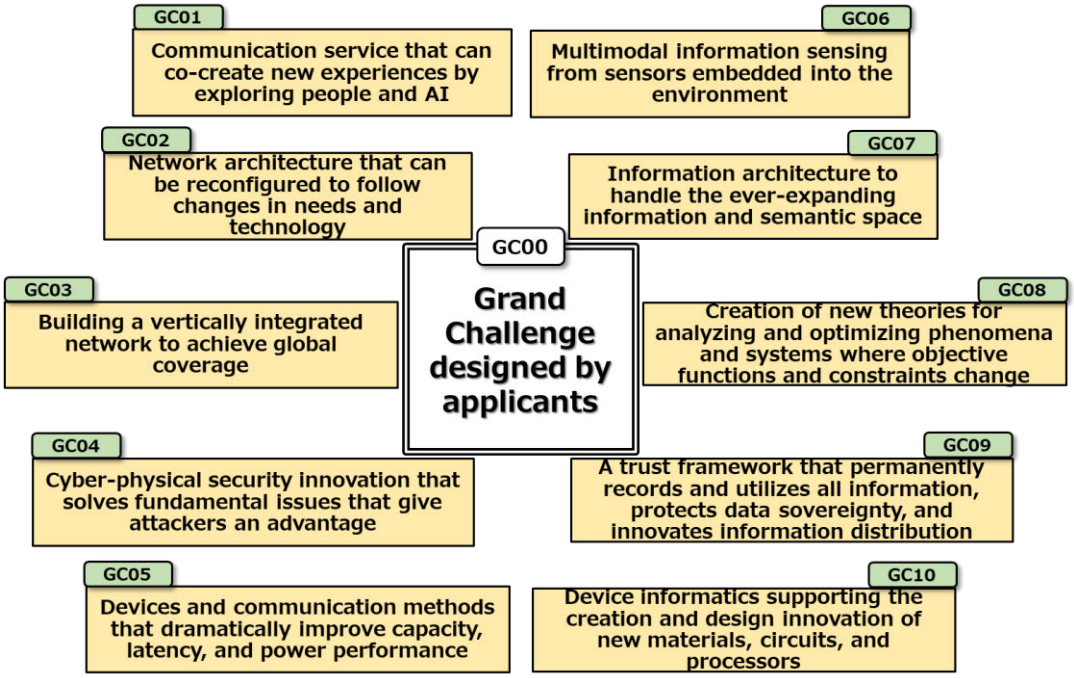


Figure: Grand Challenges in FY2024

2.2 Call period and proposal selection schedule

The following is the schedule for the selection of R&D proposals for FY2024:

Start of call for proposals	April 25, 2024 (Thursday)
Deadline for R&D proposal submission (Reception deadline via e-Rad)	June 20, 2024 (Thu) 12:00(noon, Japan Standard Time)
Document review	Mid-July to late July
Interview for applicants who pass the document review	Mid-August to late August
Notification of results	Mid-September to late September
Start of R&D	Early October onwards

※1 All dates except for the start of the R&D proposals and the deadline for acceptance are tentative. These dates may change in the future.

※2 Please be sure to check the call information page for the latest information on how to apply, the schedule for the application briefing session, how to participate, etc.

※3 The specific date and time for the interview will be determined by JST. We will inform you on the Call Information Page as soon as the interview schedule and the e-mail contact date to the interview for applicants who pass the document review are decided.

Call Information Page: https://jst.go.jp/kisoken/cronos/koubo/index.html

2.3 R&D period

The R&D project is scheduled to span a total of five and a half years, starting from October 2024 and ending in March 2030 (with the possibility of extending to the end of the sixth year).

The actual R&D period will be determined by examining and approving the R&D plan for the R&D project.

Please note that applied research may be conducted during this R&D period.

2.4 R&D Budgets

The total R&D budgets for the entire R&D project is approximately 220 million yen to 300 million yen.

The R&D budgets consist of fundamental research and applied research R&D budgets.

When applying, applicant can set the following upper limits.

In addition, **please include only the plan for R&D budgets for [Fundamental research] in the R&D proposal.**

[Fundamental research] Upper limit: 27 million yen/year (direct costs)

In addition to the above, it is possible to apply for an additional amount of up to 8 million yen in the first year (FY 2024) and 4 million yen in the second year for budgets necessary for initial environment preparation, etc.

[Applied research] Upper limit: 20 million yen/year (direct costs)

These are additional costs for selected R&D projects. Regarding applications for applied research, we will contact the PIs after adoption.

※Proposed R&D budgets will be assessed during the selection process.

※Actual R&D budgets will be determined based on review and approval of the R&D plan.

※Separate adjustments may be made during the research period based on the research progress status, etc. (For details, please refer to "3.1 Creating an R&D plan").

※JST will pay R&D costs (direct costs) and indirect costs (up to 30% of direct costs) as collaborative R&D costs to the R&D institution based on the collaborative research agreement.

※Applied research will be determined through a review of the in-program call for selected PIs. Please note that the implementation of applied research will be approved through a competitive review process, and the timing of the in-program call for proposals and review will be determined by the JST.

2.5 Number of R&D Projects to be selected

We are planning to adopt approximately 18 projects in total.

※The number of projects vary depending on the application status of R&D proposals, budget, etc.

※We do not guarantee that proposals will be selected for all Grand Challenges.

2.6 Application Requirements

The application requirements are as follows 2.6.1 to 2.6.3. Please note that if you do not meet these requirements, your submission will handle as follows.

- If it is determined that the application requirements are not met by the time of selection, the R&D proposal will, in principle, be rejected or not adopted.
- If the application requirements are adopted, they will be maintained during the entire R&D period of the R&D project. If the requirements are not met during the R&D period, in principle, all or part of the R&D projects will be terminated (cancelled) early.

In addition to the following 2.6.1 to 2.6.3, please apply after understanding the contents described in "2.7.2 Restrictions on duplicate applications " and "Chapter 4 :Points to be noted regarding application"

2.6.1 Applicant requirements

a. The applicant, who is the representative of R&D, must be belonged to a domestic research institution (including private companies, associations, foundations, etc.) and conduct R&D at the research institution (the nationality of the applicant does not matter).

※The following people can also apply as applicant :

- Foreign researchers affiliated with domestic research institutions.
- If you are a researcher who is not currently affiliated with a specific research institution or is affiliated with an overseas research institution and is selected as PI; those who are capable of affiliation with a research institution in Japan to conduct R&D (regardless of nationality).

※Researchers affiliated with research institutions other than universities, such as private companies, are also eligible.

b. The applicant must be a researcher who can assume responsibility for the entire R&D project as the person in charge of the R&D project.
(For details, please refer to "3.5 Responsibilities of research and development principal investigators and co-principal investigators")

c. The applicant must have previously completed a research ethics education program at their affiliated research institution. Alternatively, the applicant must have completed the educational program provided by JST by the application deadline.
(For details, please refer to "4.1 Enrolling in and completing the Educational Program on Research Integrity")

d. The applicant must be able to pledge the following four points.

- Understand and comply with the contents of the “Guidelines for Responding to Misconduct in Research Activities (Decision by the Minister of Education, Culture, Sports, Science and Technology, August 26, 2014).”
- Understand and comply with the contents of the “Guidelines for Management and Audit of Public Research Funds at Research Institutions (Implementation Standards) (revised on February 1, 2021).”
- If an R&D proposal is adopted, PI and R&D participants must not engage in any

misconduct in research activities (fabrication, falsification, or plagiarism) or misuse of research funds.

- No misconduct in research activities has occurred in the past research results described in this R&D proposal.

  ※Please check on the e-Rad call information input screen.

2.6.2 R&D system requirements

a. The R&D team shall be the optimal structure for realizing the R&D concept of the applicant who will be the PI.

b. If a joint R&D group is assigned to the R&D team, the joint R&D group must be indispensable for realizing the R&D concept and can make a significant contribution to achieving the research objectives.

c. If a researcher affiliated with an overseas research and development institution participates as Co-PI, to achieve the R&D goals, conducting R&D without the relevant overseas R&D institution is difficult (PO approval is required). In this case, it is possible to understand the results of intellectual property rights, etc.

   ※We welcome collaboration with overseas research groups when proposing this program. However, generally, JST does not provide research and development funds for groups affiliated with overseas research institutions, so they are required to secure their own research and development funds.

   In exceptional cases, if it is recognized that it is essential for overseas research institutions to participate as a joint R&D group (researchers affiliated with overseas research institutions participate as Co-PI) to realize the research concept, JST will provide R&D funds to the research group. If you wish to form a research team that includes overseas research institutions (PO approval is required), please write the team composition of overseas R&D institutions in the joint R&D group of the R&D proposal (R&D implementation structure (Form 4-2)). In "Special Notes," please state the reason why you need a researcher affiliated with an overseas R&D institution. In addition, even in proposals that assume R&D funding from JST, if a contract cannot be concluded, please also include a proposal for collaboration with the group in the R&D proposal (R&D Implementation Structure (Form 4-2)).

   Furthermore, overseas research institutions must, in principle, enter into a

collaborative research agreement with the content provided by JST. Please note that, taking into consideration the characteristics of the research content, it may be possible to adjust the terms of the contract for matters that are deemed to be reasonable. However, the adjustment period will be up to three months after JST starts negotiations. Additionally, please note that researchers may need to provide explanations to the person in charge of the contract at the overseas research institution.

The contact information of the department manager in charge of the contract at the overseas research institution should be written in the R&D proposal (R&D implementation structure (Form 4-2)). Please submit the prescribed form separately designated by JST showing that you, as a research and development institution (department manager in charge of the contract), have approved each clause in the contract before the interview screening (the secretariat will contact you during the selection process). The form will be posted on the call information page (https://www.jst.go.jp/kisoken/cronos/koubo/index.html) later.

Please also refer to “3.6 Research and development institution responsibilities” It is also necessary to be able to understand the intellectual property rights and other achievements of the entire research team, including overseas research groups. In addition, if a research contract cannot be concluded within the adjustment period and it is difficult to implement the collaboration plan, the research will not be implemented.

※Regarding collaborative research agreement templates for overseas institutions, please access the page for the research area to which you are applying from the URL below, and refer to "Reference materials" in the "How to apply" section.
https://www.jst.go.jp/kisoken/cronos/koubo/index.html

2.6.3 Requirements for Research Institutions

Research institutions must fully recognize that the collaborative research costs are public funding and ensure compliance with related laws and regulations and make efforts to implement the R&D efficiently. Research and development at research institutions that cannot fulfill the responsibilities listed in "3.6 Research and development institution responsibilities" will not be permitted. When applying, please be sure to obtain prior

approval from the research institution where you plan to conduct research and development.

2.7 Proposal Submission

2.7.1 R&D proposal (form) entry guidelines

Please download the form from the public call information page below and create an R&D proposal according to the filling instructions (written in blue within the R&D proposal).

Call Information Page: https://jst.go.jp/kisoken/cronos/koubo/index.html

The list of documents to be submitted is as follows.

Form number	Document name
Form 1	R&D proposal cover
Form 2	Summary of R&D proposal
Form 3	Overall Plan of R&D Project, System and Schedule for Fundamental Research
Form 4	R&D implementation system
Form 5	R&D Budget Plan
Form 6	List of Achievements
Form 7	Research grants from other systems, etc.
Form 8	Special Note

※Please create a file size within 3 MB.

※Please be sure to check “2.8.2 Implementation of conflict-of-interest management” when creating an R&D proposal.

※For information on how to apply for R&D proposals, please refer to "Chapter 5: Submission via Cross-Ministerial R&D Management System (e-Rad)".

※When applying, please understand "Chapter 4: Points to be noted regarding application" and "2.7.2 Restrictions on duplicate applications”.

2.7.2 Restrictions on duplicate applications

(1) You can only apply for one R&D principal investigator (PI).

(2) Regarding R&D proposals, following are the restrictions when participating in R&D as Co-principal investigator (Co-PI):

a. It is not possible for PI and Co-PI to switch places and submit multiple applications.

b. If you apply as PI or Co-PI and also apply as Co-PI in another R&D proposal, and both R&D projects are adopted, adjustments may be made such as reducing R&D budgets or not allowing the researcher to participate in some R&D projects based on the discretion of the PO upon consideration of the content and scale of R&D.

2.8 Selection process

For the selection schedule, please refer to "(1) Schedule of call and selection" at the beginning of this page.

2.8.1 Flow of selection

For each area, the PO will conduct the selection process through document review and interview with the cooperation of ADs. We may also seek the cooperation of external evaluators.

Additionally, during the selection process, investigations other than those listed above may be conducted as necessary. In addition, if the applicant or the Co-PI belongs to a for-profit organization, etc., we may request the submission of the financial statements of the affiliated institution.

Based on the above selection, JST will select PI and R&D project.

The name of ADs will be announced on the call information page as soon as it is decided.

Call information page: https://jst.go.jp/kisoken/cronos/koubo/index.html

2.8.2 Implementation of conflict-of-interest management

The management of conflicts of interest is based on the provisions of JST from the perspective of a fair and transparent evaluation and the distribution of research funds.

(1) Conflict of interest management of individuals involved in the selection process

To ensure fair and transparent evaluations, the following individuals and parties with conflicts of interest with the R&D applicant will not be involved in the selection process. If you have any concerns about the individuals involved in the selection process, please specify them in the notes section of the proposal.

a. Individuals who are relatives of the R&D applicant.

b. Individuals or parties affiliated with the same department or major at an R&D institution, such as a university, as the R&D applicant; officers or other individuals deemed to be involved in the management of the university to which the R&D applicant belongs or the corporation that manages the university.

c. Individuals who belong to the parent company of the firm to which the R&D applicant belongs.

d. Individuals who conduct close collaborative research with the R&D applicant (e.g., individuals who are conducting a joint research project or have co-authored a paper with the R&D applicant, researchers pursuing the same research objectives as the R&D applicant, co-researchers of the proposal of the R&D applicant, and others recognized as practically affiliated with a research group to which the R&D applicant is affiliated).

e. Individuals in a close teacher-student relationship or a direct employer-employee relationship with the R&D applicant.

f. Individuals in academic competition with the research subject of the R&D applicant or those who belong to a company in a competitive relationship on the market.

g. Individuals in other relationships judged by JST to represent conflicts of interest with the R&D applicant.

