FY2021

STRATEGIC BASIC RESEARCH PROGRAMS (RISTEX)

Solution-Driven Co-creative R&D Program for SDGs

(SOLVE for SDGs)

Scenario Creation Phase, Solution Creation Phase

Call for R&D Proposals

[Application Guidelines]

Application Call Period

Tuesday April 5 (Mon.) ~ Noon (12:00, Japan time) on June 8 (Tue.), 2021

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

Research Institute of Science and Technology for Society (RISTEX)

and

Department for Promotion of Science in Society

Japan Science and Technology Agency

Overview of Call for Proposals of Strategic Basic Research Programs (Research Institute of Science and Technology for Society, RISTEX)

The R&D program soliciting proposals in this call is the "Solution-Driven Co-creative R&D Program for SDGs (Scenario Creation Phase, Solution Creation Phase)" (the "Program"). Please refer to the next page for the main selection schedule. Applications will be made through the Cross-ministerial R&D Management System (Please refer to “4.6 Application Method”). Please note that applications using paper media (postal email, express parcel delivery, hand delivery, etc.) or made by email will not be accepted.

The overview and features of the Program are as follows. Please prepare your application after confirming the details in “Chapter 3 Summary of Research and Development Program.”

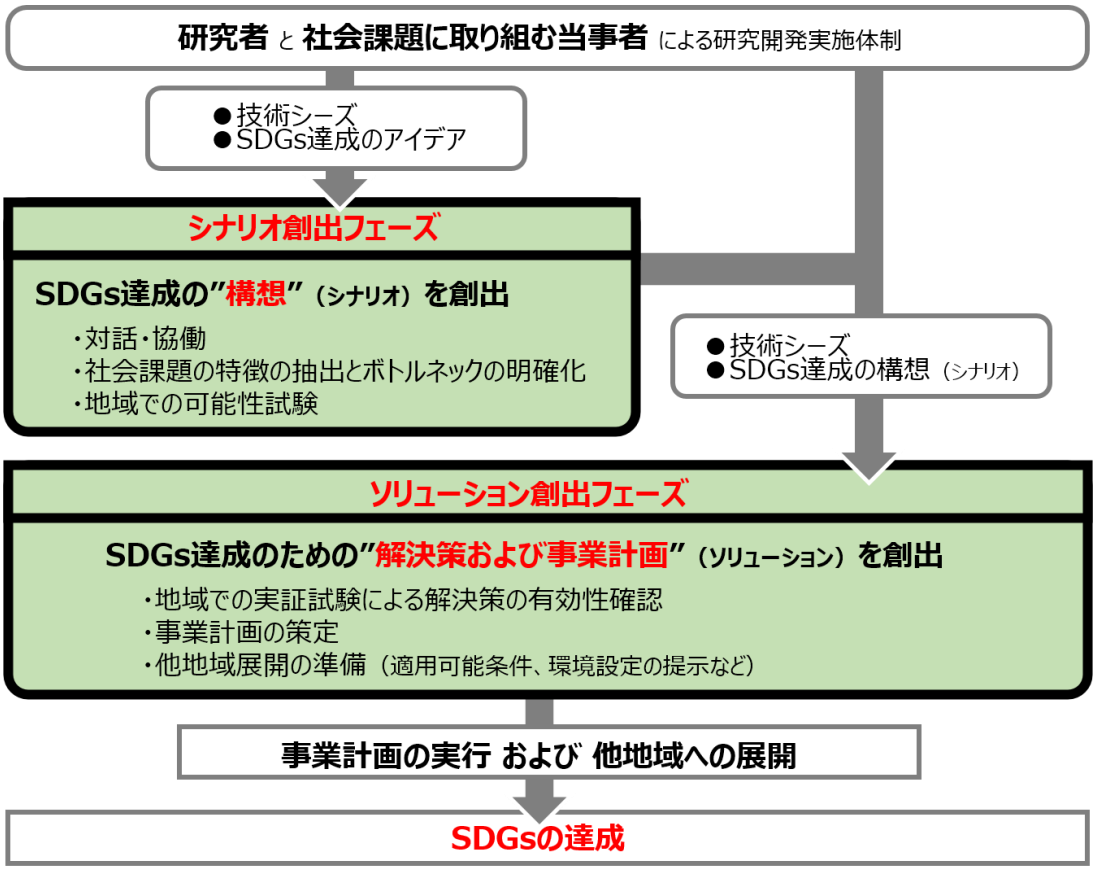


Figure: Solution-Driven Co-creative R&D Program for SDGs (Scenario creation phase, Solution creation phase) Overview

- The Program will conduct **"co-creative"** research and development. Therefore, **dialogue** and **collaboration with local communities** is essential. Researchers at

universities (Principal Investigators) and **representatives of parties working on social issues in communities** (Collaborators) are asked to work together to solve issues.

- In the Program, they will work on the following in each phase to **establish a business plan and implementation system for solving social issues** after the research and development period ends.

  [Scenario Creation Phase]

  Extraction of social issue characteristics, **clarification of bottlenecks**, **performance of community possibility tests**, and **creation of concept (scenario)** to achieve the SDGs

  [Solution Creation Phase]

  Confirmation of effectiveness of solution to social issues through **verification tests in communities**, presentation of **applicable conditions for expansion into other communities**, and **business plan formulation** for independent continuation **centering on Collaborators**

■ Selection Schedule

Call begins	April 5, 2021 (Mon.)
Briefings of Solicitation	Online Implementation Details will be posted on the proposal application website as soon as decided. (https://www.jst.go.jp/ristex/proposal/)
Application deadline *1	Noon (12:00 p.m.) on June 8, 2021 (Tue.) (No delays accepted)