(2) Conflict of interest management of R&D applicants

When an R&D applicant specifies an “organization in relation to the R&D applicant” as a joint R&D group and if JST allocates some research funding to the “organization in relation to the R&D applicant,” this may lead to some conflict of interest concerning the R&D applicant. Therefore, to avoid any doubt of the like of any third party, we regard the management of such conflicts of interest with respect to those between the R&D applicant and the “organization in relation to the R&D applicant,” appropriately

considering the necessity, rationality, and adequacy of the applicable relationship.

Here, an “organization in relation to the R&D applicant” refers to any joint R&D group that falls under any of the following conditions. Note that items “a” and “b” below apply to the R&D applicant and their spouse and first-degree relatives (collectively referred to as “R&D applicant”).

a. Organization founded on the R&D results of the R&D applicant (includes cases in which the R&D applicant does not have any direct relation to the management of the organization but is appointed as a technical advisor and in which the R&D applicant only has some stocks in the organization)
b. Organization in which the R&D applicant is appointed as a director (including CTOs and excluding technical advisors).
c. Organization in which the R&D applicant owns stock.
d. Organization from which the R&D applicant obtains revenue as a license fee.

The R&D selection committee reviews the necessity, rationality, and adequacy of the “organization in relation to the R&D applicant” as a joint R&D group.

Therefore, if the “organization in relation to the R&D applicant” is set as a joint R&D group, the “organization in relation to the PI” is included as a joint R&D group in the column for special remarks in the proposal (Form 8 “Special Note”).

Additional documents may be requested to manage the conflict of interest of the R&D applicant.

(3) Conflict-of-interest management of JST

The selection of a company in which JST has invested (“invested company”) and the distribution of research funds to it may constitute a conflict of interest for JST (conflict of interest as an organization). Therefore, JST will implement conflict of interest management to avoid doubts from third parties regarding the conflict of interest between JST’s invested companies.

The R&D selection committee reviews the necessity, rationality, and adequacy of selecting the invested company of JST as a participating institution.

Therefore, if the invested company of JST is set as a participating institution, the invested company is included as a participating institution in the column for special remarks in the proposal (Form 8 “Special Note”).

This conflict-of-interest management is conducted to ensure the fairness and transparency of the process by JST, and it is not disadvantageous in the process of project selection in this program. We ask for your cooperation in JST’s conflict of interest management.

- Companies for which investment has been terminated are not subject to conflict-of-interest management and need not be declared. Please refer to the following website for JST’s invested companies:

https://www.jst.go.jp/entre/result.html#M01

- The standard date for the declaration is when the call for proposals for this program began. Please declare companies that have announced investments from JST as of the relevant date. Companies that have been selected for investment but have not yet been announced need not be declared due to JST’s internal confidentiality policy.
- Please refer to the following website for the announcement of JST investments:

https://www.jst.go.jp/entre/news.html

2.8.3 Interview and notification of result

a. As a result of the document review, applicant who are passed for an interview will be notified of this and will be informed of the interview process, schedule, and additional materials to be submitted. At that time, we may ask you to submit application forms, plans, etc., for other research funds. In addition, depending on the results of document review and surveys, JST/PO may contact interview candidates with matters to be addressed or explained at the time of interview. If the applicant or the Co-PI is affiliated with a for-profit organization, etc., the applicant may be requested to submit financial statements of the affiliated organization.

The schedule for interview and the date for email notification to interview candidates will be announced on the call information page below as soon as they are decided.

Call information page: https://jst.go.jp/kisoken/cronos/koubo/index.html

b. During the interview process, the applicant will be asked to explain the content of their proposal. In principle, the interview will be conducted in Japanese, but if it is difficult to conduct the interview in Japanese, the interview can be conducted in English.

c. For R&D proposals that are candidates for adoption, adjustments may be made to the conditions regarding the research and development plan, organization, and collaborative research agreement. If the conditions cannot be agreed upon, the proposal will be rejected.

d. Selected applicants will be notified of this and will be guided through the procedures for starting R&D.

e. Rejected applicants will be notified of the results and reasons for rejection once all selection has been completed.

2.9 Selection perspectives

The selection criteria for this program are as follows. (The proposal must satisfy all items 1 to 4)

Evaluation criteria (Preliminary Evaluation Standards)
1. The overall R&D concept • The proposal match the purpose of this program and area. • It is expected to create innovative information and communication technologies that can realize major social changes in the future society.
2. The superiority and uniqueness of the proposal • The content of the technology is challenging and is not an extension of conventional technology, and it is possible to expect dramatic development in science and technology. • Based on domestic and overseas research and development trends, the proposal have an advantage and uniqueness.
3. R&D plan • The R&D plan is appropriate in place to achieve the goals shown by the Grand Challenge.

• The research proposer have a track record of research necessary to carry out the research, and they have obtained the necessary clues to realize the research concept. • The R&D budget plan sufficient for realizing the research concept of the research applicant.
4. R&D system • The R&D system and its division of roles are appropriate for achieving the goals. • The R&D principal investigator demonstrate leadership and management to achieve the goals, including fostering researchers with unique ideas and conceptual skills in the relevant field. • There is a system in place to fully utilize intellectual property rights, research data, other intellectual property rights, and research and development results such as research data.

<Supplement>

(1) For details on areas and grand challenges, please refer to "Chapter 6: Areas and Grand Challenges Targeted for Application." It also describes the selection and management policies for each PO.

(2) Whether there is an “unreasonable duplication” or “excessive concentration” of R&D costs will also be a factor in the selection. For more information, please refer to “4.2 Measures against unreasonable duplication and excessive concentration.”

Chapter 3　Proceeding with research after selection

3.1 Creating an R&D plan

a. After selection, the PI will create an R&D plan (R&D items, implementation plan, R&D budgets, R&D structure, etc.) for the entire R&D period and for each year. Proposed R&D budgets will be assessed through a selection process.

b. Regarding applications for applied research and R&D plans, etc., we will contact the PI after selection. The PI whose applied research has been approved will create an R&D plan that adds the R&D plan for applied research to the fundamental research R&D plan. Applied research will be determined through a review of the in-program call for selected PIs. Please note that the implementation of applied research will be approved through a competitive review process, and the timing of the in-program call for proposals and review will be determined by the JST.

c. The R&D plan will be determined after confirmation and approval by the PO. The PO provides advice and adjustments to the R&D plan, as well as provides instructions as necessary, based on the selection process, exchanging opinions with the PI, understanding research progress, and the results of project evaluation.

d. When deciding on the R&D plan, the PO may give instructions on collaboration on R&D issues, etc., to achieve the Grand Challenge.

e. The R&D budget and R&D system may be reviewed during the R&D period depending on the overall budget situation of this program.

3.2 Research and development agreement

a. Once a research project is selected, JST will conclude an R&D agreement with the R&D institutions to which the PIs or Co-PIs belong.

b. If an R&D agreement cannot be concluded with the R&D institutions, a management and audit system required for the public research costs cannot be established, or if the financial situations of the institutions are noticeably unstable, it may not be possible to implement the research at the applicable R&D institution.

- Please refer to “3.6 Research and development institution responsibilities”. Research and development institution responsibilities.” for details.

c. As a general rule, patents and other intellectual property rights generated through research reside, in accordance with the R&D agreement, with the R&D institutions under the condition that the R&D institutions abide by the items provided by the Industrial Technology Enhancement Act Article 17 (Japanese version of the Bayh-Dole Act).

*Deleted for programs where international organizations are not expected to participate.

d. Joint research agreements are concluded with international R&D institutions. Intellectual property rights will be shared equally with JST on the condition that the necessary costs for application and maintenance will be borne equally (if not in agreement with these terms, then the rights will reside with JST).

- Please refer to "3.6 (2). Cases where the R&D institution is an international institution" for details.

3.3 Research costs

Based on the R&D agreement, JST will add indirect costs (30% of direct costs as a general rule) to research costs (direct costs) and pay them to R&D institutions as commissioned research costs.

3.3.1 Research costs (direct costs)

Research costs (direct costs) are those directly related to and required for research implementation and can be spent for the following purposes.

a. Commodities: Costs for purchasing new facilities (*1), supplies, and consumables.

b. Travel expenses: Costs for travel by PI, Co-PIs and R&D participants listed in the research plan.

c. Personnel expenses and honoraria: Personnel expenses and honoraria for research participants (excluding PI, Co-PIs (*2)).

d. Others: Costs for publishing research outcomes (e.g., paper submission fees), equipment leasing, and transportation (*2).

*1: The purchase of new research facilities and equipment will proceed according to the "Research Facilities and Equipment Sharing System for Research Organization Units" ("equipment sharing system"), which will operate based on the "Introduction of New Research Facilities and Equipment Systems Operating Integrally with

Research Organization Management" (Advanced Research Fundamentals Working Group, Council for Science and Technology, November 2015).

- Please refer to "4.12 Promotion of sharing of research facilities and equipment" for details.

(Note) Examples of costs that cannot be handled as research costs (direct costs)

・Costs for items not consistent with the research objectives.

・Costs considered to be more appropriately handled as indirect costs.

・Costs that JST judges as inappropriate for use in the settlement of commissioned research costs (*).

*JST has established rules and guidelines specific to this program for some items based on the R&D agreement document, official administration manual, and Cross-Ministerial Expenses Handling Partitioned Table. Additionally, handling may differ between universities (universities, public R&D institutions, and public interest corporations recognized by JST) and companies (mainly private companies and other R&D institutions other than universities). Please refer to the latest official administration manual and other documents at the following URL for details:

https://www.jst.go.jp/contract/index2.html

*2: As a general rule, in a university, the person serving as the R&D principal investigator ("PI" in this section) of a project receiving JST competitive research funds can use the funds for personnel costs or the costs of someone conducting duties other than research (buyout costs) or both, as long as certain requirements are met. Please refer to the following list of requirements.

○ Revision of the Direct Costs to Allow Expenditures for Non-Research Activities on Behalf of Researchers (Introduction of a Buyout System) and Expenditures of Personnel Expenses for Principal Investigators (PIs) from Direct Costs (Liaison) (September 17, 2020):
https://www.jst.go.jp/osirase/2020/pdf/20200917.pdf

○ The scope of application for this program and expenditure limits will be announced on

the program website at a later date.

3.3.2 Indirect costs

Indirect costs are costs required for the management of R&D institutions implementing research; as a general rule, they are capped at 30% of direct costs. According to the Common Guidance for the Execution of Indirect Costs of Competitive Research Funds (agreement of Liaison Committee of Relevant Ministries and Agencies on Competitive Research Funding on April 20, 2001, and revised on May 31, 2023), a policy on use will be created and executed systematically and properly to ensure the transparent use of indirect costs.

3.3.3 Multi-year agreements and carryover system

From the perspective of more effective and efficient use of research costs for maximizing research outcomes and preventing fraud, JST has adopted a multi-year contract for R&D agreements to enable the carryover and procurement agreements spanning multiple fiscal years. Notably, in the case of the carryover system, there may be cases in which multi-year agreements and carryovers are not allowed due to the differences in its handling between universities and companies, the administrative management system of the research institution, and other reasons.

3.4 R&D project evaluations

a. The PO will monitor the progress of R&D and R&D results, and with the cooperation of the AD, the PO will conduct applied research reviews, interim evaluations, and ex-post evaluations of R&D projects.
b. Even after the implementation of applied research is approved, the PO, with the cooperation of the AD, etc., determines whether to continue each year.
c. If the R&D period is five and a half years, an interim evaluation of R&D projects should be carried out approximately three years after the start of R&D, and ex-post evaluation should be carried out as soon as possible after the end of the research or at an appropriate time before the end of the research, depending on the characteristics and stage of development of the research.

d. In addition to the above, R&D project evaluations may be conducted at times deemed necessary by the PO.

e. The results of the project evaluation will be made public and will be reflected in future adjustments to research plans and resource allocation (including increases and decreases in research funds, reviews of research team composition, etc.). Depending on the evaluation results, measures such as early termination (cancellation) of the research project or adjustments between research projects will be taken.

f. After a certain period of time has passed after the completion of R&D, follow-up evaluations may be conducted based on the progress and utilization of the R&D results, the activities of participating researchers, etc.

g. In addition to R&D project evaluations, PD and POs may be evaluated for program evaluations from the perspective of the program purpose, progress toward achieving the Grand Challenges, operational status, etc. The PIs will be required to provide various information and conduct interviews to the extent deemed necessary for the evaluation.

(Reference) Perspectives on Applied Research review
1. The results of fundamental research • R&D results been produced that form the basis of applied research.
2. The overall concept of applied research • Appropriate goals and milestones been set for the POC to achieve the goals set forth in the Grand Challenge.
3. The superiority and uniqueness of the proposal • The content of the technology is challenging and is not an extension of conventional technology, and it is possible to expect dramatic development in science and technology. • The proposal have superiority and originality based on domestic and international research and development trends.

4. R&D plan • Appropriate research periods and research budgets are in place to achieve the set goals and milestones.
5. R&D system • The R&D system and its division of roles are appropriate for achieving the goals. • The R&D principal investigator demonstrate leadership and management to achieve the goals.

※ Applied research will be determined through a review of the in-program call for selected PIs. Please note that the implementation of applied research will be approved through a competitive review process, and the timing of the in-program call for proposals and review will be determined by the JST.

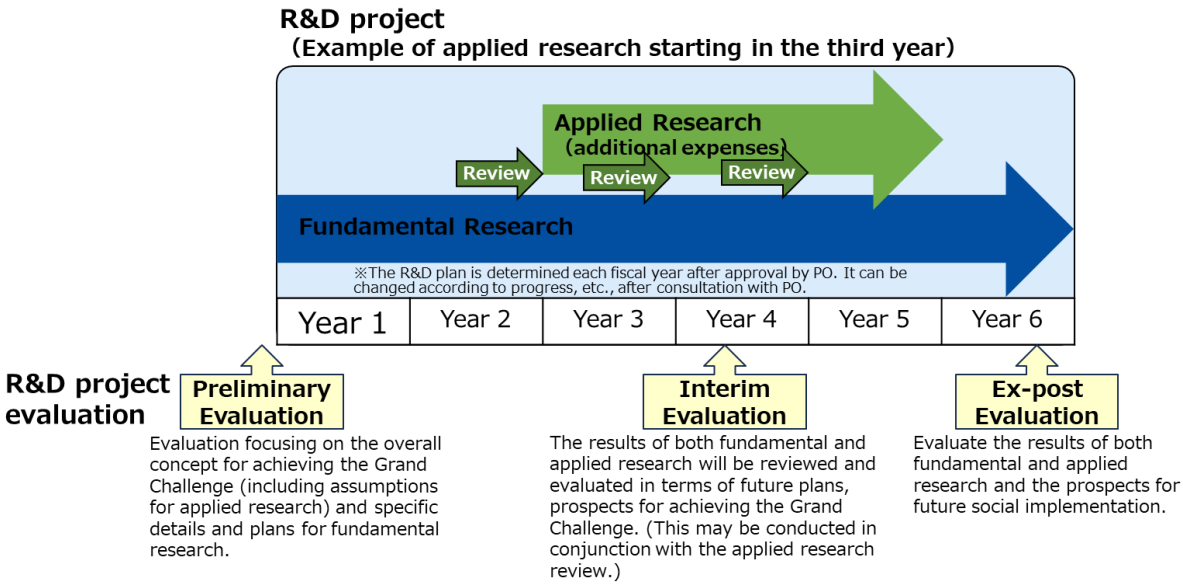


Figure: R&D projects evaluations

3.5 Responsibilities of research and development principal investigators and co-principal investigators

3.5.1 Notes on Research and Development Promotion

(1) The R&D principal investigators (PIs) and co-principal investigators (Co-PIs) must ensure that their R&D team or entire research group is utilizing R&D costs and

conducting their R&D fairly and effectively, with the complete understanding that their research is funded by tax revenues collected from citizens.

(2) The PIs must agree to fulfill the following duties presented to them at a JST briefing and submit an agreement to JST after their proposed R&D project has been selected:

a. Comply with application guidelines and other requirements of the affiliated institution.

b. Understand that tax revenues from citizens cover JST R&D costs and do not engage in improper behavior (fabrication, falsification, plagiarism) during R&D activities or improper use of the R&D costs.

c. Ensure that all the researchers are informed of the JST-designated Educational Program on Research Integrity (eAPRIN (ex-CITI Japan) e-learning program), which is designed to prevent misconduct in R&D activities and improper use of R&D costs.

(3) The PI and research participants must complete the JST-designated Educational Program on Research Integrity (eAPRIN (ex-CITI Japan) e-learning program), which is designed to prevent misconduct in R&D activities and improper use of R&D costs. If the Educational Program is not completed, R&D costs may be suspended until confirmation of completion. Please refer to “4.1. Enrolling in and completing the Educational Program on Research Integrity” for details.

(4) Research and development promotion and management

a. The PIs are responsible for overall R&D, including planning and implementing R&D plans. They are also responsible for cooperating with R&D institutions to create the R&D implementation locations and environments needed to promote R&D. If it is determined that the R&D location or environment poses a serious hindrance to the promotion of R&D, measures such as canceling the R&D project may be taken.

b. The PIs are responsible for submitting R&D plans and research reports and evaluating R&D projects. They are also responsible for reports describing their research progress to the JST secretariat and POs upon request.

c. The PIs are responsible for providing diverse information and responding to interviews for evaluations related to this program and follow-up evaluations conducted after the completion of the R&D.

(5) The PIs should appropriately manage and operate R&D projects and R&D costs (expenditure plans, progress management, and administrative procedures) together with the R&D institutions. They should also manage those participating in R&D. The principal co-researchers should manage the allocated R&D costs (expenditure plans, progress management, and administrative procedures) together with the R&D institution. If a student participates, the supervisor will also be responsible as an R&D implementer under the R&D agreement with JST. For example, if a student is engaged in misconduct, the student and the supervisor will be held responsible.

(6) The PIs should consider the R&D environment, work environment, and conditions of research participants and researchers hired for the R&D costs.

(7) The PIs must proactively support young postdoctoral fellows hired with the R&D costs to secure diverse career paths domestically and internationally. An activity plan[1] to support diverse career paths for young postdoctoral fellows hired with the R&D costs will be confirmed at the interview screening.
Please refer to "4.13 Improving the treatment of doctoral students," "4.14 Ensuring independent and stable research environments for young researchers," "4.15 Promotion of initiatives related to gender equality and human resource development," and "4.16 Voluntary research activities of young researchers employed for project implementation" for details.

(8) Researchers must abide by the R&D agreement entered by JST, the R&D institutions, and JST's various rules.

(9) Researchers must work with JST to conduct accounting examinations, accounting audits by the national government, and other similar activities.

(10) Notably, JST will provide R&D project names, R&D project participants, commissioned

[1] Some of the activities under this activity plan may be included in the research effort.

R&D costs, and other required information to the Cross-Ministerial R&D Management System (e-RAD) and the Cabinet Office (“4.30 Handling of information on projects and other items on e-Rad”). PIs may also be asked to provide various information.

3.5.2 Responsibilities regarding research and development results

a. The R&D projects implemented under this program are funded by the national government. To transfer the R&D results smoothly to society and industry, please promote the appropriate acquisition of intellectual property rights and actively use them in presentations of R&D results domestically and internationally. As a general rule, intellectual property rights should be requested (or applied for) through the affiliated institution based on the R&D agreement.

b. When presenting R&D results obtained through the implementation of R&D in a paper, please state that the R&D results are the results of this program.

c. Based on the JST’s Basic Policy Regarding the Handling of Research Results for Open Science Promotion, all researchers selected for priority call themes and technical themes should submit a Data Management Plan to JST that summarizes the storage/management of research data resulting from the research results, its disclosure/non-disclosure, and operational guidelines for research data that can be published according to the following items together with the R&D plan. Please also appropriately store, manage, and disclose (limited disclosure/non-disclosure) data. Please refer to the JST’s Basic Policy Operation Guidelines Regarding the Handling of Research Results for Open Science Promotion below for details on the entry items: https://www.jst.go.jp/pr/intro/openscience/guideline_openscience.pdf

   Entry items in the data management plan:

   - Storage and management policy for research data to be managed
   - Policy regarding disclosure/non-disclosure of research data
   - Method and system for providing research data that can be disclosed
   - Assumed usage of disclosed research data
   - Efforts to promote the utilization of disclosed research data
   - Other items to be notes

d. Researchers must participate in workshops and symposiums hosted by JST domestically and internationally, as well as interdisciplinary activities and outreach activities aimed at promoting collaboration and synergistic effects in R&D in technological fields, and present their R&D results. Additionally, they must actively engage in global activities

and dissemination in their R&D activities.

3.6 Research and development institution responsibilities

R&D institutions must fully recognize that the research costs are public funding, ensure compliance with related laws and regulations, and implement the research efficiently. Research will not be allowed to be conducted at R&D institutions that cannot fulfill the responsibilities listed below. Therefore, please ensure that prior approval is obtained from all R&D institutions where research is planned to be implemented ("participating institutions") when applying.

(1) Cases where the R&D institution is domestic

a. As a general rule, R&D institutions must conclude a research agreement with the contents proposed by JST. They are also obliged to conduct research appropriately in accordance with the research agreement, administration manual, and research plan. If a research agreement cannot be concluded or if JST judges that research at the applicable R&D institution will not be appropriately conducted, the implementation of the research at the applicable R&D institution will not be approved.

※ Please refer to the URL below for the latest R&D agreement template:
https://www.jst.go.jp/Enter different URLs depending on the Program

b. R&D institutions are obligated to establish a system for managing and auditing public research costs based on the Guidelines for the Management and Audit of Public Research Funds in Research Institutions (Practice Standards) (decided by the Minister of Education, Culture, Sports, Science and Technology on February 15, 2007; revised on February 1, 2021) and strive to execute the commissioned research costs properly. In addition to reporting the status of their management and audit system for public research costs to the Ministry of Education, Culture, Sports, Science and Technology, R&D institutions are obligated to be cooperative in various investigations into their system implementation and other related matters (4.27 (1) System implementation of the "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. According to the Guidelines for Responding to Misconduct in Research (August 26, 2014, adopted by the Minister of Education, Culture, Sports, Science and Technology), R&D institutions must implement regulations and systems necessary for preventing research misconduct. Furthermore, R&D institutions are responsible for responding to various investigations relating to the system implementation based on the applicable guidelines (4.28 (1) “System implementation based on “Guidelines for Responding to Misconduct in Research”).
https://www.mext.go.jp/b_menu/houdou/26/08/1351568.htm

d. R&D institutions are responsible for ensuring that research participants fully recognize the above guidelines described in b. and c., as well as training them using educational materials related to research ethics stipulated by JST.

e. R&D institutions shall expand and manage research costs properly in accordance with the regulations of the R&D institution while maintaining reasonable flexibility in the operation of research costs. Regarding expense items subjected to the administrative process manual stipulated by JST and for which rules specific to this program are set, these rules must be followed (R&D institutions receiving Grants-in-Aid for Scientific Research can handle their expenses for items not described in the administrative process manual concerning the use of commissioned research costs in accordance with the handling rules of the Grants-in-Aid for Scientific Research in the R&D institution).

f. R&D institutions must conclude agreements with research participants stating that the intellectual property rights arising from the implementation of the research belong to the R&D institution or establish work regulations stipulating this. In particular, when a student with no employment relationship with the R&D institution becomes a research participant, except when the said student cannot become the inventor, appropriate actions must be taken, such as concluding an agreement with the student in advance to ensure that intellectual property rights pertaining to the invention (including conception, etc.) made by the student in the course of conducting the research belong to the R&D institution. Regarding the compensation conditions for transferring intellectual property rights, those concerned are asked to act in a way that is favorable to the student inventor.

Additionally, when the intellectual property is transferred to other individuals or parties or when exclusive licenses to use the property are granted to the other individuals or parties, prior approval of JST is necessary as a general rule. Further, when the application, registration, implementation, and renunciation of the property rights are going to be conducted, the necessary reports must be submitted to JST.

g. R&D institutions are obligated to respond to accounting investigations by JST and account audits by the national government.

h. R&D institutions are obligated to obey measures pertaining to the change of terms of payment and accept the decrease of payments decided by JST based on JST investigations on their administrative management systems and financial conditions.

Moreover, if the program evaluation at the end of the JST mid- and long-term target period calls for the dissolution of JST or contraction of the program or if there are changes in the state of budgetary measures in the country, measures may be taken to cancel the agreement or reduce commissioned research costs during the agreement period in accordance with the special provisions of the R&D agreement. Furthermore, based on the results of the mid-term evaluation of the research project, measures such as a change in commissioned research costs, agreement period, or research suspension may be made. If the JST judges that continuing the research is inappropriate, measures for cancellation of the agreement may be made even during the agreement period. R&D institutions must follow these measures.

i. When R&D institutions are national or municipal organizations, if such R&D institutions conclude an R&D agreement, they are responsible for ensuring that the necessary budgetary arrangements and other procedures are conducted before the start of the R&D agreement (in the unlikely event that the necessary procedures have not been completed after the conclusion of the agreement, measures such as canceling the R&D agreement and refunding the commissioned research costs may be taken).

j. As part of its efforts to prevent misconduct in R&D activities, JST requires researchers who participate in newly adopted research projects and are affiliated with R&D institutions to enroll in and complete one of the following programs or educational materials:

・”eAPRIN” provided by the Association for the Promotion of Research Integrity

・”eL CoRE” provided by the Japan Society for the Promotion of Science
・“For the healthy development of science: What a sincere scientist should do” provided by the Japan Society for the Promotion of Science
・“Learning about fair research activities from cases: Casebook for awareness and learning” provided by the Japan Agency for Medical Research and Development
・“Collection of near-misses in research integrity” provided by the Japan Agency for Medical Research and Development
・Other research ethics education programs and training that the R&D institution to which the researcher belongs determines as equivalent to the above

(if deemed equivalent by the R&D institution, the video teaching material “Ethical blank” provided by JST will also be accepted)

In cases where it is difficult to take a program on research ethics education at the affiliated institution (e.g., because the affiliated institution does not have a program on research ethics education), please use eAPRIN (e-learning teaching material operated by the Association for the Promotion of Research Integrity (APRIN)) through JST.

If the relevant researchers fail to complete the educational program as stipulated despite repeated reminders by JST, JST will halt the expenditure by the research institution of the commissioned research funds partially or entirely. In line with this, the R&D institution must halt all use of the research funds and not restart until further notice from JST is provided.

k. R&D institutions are obliged to take necessary measures, such as concluding joint research agreements with participating institutions regarding the handling of intellectual property rights and non-disclosure agreements, to the extent that they do not violate the R&D agreement with JST.

l. R&D institutions are requested to execute appropriate measures to fulfill their accountability, paying full attention to economics, efficiency, effectiveness, legitimacy, and accuracy as state funds will be used as a source of funding for the commissioned research costs. Additionally, R&D institutions must strive for systematic execution and be careful not to make unnecessary expenditure to exhaust the budget at the end of the R&D period or the fiscal year.