Document screening period	June to July (planned)
Notification of document screening results	Notice will be provided at least one week prior to interview screening
Interview screening*2	Scenario Creation Phase: August 27, 2021 (Fri.) Solution Creation Phase: August 24, 2021 (Tue.)
Candidate Interview with the	September 6 (Mon.) and 7 (Tue.), 2021

Program Director	
Notification and announcement of selection results	September 2021（planned）
Start of research and development	October 2021（planned）

*1 Deadline for submitting applications through the Cross-ministerial R&D Management System (e-Rad).

*2 Interview selection may be held online using Zoom, etc. When conducting using an online format, please cooperate for the advance connection test.

■ Other Considerations

a. Proposers eligible for the interview after the results of document selection will be notified in writing and informed regarding the guidelines for the interview, date and time, and additional documents to be submitted. **During interview, both of Principal Investigator and Collaborator will be asked to explain the concept of his/her research and development project.**

b. The Principal Investigator will be notified of the results of document evaluation and interview regardless of if they are accepted or not.
In addition to the above, please be sure to enter an e-mail address, phone number and address registered in e-Rad, and the contact information provided in application form 1, as JST may contact the Proposer.

c. Proposers must have completed the educational program on research integrity at the time of proposal application. For details, please refer to "4.5 Requirements for Application" and "6.1 Enrolling in and Completing the Educational Program on Research Integrity".

■ Start of Call Focusing on "Prevention of Social Isolation"

In fiscal year 2021, a call for research and development focusing on the prevention of social isolation will begin.

We will support the development of methodologies to prevent social isolation based on changes in social structures due to COVID-19, and research and development aiming for

actual application in society.

The issue of social isolation covers various topics, but in this framework, among initiatives concerning social isolation, it will target research and development requiring an in-depth understanding of social mechanisms utilizing knowledge from the humanities and social sciences, including analyses of isolation factors in new social structures, isolation risk assessment methods and the development of isolation risk reduction measures, and is expected to cover phases up until Proof of Concept (PoC) on-site.

Please consider this as well if you are in such a phase.

(Information on the start of the open call will be posted on the RISTEX website.)

When submitting a proposal, please carefully check the content of the call guidelines.

We Are Waiting for Your Application.