(2) Cases where the R&D institution is an international institution

a. As a general rule, R&D institutions are obliged to conclude a research agreement using the Collaborative Research Agreement template provided by JST (under certain conditions, the terms of the agreement for matters deemed to be reasonable grounds can be adjusted after considering the characteristics of the research content). Indirect costs are capped at 30% of direct costs. R&D institutions are also obliged to conduct research appropriately in accordance with the research agreement and research plan. If a research agreement cannot be concluded or if JST judges that research at the applicable R&D institution will not be appropriately conducted, the implementation of the research at the applicable R&D institution will not be approved.

b. R&D institutions are responsible for appropriately disbursing and managing research funds based on the research agreement and any guidelines specified by JST. They are also obligated to prepare and submit expense statements (equivalent to income and expenditure books for domestic institutions) in English that demonstrate the details of research costs. Furthermore, even during the agreement period, R&D institutions must respond to various investigations related to the execution status, as requested by JST.

c. Please see the latest Collaborative Research Agreement template for other detailed conditions.

*From the perspective of security export control, JST may judge that research agreements should not be concluded with organizations such as those listed on the "Foreign User List[2]" published by the Ministry of Economy, Trade and Industry.

3.7 Other precautions

3.7.1 Childbirth, childcare, and long-term care support system

As part of efforts to promote gender equality, JST offers a support program for childbirth, childcare, and long-term care. This program provides a Gender Equality Promotion Fund

[2] To improve the effectiveness of catch-all regulations regarding cargo related to weapons of mass destruction, the Ministry of Economy, Trade and Industry has created a "Foreign User List" that provides information on organizations located in foreign countries where concerns about the development of weapons of mass destruction cannot be ruled out. See: https://www.meti.go.jp/policy/anpo/law05.html#user-list

(maximum amount: 300,000 yen per month multiplied by the number of months of support) for research projects to enable those employed full-time as researchers under the research funds (excluding indirect costs) from JST programs to continue their research or their careers from the time they return to their research if they are forced to temporarily suspend their research due to a life event (childbirth, childcare, long-term care).

Please refer to the following website for details:

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

In this program, if a researcher is involved in a life event (childbirth, childcare, nursing care) that requires two weeks or more of leave, the following steps will be taken:

Response during the period	It is possible for a person who can take on the role of the PI/Co-PI to continue promoting the research on their behalf.
Extension of R&D period	The R&D period will not be extended
Handling of R&D budget	The budgeted amount can be used for research and development costs as originally planned.
Eligible life events	Childbirth: 6 weeks before birth (14 weeks in case of multiple pregnancy) and 8 weeks after birth Childcare: Period until child reaches 3 years of age Nursing care: a period deemed necessary within a 6-month period

3.7.2 Use of JREC-IN Portal

The Japan Research Career Information Network (JREC-IN Portal, https://jrecin.jst.go.jp/) is the largest website supporting research human resources in Japan. In this service, users can post or browse information on human resources, including researchers, their supporters, and engineers involved in research at no cost.

Currently, the database holds over 20,000 pieces of information on needed human resources from universities, public R&D institutions, private business firms, and over

140,000 registered users. Moreover, JREC-IN Portal's online application function can be used to simplify the management of application documents and reduce the burden on job seekers. Please use the JREC-IN Portal if you are looking for research human resources (postdoctoral fellows, researchers, etc.) with advanced knowledge to promote your research project.

Additionally, the JREC-IN Portal is linked to researchmap, and the resume and achievement list creation function allows users to create these application documents easily using the information registered in researchmap.

Chapter 4　Points to be noted regarding application

4.1 Enrolling in and completing the Educational Program on Research Integrity

The R&D applicant must complete the Educational Program on Research Integrity as a prerequisite for application. If the completion of the Educational Program cannot be confirmed, the application will be disqualified for failing to meet the requirements.

Please enroll in the Educational Program on Research Integrity and submit a declaration of completion by following either procedure (1) or (2) below. For application instructions using e-Rad, please refer to "Chapter 5: Submission via Cross-Ministerial R&D Management System (e-Rad)".

(1) For R&D applicants who have completed an equivalent program at their institution

R&D applicants who have already completed an e-learning program or educational seminar on research integrity at their institution by the time of their application are requested to declare this on the e-Rad application information input screen.

(2) For R&D applicants who have not completed an equivalent program at their institution (including R&D applicants at institutions who do not have such a program)

a. R&D applicants who have previously completed the eAPRIN (ex-CITI Japan) e-learning program in a JST program

R&D applicants who have previously completed the eAPRIN (ex-CITI Japan) e-learning program in a JST program by the time of their application are requested to declare this on the e-Rad application information input screen.

b. For other R&D applicants for whom a. above does not apply

In cases where it is difficult to take a program on research ethics education at the affiliated institution (e.g., because the affiliated institution does not have a program on research ethics education), please use the digest version of the eAPRIN (ex-CITI Japan) through JST. Please refer to the research proposal application website for the attendance method:

Please attend using the URL below.

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

The Educational Program is free of charge and will take 1–2 hours to complete. Once enrolled, R&D applicants are expected to complete the Educational Program promptly and declare the completion of the Educational Program and select or type “Digest Version Completion” in the e-Rad application information input screen.

■ Contact for consultation on the Educational Program on Research Integrity

Research Integrity Division, Department of Legal Affairs and Compliance, Japan Science and Technology Agency,

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

■ Contact for consultation on call for applications

Department of R&D for Future Creation, Japan Science and Technology Agency

E-mail: cronos@jst.go.jp

*Include the call name, e-Rad project ID, R&D applicant name, and project name in the body of the email.

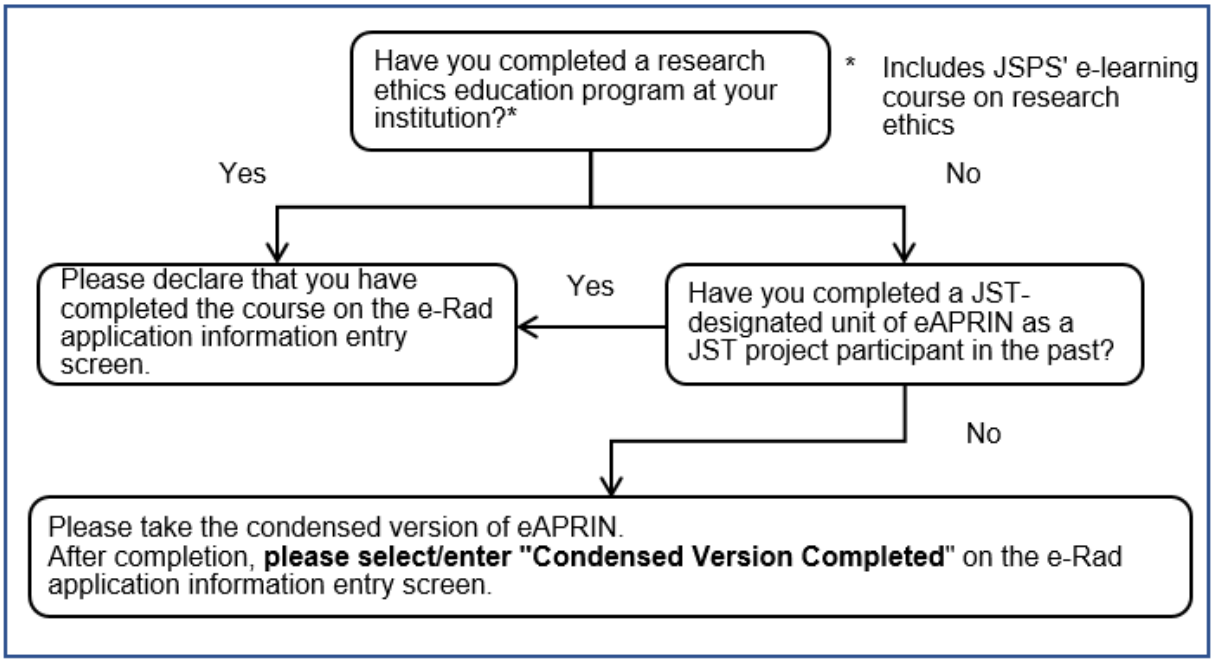


Figure. Flow chart for reporting completion of Educational Program on Research Integrity

JST requires researchers participating in this program to take one of the following programs or teaching materials:

- ”eAPRIN” provided by the Association for the Promotion of Research Integrity
- ”eL CoRE” provided by the Japan Society for the Promotion of Science
- “For the healthy development of science: What a sincere scientist should do” provided by the Japan Society for the Promotion of Science
- “Learning about fair research activities from cases: Casebook for awareness and learning” provided by the Japan Agency for Medical Research and Development
- “Collection of near-misses in research integrity” provided by the Japan Agency for Medical Research and Development
- Other research ethics education programs and training determined as equivalent to the above by the R&D institution to which the researcher belongs
  (if deemed equivalent by the R&D institution, the video teaching material “Ethical blank” provided by JST will also be accepted)

In cases where it is difficult to take a program on research ethics education at the

affiliated institution (e.g., because the affiliated institution does not have a program on research ethics education), please use eAPRIN (e-learning teaching material operated by the Association for the Promotion of Research Integrity (APRIN)) through JST. The same procedure will be implemented in the following fiscal year as well. Therefore, as a general rule, all research participants of an accepted proposal must complete the designated units of the abovementioned Educational Program for Research Integrity or teaching materials (excluding those who have already completed the above Educational Program for Research Integrity or teaching materials specified by JST at their affiliated institution or JST Program).

4.2 Measures against unreasonable duplication and excessive concentration

○ Measures against unreasonable duplication

If a given research project by a given researcher is unnecessarily receiving multiple competitive research funding programs (i.e., the name and content of the research are the same, and the research is receiving competitive research funding) or other research funds (all current research funds for individual research subjects, such as subsidies, grants, joint research funds, and commissioned research funds, including those from overseas (*)), and any of the following items apply, the research project may be rejected, canceled, or reduced (henceforth referred to as “rejection of research project”) depending on the extent in this program:

- If there are applications for multiple competitive research funds and other research funds simultaneously for research projects that are substantially the same (including cases where they overlap to a considerable extent; same applies hereinafter), and they are adopted more than once
- If there are multiple applications for research projects that are substantially the same as the competitive research funds or other research funds that have already been selected and funded
- If there is an overlap in the intended application of research funding between multiple research projects
- Other cases equivalent to the above

At the application stage for this program, there are no limitations regarding submitting

proposals to other competitive research funds or other research funds. However, if a research project is selected by another competitive research fund or other research funds, please report this promptly to the administrative staff of this program. If there is any omission in this report, the research project may be rejected in this program.

*Excluding basic costs or internal funds as allocated within the affiliated institution, commercial activities as defined in the Commercial Code, and financing through direct or indirect financing.

○ Measures against excessive concentration

Even if the content of the research proposed for this program differs from that of other research being conducted under another competitive research funding program or other research funds, if the overall research funding allocated to the same researcher or research group (“researcher”) in the relevant fiscal year exceeds an amount that can be utilized effectively and efficiently and can be used within the R&D period, and if any of the following items apply, in this Program, the research project may be rejected in accordance with the degree of the relevant item.

- If an excessive amount of research funding is being received in light of the researcher’s capabilities and the research methods being used
- If an excessive amount of research funding is being received, compared with the amount of effort (percentage of the amount of time required by the researcher for conducting the relevant research with respect to the overall working time (*) (%)) allocated to the research project
- If costly research facilities are purchased unnecessarily
- Other cases equivalent to the above

Therefore, if submitting proposals to other competitive research funds or other research funds after applying to this program, and another competitive research fund accepts the research project, or if any information provided on the application changes, please report this promptly to the program's administrative staff. If there is any omission in this report, the research project may be rejected in this program.

*The overall working time of the researcher includes the time for research activities, teaching activities, management assignments, and other activities substantially

equivalent to work.

○ How to exclude unreasonable duplication and excessive concentration

To exclude unreasonable duplication and excessive concentration of competitive research funds and ensure transparency in research activities and appropriate efforts, R&D applicants shall provide the following information at the time of application.

(i) Information on the current application/acceptance status of other competitive research funds, including other ministries and research funds, and all current affiliated institutions/positions

At the time of application, please provide the current application/acceptance status of other competitive research funds, including those from other ministries and other research funds (system name, research subject, implementation period, budget amount, and effort) (“information on research funds”), and information on all current affiliated institutions/positions (including side jobs, participation in foreign recruitment programs, and honorary professors without employment contracts) (“information relating to affiliated institutions/positions”) in the application documents and the Cross-Ministerial R&D Management System (“e-Rad”). If the application documents or e-Rad contain false statements, the research project may be rejected.

Of the information on research costs, information on joint research with which confidentiality agreements have been signed will be handled as follows in consideration of individual circumstances so that activities such as industry-academia collaboration will not decrease.

- Only the information necessary to confirm whether the submitted research project does not result in unreasonable duplication or excessive concentration of research funds and can appropriately secure the effort related to the execution of the research project (as a general rule, information of the joint research, such as only the name of the partner institution, amount of research funds accepted, and information related to effort) will be requested.
- However, if the submission is difficult due to unavoidable circumstances, such as cases where submission is difficult due to the contents of the confidentiality agreement that has already been concluded, the application can be submitted

without entering the name of the partner institution and the amount of research costs accepted. Even in that case, JST may inquire about the affiliated institution if necessary.

- In addition to the affiliated institution, funding institutions and related ministries and agencies may be provided with the information; nonetheless, even in those cases, the information will be shared only among those with a duty of confidentiality.

When concluding a confidentiality agreement in the future, please proceed with the assumption that you may submit the necessary information when applying for competitive research funds. However, if both contracting parties agree on the scope of information to be kept confidential and its legitimate reason (such as when it is considered to be extremely important in corporate strategy and is highly confidential), it may be possible to conclude a contract that does not presuppose the submission of such confidential information.

(ii) Provision of other information necessary to ensure transparency regarding all research activities involved

To ensure transparency in all research activities involved, JST requests a pledge that all necessary information, including information on research costs, information on affiliated institutions and positions, donations, and support for facilities and equipment other than funds (*), is being appropriately reported to the affiliated institution based on the relevant regulations. If an appropriate report has not been made in violation of the pledge, the research project may be rejected.

Regarding information on the acceptance status of facilities and equipment not used for the research project of the application but used for research conducted separately, in addition to the pledge, a status of the understanding and management of the relevant information should be submitted to confirm that there is no unreasonable duplication or excessive concentration and that the research project is being sufficiently executed.

*Includes cases where articles such as research facilities, machines, and equipment are supplied, and services are provided free of charge.

○ Sharing of information relating to proposal contents to exclude unreasonable duplication and excessive concentration

To exclude unreasonable duplication and excessive concentration, to the extent necessary, information on some submissions will be shared through e-Rad with other departments in charge of competitive research funds, including other government ministries.

4.3 Ensuring research integrity against new risks associated with internationalization and openness of research activities

To stimulate the creation of science, technology, and innovation in Japan, it is necessary to continue to promote international joint research with various partners, with open science as the main principle. Simultaneously, in recent years, it has been indicated that new risks associated with the internationalization and openness of research activities may impair the values that form the basis of the research environment, such as openness and transparency, and there are dangers of researchers unintentionally falling into conflicts of interest and responsibilities. Under these circumstances, building an internationally reliable research environment is essential for Japan to promote the necessary international cooperation and exchange while preserving the values that form the basis of the research environment.

Therefore, based on the “Response Policy for Ensuring Research Integrity Against New Risks Associated with the Internationalization and Openness of Research Activities” (decision of the Integrated Innovation Strategy Promotion Council, April 27, 2021), universities and R&D institutions have been stated that it is important to establish rules and management systems related to conflicts of interest and responsibilities and autonomously ensure the soundness and fairness (research integrity) of research by researchers and at universities and R&D institutions.

From this perspective, JST confirms whether efforts can be appropriately secured while eliminating unreasonable duplication and excessive concentration of competitive research funds and ensuring activity transparency. Additionally, JST may inquire about affiliated institutions regarding the status of the institution’s regulations, information understanding, and management.

4.4 Responses to inappropriate usage or reception of research funds

Inappropriate usage and reception of research funds relating to the implemented project ("unauthorized usage") will be strictly addressed as follows.

○ Measures taken when inappropriate usage of research funds is found

(i) Measures to cancel agreements

The commissioned agreement is canceled or altered for projects where inappropriate usage is found, and all or part of the commissioned funds is requested for return. Agreements from the following fiscal year onward may not be concluded.

(ii) Measures to restrict application and participation (*1) eligibility

The measures of application and participation eligibility restrictions to this program or strict warning measures set out in the table below, depending on the level of inappropriateness, are taken against researchers who conducted the inappropriate usage of research funds in this program (including colluding researchers; henceforth referred to as "research who conducted inappropriate usage") or researchers who were not found to have been involved in inappropriate usage but who were in violation of due care as a prudent manager (*2).

Furthermore, a summary of the pertinent inappropriate usage (names of researchers who conducted inappropriate usage, program name, affiliated institution, research proposal, budget, fiscal year of research, content of inappropriate usage, content of measures taken) is provided to the individuals of other ministries in charge of the competitive research funds, who may restrict application and participation eligibility of the researchers in other competitive research fund systems of other ministries.

* "Application and participation" refers to proposing, applying for, or submitting a new proposal, participating in new research as a co-researcher, or participating in an ongoing research project (ongoing project) as a PI or co-researcher.

*2 A "researcher who was in violation of due care as a prudent manager" refers to a researcher who has not been found to have been involved in inappropriate

usage but who has violated their obligation to conduct the program with the care of a prudent manager.

<table>
<tr><th>Classification of individual who conducted or is involved in inappropriate usage or reception of research funds</th><th colspan="2">Extent of inappropriate usage</th><th>Submission restriction period*3.4</th></tr>
<tr><td rowspan="4">Researcher who conducted inappropriate usage or colluding researcher
*1</td><td colspan="2">1. Use of research funds to make private profit</td><td>10 years</td></tr>
<tr><td rowspan="3">2. Other than 1.</td><td>(1) Impact on society is judged to be large, and maliciousness of act is judged as high</td><td>5 years</td></tr>
<tr><td>(2) Neither (1) nor (3)</td><td>2–4 years</td></tr>
<tr><td>(3) Impact on society is judged to be small, and maliciousness of act is also judged as low</td><td>1 year</td></tr>
<tr><td>Researcher who used fabrication or other inappropriate means to receive competitive research funds or colluding researcher</td><td colspan="2"></td><td>5 years</td></tr>
<tr><td>Researcher who was not directly involved in inappropriate usage but who conducted usage in</td><td colspan="2"></td><td>1–2 years (maximum) in accordance with the degree of violation of due care as a prudent</td></tr>
</table>

violation of due care as a prudent manager *2		manager

*3 Strict warning issued under any of the following conditions and no restriction imposed on application and participation eligibility.

・In the case of *1 in the table, the impact on society and the maliciousness of the act are judged to be small, and the amount of inappropriate usage is small.

・In the case of *2, the impact on society and the maliciousness of the act are judged to be small.

*4 As a general rule, the submission restriction period is calculated as starting from the fiscal year following the fiscal year in which the research funds were returned due to inappropriate usage. The researcher is also ineligible in the fiscal year in which the inappropriate usage of the research funds is identified.

(iii) Public announcement of cases of inappropriate usage

As a general rule, JST will publicly announce a summary of the applicable inappropriate usage (name of R&D institution, program name, fiscal year of misconduct, misconduct contents, amount of misused research funds, and number of researchers involved in misconduct) regarding the researchers whose application and participation eligibility has been restricted among the researchers who conducted the inappropriate usage of the research funds and researchers who violated the due care of a prudent manager. As a general rule, the Ministry of Education, Culture, Sports, Science and Technology will also publicly announce this information.

Furthermore, according to the “Guidelines for the Management and Audit of Public Research Funds in Research Institutions (Practice Standards),” once the misconduct is determined as the outcome of an investigation, the R&D institution is responsible for promptly and publicly announcing the investigation results. Therefore, JST requests that each institution deals with the matter appropriately in accordance with the Guidelines.

- Please refer to the following website for an overview of the current Ministry of Education, Culture, Sports, Science and Technology publication on misconduct cases:

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

4.5 Measures against researchers whose application and participation eligibility has been restricted under other competitive research funding systems

Researchers for whom restrictions are imposed due to the inappropriate usage of research funds in another competitive research fund system*, including from other ministries, are not eligible to apply to or participate in this program while their submission eligibility is restricted in the other competitive research fund system.

"Other competitive research fund systems" include those systems that have started a call for proposals from FY2024 onward—this also covers systems that ended before FY2024.

- Please refer to the website below for the currently covered systems:
  https://www8.cao.go.jp/cstp/compefund/

4.6 Measures against violations of related laws and regulations

If research is conducted in violation of the relevant laws, regulations, and guidelines, the researcher will be subject to disciplinary action and penalties in accordance with the related laws and regulations, and the allocation of research funds may be suspended, or the decision to allocate research funds may be revoked.

4.7 Carryover of research costs

Making a carryover of research costs until the end of the next fiscal year at most for multi-year agreements that continue until the next fiscal year may be permitted if completion of expenditures within the fiscal year is difficult while progressing on the program due to unavoidable conditions, such as difficulties in conducting preliminary research or determining the research method, planning conditions, weather conditions, and difficulty in obtaining materials.

4.8 Cross-Ministerial Expenses Handling Categorization Table

The expense items of research costs in this program are determined based on the Cross-Ministerial Expenses Handling Categorization Table.

Therefore, please refer to the Cross-Ministerial Expenses Handling Categorization Table

below for handling of research costs:

https://www.jst.go.jp/contract/download/2023/2023kisokens309betsu.pdf

(Japanese only)

Currently, the competitive research funding system is being reformed in response to the "6th Science and Technology Innovation Basic Plan," "Integrated Innovation Strategy 2023," and the "Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers." Based on this, in this program, personnel expenses for the PI of this project and expenses related to agency work other than research (buyout expenses) can be disbursed from direct costs. Please check the necessary requirements and procedures below if wishing to pay personnel expenses and expenses related to agency work other than research (buyout expenses) of the PI.

Additionally, based on the "Common Guidelines for the Development of a Competitive Research Funding System from the Perspective of Gender Equality and Human Resource Development" (agreement of Liaison Committee of Relevant Ministries and Agencies on Competitive Research Funding, February 8, 2023), this program allows for the expenditure of direct costs for the promotion of human resource development in science and engineering fields for the next generation.

○ "Revision of the Direct Costs to Allow Expenditures for Non-Research Activities on Behalf of Researchers (Introduction of a Buyout System) and Expenditures of Personnel Expenses for Principal Investigators (PIs) from Direct Costs (Liaison)" (September 17, 2020):

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

○ The scope of application for this program and expenditure limits will be announced on the program website at a later date.

4.9 Diverting direct costs between expense items

Direct costs of different expense items can be diverted to other direct cost categories without approval of JST if within 50% of the total direct costs.

4.10 Securing the research and development period until the end of the fiscal year

The statements below should be followed in every competitive research fund by JST to enable researchers to continue their research work until the end of the fiscal year.

(1) JST makes inspections on the completion of the project and the achievements of the research.

(2) The accounting report should be submitted by May 31.

(3) The report on the research achievements should be submitted by May 31.

Each R&D institution should make efforts to organize necessary systems at the institution based on the fact that the purpose of these statements is to secure the R&D period that continues until the end of the fiscal year.

4.11 Indirect costs

When using indirect costs, the R&D institution that receives the indirect cost allocation, under the responsibility of the head of the R&D institution, must create usage policies, execute them systematically and appropriately, and ensure transparency in how the funds are used through explanations to researchers. Moreover, the institution that received the indirect cost must manage the costs appropriately and store receipts as evidence for the appropriate use of indirect costs for five years counted from the next fiscal year from which the program ended.

R&D institutions that received indirect costs must report the actual use of indirect costs via e-Rad before June 30 of the next fiscal year (if the institution has received two or more competitive research funds, they must report all indirect costs accompanying the competitive research funds). Please refer to the e-Rad user manual (https://www.e-rad.go.jp/manual/for_organ.html) or “Frequently Asked Questions” (https://qa.e-rad.go.jp/) for those who do not know how to use e-Rad for reporting.

Additionally, due to the revisions of the “Common Guidance for the Execution of Indirect Costs of Competitive Research Funds” (agreement of Liaison Committee of Relevant Ministries and Agencies on Competitive Research Funding on April 20, 2001), only programs financed by funds or operating expense grants of independent administrative agencies can be used to save for the replacement of depreciable assets held.

4.12 Promotion of sharing of research facilities and equipment

According to the Reform on “Competitive Research Funds for Sustainable Creation of Research Achievements (Midterm Summary)” (Study Group on Reform of Competitive Research Funds, June 24, 2015), comparatively large-scale facilities and equipment with high general applicability should be shared as a general rule, assuming that the original research objectives are sufficiently accomplished.

Furthermore, the “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021) and the “Integrated Innovation Strategy 2023” (Cabinet decision on June 9, 2023) request the promotion of the maintenance and sharing of research equipment and facilities and the establishment of a system for introducing, updating, and utilizing research facilities (core facility development) and formulate and publish a sharing policy.

The Ministry of Education, Culture, Sports, Science and Technology provided the “Guidelines for Promotion of Sharing of Research Facilities and Equipment” in March 2022 to promote the strategic maintenance, operation, and sharing of research facilities and equipment at universities.

Based on the above, for research facilities and equipment purchased by this program, particularly large-scale ones, active efforts for sharing should be made, including sharing within the scope that does not hinder the progress of the applicable research proposal in accordance with the shared system of the affiliated institution or organization. Moreover, within the scope of management conditions for other research funds, active efforts should be made to utilize research facilities and equipment purchased with other research funds and purchase and share them by combining multiple research funds. When doing so, it is important to recognize that sharing is possible even during the project period and consider further sharing to strengthen research capabilities by utilizing the latest research facilities and equipment. A balance is necessary between the management of the shared equipment and facilities and its use to achieve the research objectives of the research project.

Additionally, researchers are requested to collaborate actively with shared systems and promote the sharing of research facilities and equipment beyond the framework of research organizations and R&D institutions by cooperating with the Inter-University Network for Common Utilization of Research Facilities, which was implemented for the

common use of equipment in the National Institute of Natural Sciences, and the sharing system constructed through the New Shared System Introduction Support Program and Core Facility Construction Support Program at each university.

- ○ “Reform on Competitive Research Funds for Sustainable Creation of Research Achievements (Midterm Summary)”
  [Study Group on Reform of Competitive Research Funds (June 24, 2015)]:
  https://www.mext.go.jp/b_menu/shingi/chousa/shinkou/039/gaiyou/1359306.htm
- ○ “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021):
  https://www8.cao.go.jp/cstp/kihonkeikaku/6honbun.pdf
- ○ “Integrated Innovation Strategy 2023” (Cabinet decision on June 9, 2023):
  https://www8.cao.go.jp/cstp/tougosenryaku/togo2023_honbun.pdf
- ○ “Integrated Rules on Usage Rules of Competitive Research Funds” [Agreement of Liaison Committee of Relevant Ministries and Agencies on Competitive Research Funding (revised May 24, 2023)]:
  https://www8.cao.go.jp/cstp/compefund/toitsu_rule_r50524.pdf
- ○ “Purchase of Shared Facilities Using Multiple Research Fund Systems (Combined Use)” [Agreement between institutions allocating funds and relevant supervising ministries (revised September 10, 2020)]:
  https://www.mext.go.jp/content/20200910-mxt_sinkou02-100001873.pdf
- ○ “Guidelines for Promotion of Guidelines for Promotion of Sharing of Research Facilities and Equipment” (formulated March 2022):
  https://www.mext.go.jp/content/20220329-mxt_kibanken01-000021605_2.pdf
  [Reference: Summary version, YouTube] https://youtu.be/x29hH7_uNQo
- ○ Inter-University Network for Common Utilization of Research Facilities:
  https://chem-eqnet.ims.ac.jp/
- ○ New Shared System Introduction Support Program:
  https://www.jst.go.jp/shincho/program/sinkyoyo.html
- ○ Core Facility Construction Support Program:

https://www.jst.go.jp/shincho/program/corefacility.html

4.13 Improving the treatment of doctoral students

The “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021) set as a numerical goal the tripling of the number of doctoral students who receive an amount equivalent to their living expenses (corresponding to approximately 30% of students enrolled in doctoral programs receiving a stipend equivalent to living expenses). The purpose was to attract excellent students and working adults from Japan and abroad and enhance financial support for graduate students, particularly doctoral students. Further, the Basic Plan states, “to promote the payment of salaries at an appropriate level for doctoral students as research assistants (RAs) from competitive research funds and joint research funds, rules for the expenditure of RA costs related to the employment and honoraria of RAs will be established for each program and university and implemented sequentially from FY2021.” These indicate the need to expand the employment of doctoral students as RAs at universities and R&D corporations and improve their treatment.