CONTENTS

Chapter 1 Introduction to the Call for R&D Proposals

1.1 Overview of Strategic Basic Research Programs (RISTEX)

The Research Institute of Science and Technology for Society (RISTEX) of the Japan Science and Technology Agency (JST) seeks to create new social and public value through solving specific social problems. By building networks of stakeholders and implementers who engage in solving social problems, and promoting research and development (R&D) that makes use of knowledge in natural sciences, humanities and social sciences (HSS) under a competitive environment, we aim to obtain outcomes that will lead to practical solutions to problems in the actual society and to promote utilization of obtained outcomes in wider society.

In the JST Strategic Basic Research Programs (RISTEX), RISTEX sets up R&D Focus Areas and Programs (referred to as “Focus Areas and Programs”) it considers important in solving social problems, calls for proposals and promotes those selected as R&D projects (referred to as “Projects”).

The management of Focus Area and Program is performed by the Program Supervisor with the cooperation of Program Advisors. Principal Investigators and R&D participants conduct R&D within the institutions with which they are affiliated under the Program Supervisor’s management.

○ **Program Supervisor**

The Program Supervisor performs management of the Program as the person responsible for the operation of R&D that contributes to achieving the program targets set by the national government or RISTEX. The Program Supervisor conducts appropriate and flexible operations of the Program so that R&D can be carried out efficiently with the participation of stakeholders from diverse fields. In order to do this, the Program Supervisor develops the necessary networks, selects Projects, approves R&D plans, monitors their progress and provides advice through site visits and other means, and performs Ex-post evaluations. In addition, the Program Supervisor communicates the outcomes of the Program and how these are deployed in the wider society.

○ **Program Advisor**

The Program Advisor provides appropriate advice to the Program Supervisor from an expert perspective.

○ **Principal Investigator**

The Principal Investigator represents the Project and has overall responsibility for the Project. The Principal Investigator performs suitable management of implementation of R&D and appropriately

manages the outcomes and overall R&D expenses of the Project with R&D institution.

1.2 For Researchers Considering Applying or Participating in the Programs

1.2.1 Contribution to the accomplishment of sustainable development goals (SDGs)

JST to contribute to the accomplishment of SDGs!

At the "United Nations Sustainable Development Summit" held in September 2015, "Transforming our world: the 2030 Agenda for Sustainable Development" was unanimously adopted; the document was an achievement with "SDGs" at the core as a further comprehensive and new action target common to the world for the human beings, the Earth, and the welfare. The seventeen goals in the SDGs do not only indicate various problems in relation to the sustainability that is facing the humankind but also demand that those problems be solved comprehensively and in an integrated way. It is expected that scientific and technological innovation solves such social problems and that scientific evidence is provided to contribute to the formulation of excellent policies. We can say that these roles conform to "the science in the society and the science for the society," a new task of the science that was declared in "World Declaration on Science and the Use of Scientific Knowledge" (Budapest Declaration*), adopted at International Council for Science in 1999. As a core organization to promote the science and technology policies in Japan, JST promotes advanced fundamental research and works on the research and development of a problem-solving type to meet the requests from the society. SDGs are one of the worldwide objectives that can itemize all JST missions. We, in the course of the JST programs, want to collaborate with industries, academia, government agencies, and private enterprises and cooperate with researchers to realize a sustainable society.

Michinari HAMAGUCHI

President, Japan Science and Technology Agency (JST)

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

○For SDGs, the endeavors of JST, etc., access the following website.

https://www.jst.go.jp/sdgs/en/actionplan/index.html

1.2.2 Promotion of Diversity

JST Promotes Diversity!

The diversity is essential requisite for promotion of scientific and technological innovations. It is possible to open a new perspective of science and technology by the collaboration and discussion with various stakeholders having different specialties and values, irrespective of gender and nationality.