Moreover, the “Guidelines for the Employment and Training of Postdoctoral Fellows” (Human Resources Committee, Council for Science and Technology, December 3, 2020) stated the following regarding doctoral students: “they have the aspects of students and researchers, and providing good environments for conducting research activities and securing the working conditions for them are important duties of the universities, which foster researchers,” “specifying the compensation appropriate to the nature and contents of the work, paying compensation according to the time spent for work under an appropriate management of the work, and providing compensation according to the properly evaluated contribution are particularly important,” and “reviewing the rules and regulations in each university is necessary so that the necessary costs may be totaled as direct costs to recruit an RA at the time of application for competitive research funding and that paying the compensation at an appropriate level to such an RA is possible.”

Based on the above, in this program, please actively employ doctoral students needed for the execution of the research as RAs, set a unit price commensurate with the nature and content of the work, and pay wages commensurate with the time spent on work under appropriate work management. Additionally, when applying for this program, please apply

with a financial plan that considers the salary level for the abovementioned doctoral students.

(Notes)

- The “6th Science and Technology Innovation Basic Plan” states that the amount equivalent to living expenses that doctoral students should receive is 1.8 million JPY or more per year. The Basic Plan also states that the number of recipients of research subsidies, which are equivalent to Special Research Fellows (DC), which provide approximately 2.4 million JPY per year, to excellent doctoral students so that they can concentrate on their research without financial worries, will be significantly expanded.
- The “Guidelines for the Employment and Training of Postdoctoral Fellows” state the following regarding the treatment of doctoral students when employing them to conduct research projects: “An hourly wage of around 2,000 to 2,500 JPY* is assumed to be standard when considering the average salary of specially appointed assistant professors hired under competitive research funding, etc.”

  (*) Considering the average salary of specially appointed assistant professors hired through competitive research funds, it is assumed that the standard hourly wage for doctoral students is approximately 2,000–2,500 JPY (in the “Survey on the Employment Situation of Research University Faculty Members (Preliminary Version)” published in August 2020, the amount in the category where the median monthly salary of specially appointed assistant professors exists (400,000 yen ≤ x < 450,000 yen) is divided by working hours (7 hours 45 minutes to 8 hours) and actual working days excluding holidays (19–20 days), which is then multiplied by 0.8 after considering the doctoral student status to calculate the final value).
- The specific amount and period of payment will be determined by the R&D institution. There is no restriction on the payment amount above or below the level mentioned above.
- When hiring students as RAs, please consider not making them work excessive hours and striking a balance between work time and the doctoral students’ research and study time.

4.14 Ensuring independent and stable research environments for young researchers

The “Guidelines for the Employment and Training of Postdoctoral Fellows” (Human Resources Committee, Council for Science and Technology, December 3, 2020) stated the following: “There are many postdoctoral fellows whose tenure is less than three years, but too short of an employment period can be a hindrance to career development. Therefore, securing a term that allows them to settle down and concentrate on their research activities for a certain period of time is necessary,” and “after working as a postdoctoral fellow at one or two locations, considering progressing to the next step in approximately 3–7 years by their mid-30s, the ideal length of each post should be 3–5 years.”

Furthermore, regarding national universities and inter-university research institute corporations, the “Guidelines for Human Resource Payroll Management Reform in National Universities: Toward the Construction of an Appealing Human Resource Payroll Management that will Contribute to Enhancing Education and Research Abilities” (Ministry of Education, Culture, Sports, Science and Technology, February 25, 2019) stated the following: “to achieve both perspectives of training and stable employment for young teaching staff, it is desirable to promote an institutional system that incorporates the perspectives of training researchers while maintaining mobility, such as by ensuring a fixed period of employment of around 5–10 years through expenses that could be utilized with a high degree of freedom, such as indirect costs or donations, even if there is a fixed period of employment.

Based on the above, if young researchers, such as specially-appointed teaching staff or postdoctoral researchers, are employed by this program, please confirm who is responsible for human resources and accounting in the relevant department and make efforts to guarantee the R&D period as the length of their term of employment. Additionally, please make efforts to the extent possible that the term of employment is fixed and not short-term by using indirect costs, basic costs, and donations from external funds.”

4.15 Promotion of initiatives related to gender equality and human resource

development

The “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021), “Basic Plan for Gender Equality” (Cabinet decision on December 25, 2020), and “Policy Package for Education and Human Resource Development for the Realization of Society 5.0” (decision by Comprehensive Council for Science, Technology, and Innovation on June 2, 2022) aim to create a research environment where men and women can easily continue their research activities even after life events such as childbirth, childcare, and long-term care and promote the appointment of excellent female researchers as project leaders. Further, efforts to convey the attractiveness of science and engineering to female junior high school and high school students, including their parents and teachers, will be conducted to increase the percentage of women entering master’s and doctoral programs, mainly in science and engineering, break through the low rate of women entering doctoral programs in the natural sciences, and increase the number of potential bearers of knowledge in Japan.

If gender differences are not considered in the R&D process, they may have inappropriate effects during the stage of social implementation. Therefore, it is necessary to conduct research and technological development that considers gender differences, such as differences in physique and body structure and function.

Thus, this program will also consider efforts to promote the activities of female researchers and expand the base of human resources who will be responsible for science and technology in the future.

- Please consider gender differences when conducting R&D where not considering gender differences, such as differences in physique, body structure, and function, may have an inappropriate impact on society at the stage of social implementation.
- Expenses related to online classes in science, physics, and chemistry at elementary, junior high, and high schools, as well as on-site lectures taught by people with doctoral degrees in science and mathematics, can be paid from direct costs.
- Expenses for distributing research results on social media as content that is easy for junior high and high school students to understand can be paid from direct costs.
- The results of the two abovementioned outreach activities will be included in the

research report and subject to positive evaluation. These can also be included in the research plan and subject to positive evaluation at the time of review.

4.16 Voluntary research activities of young researchers employed for project implementation

Based on the “Implementation Policy on Voluntary Research Activities of Young Researchers Employed for Competitive Research Fund Projects” (agreement of Liaison Committee of Relevant Ministries and Agencies on Competitive Research Funding, revised December 18, 2020), when the PI determines that the voluntary research activities of young researchers employed in this program does not hinder but contributes to the promotion of the program and when approval from the affiliated R&D institution is given, the personnel costs for such young researchers can be paid from the research costs, and a part of their efforts can be spent for their activities, including their voluntary research activities and their research capacity improvement. Please see the following for details:

○ “Implementation Policy on Voluntary Research Activities of Young Researchers Employed for Competitive Research Fund Projects” [agreement of Liaison Committee of Relevant Ministries and Agencies on Competitive Research Funding, (revised December 18, 2020)]:
https://www8.cao.go.jp/cstp/compefund/jisshishishin.pdf

4.17 Supporting diverse career paths for young researchers

The “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021) sets the construction of “an environment in which excellent young people can develop their potential in various fields, such as academia, industry, and government” as a target. Further, the “Guidelines for the Employment and Training of Postdoctoral Fellows” (Human Resources Committee, Council for Science and Technology, December 3, 2020) state the following: “Doctorate human resources with high-level specialization and advanced research skills should help drive innovation by contributing in numerous fields, including at venture companies and global corporations. Accordingly, initiatives are

necessary for the diversification of career paths after the completion of the postdoctoral period." Based on this, when a project is selected in this call for research applications, and young researchers, such as specially appointed faculty members and postdoctoral fellows, are to be employed with public research funds (competitive research funds, other project research funds, or public invitation-type education research funds for universities), the relevant institution should make active efforts to support those researchers in securing diverse career paths.

Institutions should also consider using indirect costs in these efforts:

- Please include in your proposal an activity plan for supporting various career paths for young researchers hired using public research funds ("career support activity plan") (e.g., recommendation of participation in lectures held by institutions in collaboration with companies, long-term internships, corporate exchange meetings, and counseling; recommendation of independent participation in research activities in different fields). The career support activity plan will be confirmed at the time of proposal selection.
- Based on the idea that expenses required for developing the abilities of young researchers are fundamental expenses that support research activities, some of the activities of young researchers based on the career support activity plan described in the abovementioned proposal can be included in the research effort.
- During midterm and post-evaluations, PIs will be required to report on the progress of their efforts based on the abovementioned career support activity plan and the career path of young researchers after the end of their terms. The contents will be subject to positive evaluations.

  Additionally, during evaluations, to avoid hindering research activities, when young researchers participate in the efforts of public R&D institutions (including public R&D institutions other than the employer institution) (e.g., lectures conducted in collaboration with companies, long-term internships, company exchange meetings, counseling), these efforts will be subject to positive evaluation as an alternative to career support provided directly by PIs.

4.18 Securing management personnel such as URA

The “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021) indicated the importance of quality assurance and treatment improvement as professionals so that management personnel, such as URA, become an attractive job position. Furthermore, the “Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers” (Comprehensive Council for Science, Technology, and Innovation, January 23, 2020) indicated the need to establish career paths for management personnel, URAs, and engineers.

Based on the above, when management personnel such as URAs employed or newly hired by the R&D institution are engaged in the management of the research program in this program, the R&D institution should try to secure fixed terms and avoid short terms to the extent possible by utilizing this program and other external funds, such as indirect costs, basic costs, and donations.

Simultaneously, JST requests that active efforts be made to support securing career paths for such management personnel, such as having them participate in URA training. Institutions should also consider using indirect costs in these efforts.

Additionally, this program requires efforts toward autonomous operation after the end of the R&D period. Therefore, if a fixed-term employment contract has been concluded with the relevant management personnel, a system should be introduced that allows relevant management personnel to obtain stable employment, such as an indefinite employment contract based on appropriate evaluations.

4.19 Security export control (measures against overseas technology leaks)

Many advanced technologies are studied at research institutions. In particular, at universities, there is a heightened risk of leakage of advanced technologies and research-related materials/equipment or misuse in the development/manufacture of weapons of mass destruction owing to the increased number of international students and foreign researchers due to internationalization. Therefore, an organizational response by the R&D institution is required when an R&D institution conducts research activities, including the relevant commissioned research, so that research results with potential military applications are not passed to groups or individuals considering activities of concern, such

as terrorist groups and developers of weapons of mass destruction.

In Japan, export controls (*1) are imposed based on the Foreign Exchange and Foreign Trade Act (Act No. 228 of 1949; hereinafter, “Foreign Exchange Act”) to maintain international peace and security. Accordingly, as a general rule, a license from the Minister of Economy, Trade and Industry is necessary when attempting to export (provide) goods or technologies controlled under the Foreign Exchange Act. All those participating in this program must comply with the Foreign Exchange Act and all other laws, ordinances, guidelines, and notifications of the national government. In addition to legal action and penalties, the distribution of research funds may be halted, and the decision to allocate research funds may be canceled if research is conducted in violation of the relevant laws, ordinances, and guidelines.

*1: Currently, Japan’s security export control system is mainly based on international agreements and comprises two systems: (1) a system in which permission from the Minister of Economy, Trade and Industry is required when exporting (providing) cargo (technology) with specifications and functions above a certain level, such as carbon fiber and numerically controlled machine tools (list regulation); (2) a system that requires permission from the Minister of Economy, Trade and Industry if specific requirements (usage requirements/user requirements or information requirements) are met when exporting (providing) goods (technology) that do not fall under list regulations (catch-all regulation).

The export of cargo and the provision of technology is subject to the regulation of the Foreign Exchange Act. Advance permission is required when providing list-regulated technology to non-residents (including residents who fall under a specific type (*2)) or when providing it in a foreign country. The provision of technology encompasses technical information, such as blueprints, specifications, manuals, samples, and prototypes, in paper, email, and storage media, such as CDs, DVDs, and USB memory drives, and work knowledge through technical guidance and skill training, as well as technical support at seminars.

Acceptance of international students from abroad and activities such as joint research may include many exchanges of technologies that may be subject to the regulations of the Foreign Exchange Act. The regulations may also apply if attempting to provide technology

acquired through this program or when attempting to provide technology that has already been acquired by utilizing this program.

*2: Refers to the type of resident who is strongly influenced by non-residents and refers to the specific types specified in “Transactions or Acts that Provide Technology and that Require Permission based on the Foreign Exchange and Foreign Trade Act Article 25, Paragraph 1, and Foreign Exchange Order Article 17, Paragraph 2” 1. (3) k (1)–(3).

Additionally, based on the Foreign Exchange Act, it is necessary for research institutions to establish a security trade management system when exporting list-regulated cargo or providing list-regulated technology to foreign countries (*3). Therefore, by the time the agreement is concluded, it may be necessary to confirm whether this program plans to provide cargo and technology subject to export regulations under the Foreign Exchange Act. If there is an intention to provide the information, a management system in place may be confirmed through the Cross-Ministerial R&D Management System (e-Rad). If intending to provide cargo or technology and there is no management system, a system must be put in place until the cargo or technology is provided or by the end of this program, whichever comes first. The confirmation status may be reported at the request of the Ministry of Economy, Trade and Industry. Moreover, if the technology acquired through this program violates the regulations related to the Foreign Exchange Act, the agreement may be canceled partially or entirely.

*3: Exporters must comply with the “Exporter Compliance Standards” stipulated in Article 55-10, Paragraph 1 of the Foreign Exchange Act. Further, the security trade management system here is based on the management system in the “Exporter Compliance Standards” and refers to an organization’s internal management system for preventing illegal exports by correctly exporting list-regulated goods or providing list-regulated technologies to foreign countries.

Details of security trade management are available on the website of the Ministry of Economy, Trade and Industry. Please see the following for details:

- Ministry of Economy, Trade and Industry: Security export control (in general):
    - https://www.meti.go.jp/policy/anpo/
- Ministry of Economy, Trade and Industry: Security Export Control Handbook:

- https://www.meti.go.jp/policy/anpo/seminer/shiryo/handbook.pdf
- Ministry of Economy, Trade and Industry: Guidance on Sensitive Technology Management Related to Security Trade (for universities and research and development institutions):
  - https://www.meti.go.jp/policy/anpo/law_document/tutatu/t07sonota/t07sonota_jishukanri03.pdf
- Center for Information on Security Trade Control:
  - https://www.cistec.or.jp/export/jisyukanri/modelcp/modelcp.html
- Transactions or Acts that Provide Technology and that Require Permission based on the Foreign Exchange and Foreign Trade Act Article 25, Paragraph 1, and Foreign Exchange Order Article 17, Paragraph 2:
  - https://www.meti.go.jp/policy/anpo/law_document/tutatu/t10kaisei/ekimu__tutatu.pdf

4.20 Strict Adherence to United Nations Security Council Resolution No. 2321

In response to the nuclear test and repeated launching of ballistic missiles by North Korea in September 2016, the United Nations Security Council ("Security Council") adopted Security Council Resolution No. 2321 on November 30, 2016, which substantially increased and strengthened sanctions against North Korea. Accordingly, the Ministry of Education, Culture, Sports, Science and Technology issued the Request for Strict Adherence to United Nations Security Council Resolution No. 2321 (2016 MEXT document No. 98) on February 17, 2017.

"Scientific and technical cooperation" in section 11 of the main text of the Resolution is not limited to technologies regulated under the Foreign Exchange and Foreign Trade Act but includes all cooperation, except medical exchange. Accordingly, the research institution must adhere to this resolution in all research activities, including the relevant commissioned research.

See the following link for more information on Security Council Resolution No. 2321:

○ Ministry of Foreign Affairs of Japan: United Nations Security Council Resolution No. 2321, Japanese translation (Ministry of Foreign Affairs Notice No. 463 (issued on

December 9, 2016)):

https://www.mofa.go.jp/mofaj/files/000211409.pdf

4.21 Promotion of dialogue and collaboration with public stakeholders

The Promotion of "Science and Technology Dialogue with the People" (Basic Initiative Policy) (decision by the Minister of State for Science and Technology Policy and expert members of Council for Science and Technology on June 19, 2010) stated that passing on the results of science and technology to the people, gaining the understanding and support of the people, and working together to promote science and technology are essential for producing excellent results continually in science and technology and developing the country's science and technology. If selected in this call for applications, and annual public research funding of 30 million JPY or more is received, JST requests that the researchers actively engage in "science and technology dialogue with the public," such as public lectures on research results, symposiums, continuous distribution of research results on the Internet, and roundtable discussions involving diverse stakeholders.

(Reference) Promotion of "Science and Technology Dialogue with the People" (Basic Initiative Policy):

https://www8.cao.go.jp/cstp/stsonota/taiwa/taiwa_honbun.pdf

Additionally, the "6th Science and Technology Innovation Basic Plan" (Cabinet decision on March 26, 2021) states the need for the co-creation of knowledge and strengthening of science and technology communication through the participation of diverse entities such as citizen participation. The following examples provided by JST are "interactive dialogue and cooperation among diverse subjects."

- Science Agora:
  https://www.jst.go.jp/sis/scienceagora/
- National Museum of Emerging Science and Innovation (Miraikan):
  https://www.miraikan.jst.go.jp/

4.22 Research data management

JST announced the “Basic Policy Regarding the Handling of Research Results for Open Science Promotion” in April 2017 and revised it in April 2022. This policy stipulates the basic concept of making research papers, having open access, and storing, managing, and disclosing research data in the research activities of this program.

Generally, researchers participating in this program are requested to publish their research papers through institutional repositories or as publications premised on open access. In particular, peer-reviewed papers must be published within 12 months. Moreover, based on the data policy of the R&D institution, researchers must create a Data Management Plan (*1) that describes the policy and plan regarding the storage/management and disclosure/non-disclosure of research data generated through the research activities, submit it to JST together with the protocol, and undertake the research activities after implementing the storage, management, and release of research data based on this plan. The plan may be modified during the research process. Furthermore, metadata (*1) specified by JST must be assigned to the data to be managed as specified in the Data Management Plan. Managed data to which metadata has been added must be appropriately included in the institutional repository specified by each R&D institution or the research data infrastructure system operated by the National Institute of Informatics. Please see the following for details:

○ “JST’s Basic Policy Regarding the Handling of Research Results for Open Science Promotion”:
https://www.jst.go.jp/all/about/houshin.html#houshin04

○ “JST’s Basic Policy Operation Guidelines Regarding the Handling of Research Results for Open Science Promotion”:
https://www.jst.go.jp/pr/intro/openscience/guideline_openscience_r4.pdf
(*1) Items to be included in the Data Management Plan and metadata items are described in this guideline.

○ “Management and Utilization of Publicly Funded Research Data” (Cabinet Office):
https://www8.cao.go.jp/cstp/kenkyudx.html

○ “Basic Approach to Management and Utilization of Publicly Funded Research Data” (Integrated Innovation Strategy Promotion Council):

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

○ “Common metadata items in ‘Basic Approach to Management and Utilization of Publicly Funded Research Data’” (as of March 31, 2023):
https://www8.cao.go.jp/cstp/common_metadata_elements.pdf

JST analyzes statistical data, such as the number of data modules, the type of data, the type of disclosure, and the location of storage, to understand the contents of the description, support researchers, and reflect (revise) the basic policies. The statistical data analyzed will be made public, but no information that allows identification of the names will be disclosed.
*As for life science data, please also refer to “4.23 Data disclosure from National Bioscience Database Center.”

4.23 Data disclosure from National Bioscience Database Center

The National Bioscience Database Center (NBDC) of JST has proceeded with the Integration of Life Science Database Project (https://biosciencedbc.jp/) to promote the integrated use of databases in the life sciences field created by various R&D institutions and others.

Further, the “Progress and Future Direction of the Integration of Life Science Database Project” (January 17, 2013) states that the NBDC (currently the NBDC Program Promotion Department) will play a central role in expanding the target programs for which data and databases will be provided.

Based on these points, program participants are asked to cooperate in disclosing the following types of data and databases related to the life science field obtained from this Program.

No.	Type of data	Site of disclosure	URL for the site of disclosure
1	Overview of public databases that have been built	Integbio Database Catalog	https://integbio.jp/dbcatalog/
2	Data recorded in public databases that have been built	Life Science Database Archive	https://dbarchive.biosciencedbc.jp/

No.	Type of data	Site of disclosure	URL for the site of disclosure
3	Of the items in 2., data related to human beings	NBDC Human Database	https://humandbs.biosciencedbc.jp/

4.24 Inclusion of systematic numbers in paper acknowledgments

When presenting the research outcomes obtained through this program, please indicate the receipt of the grant through this program.

If mentioning in the Acknowledgment of the paper that it was funded by this Program, please include “JST CRONOS Grant Number (10-digit systematic number).” The same applies when submitting a paper. The 10-digit systematic number in this program is in the form of JPMJ + CS + four-digit alphanumeric. A notification of the systematic number will be made at the time of selection.

Examples of how to use the systematic number in the Acknowledgement of the paper are illustrated below:

[English]

This work was supported by the JST CRONOS Japan Grant Number JPMJCSxxxx.

[Japanese]

本研究は、JST 戦略的創造研究推進事業情報通信科学・イノベーション基盤創出（CRONOS）JPMJCSxxxx の支援を受けたものです。

*If you have two programs or more in relation to a paper, list all the names of the programs and the systematic numbers.

4.25 Accreditation of Partnership on Research Assistance Service

The Ministry of Education, Culture, Sports, Science and Technology established the Accreditation of Partnership on Research Assistance Service (A-PRAS) in 2019 to improve the research environment for researchers, accelerate the promotion of science, technology, and innovation in Japan, and provide support for the development of various initiatives related to research support services. Under this system, research support services provided by private business operators that meet specific requirements are accredited as a “Research support service/partnership” by the Minister of Education, Culture, Sports, Science and Technology. Eight services have been certified as of April 2023. Various

services, including searching for co-researchers, publicizing and programming research results, and procuring research funds and equipment, are available. Therefore, please do not hesitate to use them.

Details of each certified service can be found on the Ministry of Education, Culture, Sports, Science and Technology website:

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

4.26 Reformation of competitive research funds

Currently, the systems of competitive research funding are being discussed by the government of Japan under the scope of the "6th Science and Technology Innovation Basic Plan", "Integrated Innovation Strategy 2023", and the "Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers" to enable the efficient and effective use of research funds. If, within the call period, policies common to other competitive research funding programs are presented regarding the improvement and operation of these systems, JST will notify the researchers again when this policy is applied to calls and operations of this program.

4.27 Guidelines for the Management and Audit of Public Research Funds in Research Institutions (Practice Standards)

(1) System implementation of the "Guidelines for the Management and Audit of Public Research Funds in Research Institutions (Practice Standards)"

When applying to this program and conducting research, R&D institutions must strictly observe the "Guidelines for the Management and Audit of Public Research Funds in Research Institutions (Practice Standards)" (decision by Minister of Education, Culture, Sports, Science and Technology; revised on February 11, 2021) (*).

The R&D institutions, having implemented a system for managing and auditing public research funds, are responsible for making every effort to disburse the research funds appropriately in line with the aforementioned guidelines. If the Ministry of Education, Culture, Sports, Science and Technology decides that the system of the R&D institution for managing and auditing is insufficient, based on an investigation according to the said

guidelines, measures may be taken, such as a reduction of indirect costs, including all competitive research funds allocated by the Ministry of Education, Culture, Sports, Science and Technology and independent administrative agencies under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology.

*Please refer to the Ministry of Education, Culture, Sports, Science and Technology website for the “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

(2) Submission of the “Self-Evaluation Checklist for Implementation of Proper Systems” based on the “Guidelines for the Management and Audit of Public Research Funds in Research Institutions (Practice Standards)”

In concluding an agreement for this Program, each R&D institution must prepare a management and auditing system for research costs based on the abovementioned guidelines and submit a Self-Evaluation Checklist for Implementation of Proper Systems (“Checklist”), which is a report on the status of the system (agreement will not be approved unless the Checklist is submitted).

Therefore, after April 1, 2024, please check the contents of the Ministry of Education, Culture, Sports, Science and Technology website below, and respond and submit the checklist according to the website’s contents before concluding the R&D agreement.

Additionally, R&D institutions that have already submitted the FY2023 version of the Checklist will be approved for an agreement regardless of the above. However, if this applies, please complete the response/submission procedures for the FY2024 version of the Checklist by December 1, 2024.

This response/submission procedure must be continued during the period when competitive research funds are allocated by JST and the funds are being managed.

Organizations that do not accept any competitive funding or the like or any provision from the Ministry of Education, Culture, Sports, Science and Technology or an independent administrative agency in the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology need not submit a Checklist.

Please refer to the Ministry of Education, Culture, Sports, Science and Technology

website below for more information on this matter, including the above points:

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

As the guidelines include the perspective of "promotion of information dissemination and sharing," JST requests that efforts to prevent misconduct be posted on the applicable R&D institution's website and that the information be actively disseminated.

4.28 Guidelines for Responding to Misconduct in Research

(1) System implementation based on "Guidelines for Responding to Misconduct in Research"

In applying to this Program and conducting research activities, R&D institutions must adhere to the "Guidelines for Responding to Misconduct in Research" (decision by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014) (*).

If the Ministry of Education, Culture, Sports, Science and Technology decides that the system of the R&D institution for managing and auditing is insufficient, based on an investigation according to the guidelines, measures may be taken, such as a reduction of indirect costs, including all competitive research funds allocated by the Ministry of Education, Culture, Sports, Science and Technology and independent administrative agencies under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology.

Please refer to the Ministry of Education, Culture, Sports, Science and Technology website for the "Guidelines for Responding to Misconduct in Research":
https://www.mext.go.jp/b_menu/houdou/26/08/1351568.htm

(2) Submission of the "Checklist regarding the Status of Efforts based on the Guidelines for Responding to Misconduct in Research"

When concluding an agreement for this program, R&D organizations must submit a Checklist regarding the Status of Efforts ("Research Misconduct Checklist") based on the "Guidelines for Responding to Misconduct in Research" (agreement will not be approved unless the Research Misconduct Checklist is submitted).

Accordingly, after April 1, 2024, researchers should check the contents of the website below and download the FY2024 version of the Research Misconduct Checklist form from e-Rad, fill out the necessary sections, and submit it (upload it) via e-Rad to the Research

Integrity Promotion Office, Research Environment Division, Science and Technology Bureau, Ministry of Education, Culture, Sports, Science and Technology before the conclusion of the R&D agreement.

Furthermore, R&D institutions that have already submitted the FY2023 version of the Research Misconduct Checklist will be approved for an agreement regardless of the above. Nevertheless, in this case, then please submit the FY2024 version of the Research Misconduct Checklist by September 30, 2024.

Institutions not receiving competitive funds from the Ministry of Education, Culture, Sports, Science and Technology or administrative agencies under its jurisdiction through a budget allocation or budgetary measures need not submit the Research Misconduct Checklist.

Please refer to the Ministry of Education, Culture, Sports, Science and Technology website below for more information on the Research Misconduct Checklist:

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

(*1) An environment in which e-Rad can be used is necessary for submission of the Research Misconduct Checklist. The R&D institutional registration process for e-Rad requires approximately two weeks. See the URL below for details of the procedure related to the use of e-Rad:

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

(*2) Institutions that conduct research activities that receive budget allocations or measures from the Ministry of Education, Culture, Sports, Science and Technology and the independent administrative agencies under its jurisdiction must submit a Research Misconduct Checklist by September 30 of each fiscal year (or the immediately preceding business day if September 30 falls on a Saturday, Sunday, or holiday) while conducting the relevant research activities.