JST is, by promoting advances in diversity in its all activities in science and technology, undertaking possible problems of our future society, contributing to the strengthening of industrial competing power of Japan as well as to the enrichment of spiritual happiness of people. Our activities in this field accord with the “Sustainable Development Goals (SDGs)” agenda of the United Nations, in which goals relevant to diversity advancement are shown, including gender equality, contributing to efforts on our domestic problems but also to those on problems common to various countries.

Currently, the activity of woman is being positioned at the core of the Growth Strategy of the Japanese Government, being started as “the largest potential of Japan” in the strategy paper. Expending the participation of woman researchers in R&D projects is substantially important for advancing research and development, as they are a party of various researchers supporting science and technology innovations. JST is expecting that woman researchers would take this opportunity, positively and will apply to our Strategic Basic Research Programs, actively. JST is undertaking the improvement of our “Childbirth, Child-raising, Nursing Care Support System”, to constantly, based on the voice of the system users, creating environments enabling a researcher on leave to return his/her research, for example.

The call for and review of R&D proposals will be conducted also from a viewpoint of advancing diversity. Our dear researchers, we cordially invite you to the call for R&D proposals of the Strategic Basic Research Programs.

Michinari HAMAGUCHI
President, Japan Science and Technology Agency (JST)

We Are Waiting for Your Application!

JST is promoting diversity in research, based on our perspective that the diversity is for understand-

ing of other researchers having ideas different from yours, and for creation of new values by combining your and their ideas. The diversity thus has potentials to give solutions not only to the domestic problems but also to problems common in all nations across the world. Therefore, JST is undertaking the societal problem of the globe such as the Sustainable Development Goals (SDGs), through the promotion of diversity in research, collaborating with foreign institutions.

JST is promoting the diversity by ensuring the activities of women researchers, of course young researchers, and foreign researchers having foreign citizenship. To ensure that each researcher is fully able to exercise his/her skills, JST is providing continual supports for childbirth, childcare, and homecare of elderly relatives, and also endeavoring to maintaining a balanced membership composition in committees and alike. JST especially welcomes the application of women researches to our program, from whom we cannot have so many R&D proposals in previous years, to realize environments where various kinds of researcher can work, cooperating and competing with each other. Through these activities, JST is pursuing the creation of new values.

We are sincerely waiting for your active applications, especially those form woman researchers.

Miyoko WATANABE
Deputy Executive Director and Director of the Office for Diversity and Inclusion
Department of Strategic Planning and Management
Japan Science and Technology Agency (JST)

1.2.3 Toward the Promotion of Fair Research

Toward the Promotion of Fair Research

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. To prevent misconduct in research activities, there must be a function of autonomous self-purification in the scientific community. Each researcher must strictly adhere to strict discipline and work to create new knowledge and inventions that are useful for society, based on high moral standards that meet the expectations of society.

As a funding agency for research, the Japan Science and Technology Agency (JST) considers research misconduct to be a grave issue and makes every effort to prevent it in cooperation with relevant organizations, with the goal of regaining public trust.

1. JST believes that honesty 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 programs in cooperation with relevant organizations, in order to prevent misconduct.

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

Michinari HAMAGUCHI

President, Japan Science and Technology Agency (JST)

1.2.4 Open access and data management plan

JST announced the basic policies for handling research achievements towards the promotion of open science in April 2017. The policies stipulate the basic concepts for allowing one's access to papers on research achievements and archiving, as well as on managing and disclosing research data.

In principle, researchers participating in this program are mandated to make the produced documents on research achievements available to the public via the repository organizations or publications for open access. Researchers are also requested to prepare a data management plan. This plan will contain details on policies and plans for archiving, managing, and publishing, or the non-disclosure of research data, which are being developed for achievements. Researchers must also submit the plan, along with the research plan document to JST. It is also mandatory for them to undertake archiving, managing, and publication of research data based on this plan.

Please see the following for details:

○ JST's basic policies for handling research achievements toward an open science promotion

https://www.jst.go.jp/all/about/houshin.html#houshin04

○ JST's Basic Policy Management Guidelines for Handling Research Outcomes for the Promotion of Open Science

https://www.jst.go.jp/pr/intro/openscience/guideline_openscience.pdf

In order to understand the content of information, support researchers and reflect this in basic policy (revisions), JST analyzes statistical data such as the number of data modules, the type of data, the type of publication, and the location of storage. The statistical data analyzed is intended to be made public, but we will not disclose individuals' personal data or names.

*For life sciences data, please refer to "6.18 Data disclosure from the National Bioscience Database Center."

Chapter 2 Philosophy on Program Administration for the Call and Section

Program Supervisor: SEKI Masao

Specially Appointed Professor in the School of Business Administration at Meiji University/
Senior Advisor in the Sustainability Department at Sompo Japan Insurance Inc.

1. 1. Background to the SDGs

The definition of sustainable development in the Sustainable Development Goals (SDGs) now known throughout the world comes from *Our Common Future* (1987). This is a report by the World Commission on Environment and Development commonly known as the Brundtland Commission that was chaired by Norway's first female prime minister Gro Harlem Brundtland. This definition is as follows: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

This concept, which was established in 1987, is still in popular use without having lost its freshness now more than 30 years later. On the contrary, the importance of this concept and the necessity to realize it are becoming more and more strongly recognized together with a sense of crisis. This strong sense of crisis led to the adoption of the SDGs by the United Nations in 2015. While celebrating the foresight and insight of the Brundtland Commission, if we think calmly, it is a great shame that we haven't yet been able to solve this issue.

As can be clearly seen by looking at the changes in various statistics, the sustainability of human society has not improved; instead, future generation have been exposed to even greater risks while current needs are also not being met. Global warming has been exacerbated over the past 30 years. The concentration of CO2 in the environment has finally exceeded 400 ppm – said to be the danger level. The Paris Agreement was finally agreed at COP21 in 2015. Countries around the world committed themselves to working together to fight climate change. However, it will be impossible to keep the rise in temperature since the Industrial Revolution to within 1.5°C as is strongly recommended

by scientists at the current voluntary target levels of each country. The internationally agreed target of 2.0°C is also equivalent to pie in the sky as it is.

According to a report by the Intergovernmental Panel on Climate Change (IPCC), it is predicted that the rise in temperature will be 4.8°C in a worst-case scenario and the rise in the sea level will be up to 0.82 m by the end of this century. In addition to the impact on the ecosystem and the intensification of natural disasters, it is expected that this will have an unfathomable effect on society, the economy and people's lives in all aspects (e.g., food, water and health).

Together with the climate crisis, biodiversity has also been lost at a rapid pace over the past 30 years. According to a report by the Intergovernmental Science-policy Platform on Biodiversity and Ecosystem Service (IPBES) released in May 2019, as many as one million species of living things are currently in danger of extinction. A decrease in biodiversity will bring a significant decline in ecosystem services. It is predicted that this will have a massive and wide-ranging impact on human society. For example, a decrease in pollinators will bring a reduction in crop yields. It has been calculated that this will lead to an economic loss of 577 billion dollars annually.

2. The Things Happening in the World Now

In August 2018, Greta Thunberg, a (then) 15-year-old Swedish girl, started protesting climate change policies by herself. She did this by boycotting her classes at school and holding a sit-in in front of the national parliament every Friday. Starting with countries in Europe, this activity spread all over the world as the Fridays for Future movement. Greta, who was invited to give a speech at the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24) after that, resolutely declared that "until you start focusing on what needs to be done rather than what is politically possible, there is no hope." She strongly urged policymakers to take action to protect the future of young people and to avoid a climate crisis. Greta's powerful message spoken in her calm tone created a storm of empathy at an unprecedented size around the world. It drove young people into action. Teenagers stood up simultaneously and marched in demonstrations in 125 countries around the world on Friday, March 15, 2019. Furthermore,

7.6 million young people in more than 185 countries stood up together with the United Nations Climate Change Summit in September 2019.