(3) Measures Taken for Misconduct in Research Activities based on the “Guidelines for Responding to Misconduct in Research”

Misconduct in research activities in this program is treated strictly as described below.

(i) Measures to cancel agreements

If the specified misconduct (fabrication, falsification, and plagiarism) is identified in the research project of the program, the commissioned agreement is canceled or altered, and a refund of all or part of the commissioned funds is requested. Agreements from the following fiscal year onward may not be concluded.

(ii) Measures to restrict application and participation eligibility

Measures given in the table below, depending on the level of inappropriateness and responsibility of the specified misconduct, to restrict application to and participation in this program are imposed upon researchers involved in specific misconduct in research papers or reports of this program and those whose involvement has not been established but who are found responsible to an extent for the violation of due care as a prudent manager of pertinent papers and reports.

Further, if measures to restrict application and participation eligibility are taken, information is provided to pertinent sections of competitive research funding systems distributed by the Ministry of Education, Culture, Sport, Science and Technology and independent administrative agencies of the ministry (“competitive research funding systems related to the Ministry of Education, Culture, Sport, Science and Technology”) and pertinent sections of competitive fund systems distributed by other ministries and their independent administrative agencies (henceforth referred to as “competitive research funding systems related to other ministries and agencies”), which may similarly restrict application and participation eligibility in other competitive research funding systems related to the Ministry of Education, Culture, Sport, Science and Technology and other ministries.

(*) “Application and participation” refers to proposing, applying for, or submitting a new proposal, participating in new research as a co-researcher, or participating in an ongoing research project (ongoing project) as a PI or co-researcher.

Classification of people with submission restriction due to involvement with specified misconduct	Extent of specified misconduct	Submission restriction period*

<table>
<tr><td rowspan="5">People involved in specific misconduct</td><td colspan="2">1. Particularly malicious person who, from the beginning of the research, intended to commit specified misconduct</td><td></td><td>10 years</td></tr>
<tr><td rowspan="3">2. Author of the paper that is the product of research with specified misconduct</td><td rowspan="2">Authors of the paper responsible for its content (supervisor, representative author, or others identified to be equally responsible for the paper)</td><td>Misconduct has a large impact on the development of research in the relevant field, or the maliciousness of the misconduct is judged to be high</td><td>5–7 years</td></tr>
<tr><td>Misconduct has a small impact on the development of research in the relevant field, or the maliciousness of the misconduct is judged to be low</td><td>3–5 years</td></tr>
<tr><td>Authors other than the above</td><td></td><td>2–3 years</td></tr>
<tr><td colspan="2">3. Person who engaged in specified misconduct other than those of 1. and 2.</td><td></td><td>2–3 years</td></tr>
<tr><td colspan="3"></td><td>Misconduct has a</td><td>2–3 years</td></tr>
</table>

Author who was not involved in the specified misconduct but was responsible for the paper of the research involving specified misconduct (supervisor, representative author, or others identified to be equally responsible for the paper)	large impact on the development of research in the relevant field, or the maliciousness of the misconduct is judged to be high	
	Misconduct has a small impact on the development of research in the relevant field, or the maliciousness of the misconduct is judged to be low	1–2 years

* As a general rule, the submission restriction period is calculated as starting from the fiscal year following the fiscal year in which the specified misconduct is identified. The researcher is also ineligible in the fiscal year in which the specified misconduct is identified.

(iii) Measures against researchers whose application and participation eligibility has been restricted under other competitive research funding systems

For researchers whose application and participation eligibility has been restricted due to specified misconduct in research activities in other competitive research funding systems related to the Ministry of Education, Culture, Sports, Science and Technology, grants for operating expenses to national university corporations, inter-university research institute corporations, and independent administrative agencies under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology, basic expenses such as private school grants, and competitive research funding systems

related to other ministries, this restriction period will also apply as the application and participation eligibility restriction period for this program.

Notably, “other competitive research funding systems related to the Ministry of Education, Culture, Sports, Science and Technology” and “competitive research funding systems related to other ministries and agencies” include systems that will newly start calling from FY2024 onward. This also covers systems that ended before FY2024.

(iv) Public announcement of case of specified misconduct

In the event of misconduct in research activities in this program, as a general rule, JST will publicly announce the contents of the applicable case (name of misconduct, type of misconduct, program name, summary of misconduct case, measures taken by JST). The Ministry of Education, Culture, Sports, Science and Technology will also make a public announcement concerning the contents of the pertinent misconduct (the name of misconduct, kind of misconduct, research field of misconduct, name of expense account of misconduct, summary of misconduct, measures taken by R&D organization, measures taken by funding institution, etc.)

Additionally, the abovementioned guidelines stipulate that the R&D organization shall promptly disclose the investigation results when misconduct has been identified. Therefore, each institution should respond appropriately.

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

4.29 Duty to complete education on research ethics and compliance

Researchers who participate in the research project of this program shall receive training on research ethics education for the prevention of misconduct in research activities as per the “Guidelines for Responding to Misconduct in Research” and compliance education as per the “Guidelines for the Management and Audit of Public Research Funds in Research Institutions.”

During the process of concluding an R&D agreement after the proposed research project is selected, the PI must submit a document confirming that all researchers participating in research projects in this program have taken the research ethics education and compliance

education and have understood the content.

4.30 Handling of information on projects and other items on e-Rad

Information on e-Rad regarding each selected project (program name, research project name, affiliated R&D institution name, PI name, budget amount, implementation period, summary of project) is handled as “information scheduled to be made public” stipulated in the Act on Access to Information Held by Independent Administrative Agencies (Act No. 140 of 2001) Article 5, Item 1, B. After selection, this information will be made available on the program’s website and the JST Project Database (“PDB,” https://projectdb.jst.go.jp/) and Research Project Integrated Search (GRANTS, https://grants.jst.go.jp/) operated by JST. Moreover, research result reports submitted by researchers that can be made public may be publicized in the PDB.

4.31 Provision of information from e-Rad to Cabinet Office

The “6th Science and Technology Innovation Basic Plan” (Cabinet decision on March 26, 2021) stipulates that evidence-based policy making (EBPM) will be thoroughly implemented in the science, technology, and innovation administration, and the information registered in the Cross-ministerial R&D Management System (e-Rad) will be used for appropriate evaluation of government-funded R&D, planning of effective and efficient comprehensive strategies, and resource allocation policies.

Therefore, researchers are requested to input information on research outcomes, accounting performance records, and indirect cost execution records for competitive grants for each fiscal year for the selected project in the e-Rad. The information necessary for macro analysis, including information on research outcomes and accounting performance records, will be provided to the Cabinet Office.

The information necessary for macro analysis, including information on research outcomes and accounting performance records, will be provided to the Cabinet Office.

4.32 Registration of researcher information on researchmap

researchmap (https://researchmap.jp/) is one of the largest researcher information databases in Japan with more than 300 thousand registerers and helps publicize registered

achievement information. Further, researchmap is linked to e-Rad and many university faculty databases. Thus, the registered information can be used in other systems, eliminating the need to register the same achievements repeatedly in various application forms and databases and improving efficiency.

The information registered on researchmap is also effectively used for research and statistical purposes in academic and science and technology policy planning by the government. We ask for your cooperation in actively registering this Program on researchmap.

4.33 Patent applications by JST

If an R&D institution does not acquire rights to an invention, JST may acquire those rights in some cases. Therefore, if an R&D institution does not foresee acquiring rights to an invention, the researcher should notify JST promptly, providing information concerning the said invention in any appropriate format (the above “information concerning the said invention” means information necessary for JST to determine whether an application for intellectual property rights is possible, for example, a copy of the notification of invention used in the research institution).

JST will conduct a study based on the received notice, and if JST judges, based on the results, that an application for the said invention is possible, a separate Patent Rights Transfer Agreement will be concluded between the R&D institution and JST.

*Patent application non-disclosure system

The patent system grants patent rights and uniformly discloses inventions for which patent applications have been applied, promoting further technological improvements and eliminating duplicative research and development. Meanwhile, before the establishment of the patent application non-disclosure system, Japan’s patent system was such that once a patent application was filed, even if the invention was not to be disseminated for security reasons, the government had a system in which the contents of the application were made public after one year and six months had elapsed. The systems of other countries commonly keep patent applications related to such inventions private. Therefore, Japan, under its Act on the Promotion of Ensuring National Security through Integrated Implementation of

Economic Measures (Act No. 43 of 2022) (“Economic Security Promotion Act”), established a patent application non-disclosure system in which, under certain cases, procedures such as application disclosure are suspended, and measures are taken to prevent the spread of patent applications.

Under the Economic Security Promotion Act, if the specification of a patent application describes an invention that, if made public, is likely to cause a situation in which external acts will harm the security of Japan and its citizens, through a procedure called “preservation designation,” patent procedures such as publication of application, the decision to grant a patent, and the decision to refuse will be suspended. During this period, the disclosure of the contents of the invention in general, including publication and the implementation of inventions that may lead to similar results, is prohibited as a general rule. Additionally, the removal of the patent application by withdrawing it is prohibited. Please ensure compliance with national laws, guidelines, and notifications, including the Economic Security Promotion Act.

Details of the patent application non-disclosure system are available on the Cabinet Office website. Please see the following for details:

・”Cabinet Office: Patent application non-disclosure system”:
https://www.cao.go.jp/keizai_anzen_hosho/patent.html

Chapter 5 Submission via Cross-Ministerial R&D Management System (e-Rad)

5.1 Cross-Ministerial R&D Management System (e-Rad)

The Cross-ministerial R&D Management System (e-Rad) is a cross-ministerial system that provides a series of online processes (acceptance of applications → selection → adoption → management of adopted projects → reporting of research results) to manage the publicly funded research projects under the jurisdiction of ministries and agencies.

* “e-Rad” is the abbreviation of the Cross-ministerial R&D Management System, which is created by adding the capital letter “e” of “Electronic” to the capital letters of “Research and Development” for science and technology.

5.2 Application method using e-Rad

Applications must be submitted through the e-Rad (e-Research and Development Management System).

When applying, please refer to the e-Rad portal site (hereinafter referred to as the “portal site”) (https://www.e-rad.go.jp/en/).

* Regarding various application processes necessary for using e-Rad, as a general rule, applications using paper documents are not accepted. Therefore, be sure to conduct each process using the e-Rad portal site. Additionally, please pay particular attention to the following points when applying.

(1) Pre-registration for using e-Rad (https://www.e-rad.go.jp/organ/index.html)

Pre-registration of the R&D institution and affiliated researchers is required by the time of application.

- Application for registration of R&D institution

  Please appoint one administrative representative for e-Rad for the R&D organization and complete the procedures from “Application for Registration of R&D Institution” (https://www.e- rad.go.jp/organ/entry.html).

  Please allow at least two weeks to complete the procedure.

  Once registered, researchers need not register again when applying for programs/projects administered by other ministries or agencies.

Re-registration is unnecessary if you have already registered for a program or project administered by another ministry or agency.

(2) Registration of departmental information, administrative staff information, position information, and researcher information

The administrative representative will log in to e-Rad with the ID and password obtained in (1), register departmental information, the administrative staff (if any), position information, and researcher information, and issue IDs and passwords for the administrative staff and researcher.

For the registration procedure, please refer to "10. Procedures for Research Institutions," "11. Procedures for Research Institution Administrative Members," and "12. Procedures for Researchers" in the "Manual for Research Institution Administrative Representatives" on the portal site (https://www.e-rad.go.jp/manual/for_organ.html (Japanese only)).

(2) Application through e-Rad

・Proposal submission by researchers

Please refer to the Researcher's Manual on the portal site (https://www.e-rad.go.jp/manual/for_researcher.html). Applications that have not been "Processed" or "Accepted" by the submission deadline will be considered invalid. Please check the status of your application on the "Proposal List" page. If a researcher's application is submitted by the submission deadline date and time but does not reach one of these statuses, please contact the program staff. Although the proposal must be "accepted" by the funding agency to manage the submitted proposal, this status is not required in terms of completion of the application process by the researcher. If the status of the submitted proposal is "Applying," and the application type (status) is "Allocation Agency Processing Application" by the deadline, the application has been successfully submitted.

Precautions

(1) The application information must be entered online, and the application form must be attached to apply.

The application form can be uploaded as a single electronic file with a maximum

file size of 3 MB. Please pay attention to the file size if using image data in the file. If exceeding the upper limit is unavoidable, please contact the program staff before applying.

(2) Incomplete application forms will not be considered for selection. Please read the application guidelines and research proposal instructions carefully.

5.3 Others

(1) Contact information regarding the e-Rad operation method

Inquiries regarding the program will be handled by the program staff. For inquiries regarding the e-Rad operation method, please contact the e-Rad Help Desk. Please carefully check the website for the call for proposals for this program and the e-Rad portal site before making an inquiry. JST cannot respond to any inquiries regarding the selection status or acceptance/rejection of proposals.

Inquiries regarding the program and procedures for creating and submitting application documents	Department of R&D for Future Creation, JST	Please send inquiries by e-mail E-mail: cronos@jst.go.jp
Inquiries regarding the e-Rad operation method	e-Rad Help Desk	0570-057-060 (Navi Dial; available within Japan) 9:00–18:00 *Excluding Saturdays, Sundays, holidays, and New Year's holidays

○ Page for call for proposals of this program:
https://www.jst.go.jp/kisoken/cronos/koubo/index.html

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

(2) e-Rad available hours

As a general rule, e-Rad operates 24 hours a day, 365 days a year, but service may

be suspended due to system maintenance. If service is to be suspended, users will be notified in advance on the e-Rad portal site.

※ **Please refer to the Appendix for Chapter 6 "Areas and Grand Challenges Targeted for Application"**