The climate crisis is shared by people around the world. More than 1,200 cities and municipalities across the planet have now declared a climate state of emergency. The governments of Europe, the United States, China, Japan and other major countries have aligned together to commit to realizing a carbon-neutral society by the middle of this century. Nevertheless, the path to solving this issue is steep and there is also no time to spare. We must realize a 45% reduction in greenhouse gases by 2030 to keep the rise in temperature within 1.5°C.

We truly need to execute the transformation that forms the basis of the philosophy to the SDGs with the courage and determination to create a new socioeconomic system that is not simply an extension of the past to fight climate change.

Poverty and widening inequality are major global issues when it comes to “leaving no one behind” – another pillar of the philosophy to the SDGs. A FY2019 report by the international NGO of Oxfam states that we are no longer in a situation to be able to control the worsening unfair distribution of wealth and the ever-increasing inequality. For example, the assets of just the 26 wealthiest people in the world are equal to the assets of the world’s poorest 3.8 billion people – half of the world’s population. Furthermore, 82% of the new wealth generated in 2017 was obtained by just the richest 1% in the world. The least economically advantaged 3.8 billion people in the world got just less than 1% of that.

Moreover, looking at the interrelationship between these two global issues of climate change and poverty, it is important to note that these poor and vulnerable people are most negatively affected by climate change in terms of abnormal weather and natural disasters. The urgent issue now is to aim for a carbon-neutral society to mitigate climate change while at the same time looking to realize a society resilient to climate change by putting more effort than ever before into disaster prevention and other measures to adapt to climate change. We need to realize a society resilient to the various secondary risks facing humans (e.g., increasing natural disasters) in addition to aiming for sustainable and inclusive increasing economic growth.

Humankind is now facing a tough battle against COVID-19. However, we must aim to build an even better society (build back better or build forward better) instead of simply

returning to how things were in the past when it comes to recovering from our damaged economy and society. The key to this is economic recovery through massive investment to realize a carbon-neutral society (green recovery). At the same time, we must aim to realize an inclusive and resilient society through a co-creative approach to solving regional issues such as with the Solution-Driven Co-creative R&D Program for SDGs. These are nothing less than the realization of the philosophy of the SDGs.

3. What We Must Do

Needless to say, these global issues of the climate crisis and poverty are not just the problems of others. We, living in Japan, need to take action to bring about a long-term revolution. At the same time, there are several pressing problems that Japanese society needs to solve in particular to create a sustainable society in which no one is left behind.

For example, in Japan, where the birthrate is declining and the population is aging at a rapid pace, the working-age population to maintain society is plummeting. It is clear that it will not be possible to maintain the current social system in future generations. The reality is that we are either not aware of this crisis which we know will arrive in the long-term or we are not taking sufficient action to deal with it. It is expected that the trend for the population to concentrate in Tokyo and other big cities will continue. Meanwhile, even prefectural capitals and other core cities in regions outside of Tokyo will see a decline in population – especially a decline in the working-age population. This will lead to us facing a serious community sustainability crisis.

However, as indicated by the phrase “Japan as an advanced nation on issues,” the reality is that the various problems in Japan will also surely eventually be faced by many other countries in the future. Accordingly, if Japan can demonstrate first-hand effective solution strategies ahead of others, these can be used as a model in other countries in the future. It will be possible to deploy the Japanese model to the rest of the world. Crisis is also an opportunity. Japan providing the solution to the world’s issues can lead to the mid- to long-term growth and development of our nation. It appears that Japan has been given a unique opportunity.

Rapidly advancing science, technology, and innovation (STI) can be an especially effective means for that. For example, services that utilize information technology (e.g., AI, the IoT, big data, 5G, robotics, drones and blockchains) have already begun to be used widely in smart agriculture, mobility, logistics, medical care, healthcare and other fields related to daily life. It is true that these technologies which sometimes have the power to destroy the existing order and to greatly change society and people's lives also come with various risks because they are new technologies. Nevertheless, they provide an indispensable driving force to the realization of the SDGs with their high ideal of transforming society and building a society in which no one is left behind.

Technology is not all-powerful; technology itself does not solve issues. Science and technology, including digital technology that is advancing at an accelerating pace, only has the power to be used to solve issues for the future of people and society. In other words, wisdom and control capabilities are needed on the user side to utilize science and technology for human society. Building a human-centric ultra-smart society is the concept of the solution we are aiming for.

This is truly the core of the Society 5.0 strategy– Japan's new growth model – indicated in the 5th Science and Technology Basic Plan approved by the Cabinet in January 2016. Industry in Japan is also supporting the government's strategy as the entity responsible for implementing it. The Japanese Business Federation (Keidanren) clarified the intention of industry to play a leading role in realizing a sustainable society in its Charter of Corporate Behavior, which serves as a code of conduct for its member companies, that it announced in November 2017 after a major revision incorporating the SDGs. The Keidanren has established a Society 5.0 for SDGs strategy in its guide to implementing the charter that indicates concrete actions. With this, it is encouraging the efforts of member companies. Moreover, in November 2018, it announced a comprehensive strategy called "Society 5.0: Co-creating the Future" to make policy proposals for the new era. The Keidanren, the University of Tokyo and the GPIF published a joint research report in March 2020. They declared that they will work together under the aim of evolving ESG investment, realizing Society 5.0 and achieving the SDGs. Furthermore, the Keidanren announced its New Growth Strategy with a fresh outlook on the future during the COVID-19 pandemic in November 2020. The "." period marks the end of the previous growth path. The federation

will now work to realize sustainable capitalism and to reduce disparities while enter into dialogue with multiple stakeholders using a backcasting approach.

Now is the time to create and scale-up solution strategies to global and local issues by all sectors and stakeholders (e.g., the government, academia, industry, investors, civil society, consumers, labor and the media) bringing together their wisdom and ability to take action with a long-term view. The key to this is the co-creation of solutions based on consistent stakeholder participation and dialogue from the R&D stage to finally implement new never-before-seen technologies and ideas in society.

4. What This Program Is Aiming For

This program is aiming to use such STI to solve social issues in specific regions. The goal is to then summarize those results into a business plan to present as a solution that can be deployed in other regions in Japan and overseas. It is based on technology seeds. However, it is not technology-driven; rather, science and technology should only be optimized and customized to solve issues. It starts with the concept of being solution driven – seen as one of the so-called constituent requirements of the social system. We emphasize the idea of backcasting to think about what we should do by calculating backward the difference with the current situation after first ascertaining with what kind of society we should be aiming for based on the external environment and objective scientific knowledge with outside-in approach.

The issues facing regions today are wide-ranging and complex. To solve them, in addition to each entity responding individually, it is essential to work to find the overall optimal solution that is not suboptimal with collaboration by various stakeholders. The 17 SGDs are also not a collection of independent and disjointed goals. Therefore, it is necessary to work on the SDGs while keeping in mind the interrelationships, trade-off and synergies between them. We believe it is important to take a stance of making society even more sustainable, inclusive, and resilient by transforming the social system itself through co-creative activities in which diverse stakeholders collaborate.

The aim of the SDGs is to create a world in which no one is left behind by organizing and establishing common goals beyond the individual standpoints of citizens, companies,

central/local governments, NPOs, researchers and others regardless of whether in a developed or developing country. Researchers have their own issues unique to researchers and local governments also have their own issues unique to local governments. Basically, there is a tendency to think that each sector is an “expert” on those problems and that they should therefore be solved by those respective sectors. However, ex-examining this from the perspective of the SDGs, we see them as common issues that should be solved by everyone living in this society participating as persons concerned, engaging in dialogue, learning from each other, producing ideas and collaborating by leveraging their strengths. It will not be possible to solve the difficult and complex issues faced by modern society without starting from this basic concept. This will make it possible to create a big impact for the first time that sectors cannot produce on their own.

This program aims to promote co-creative activities for that purpose (extraction and sharing of issues; dialogue, communication and trust building; creation of spaces and tools for diverse actors to gather and the design of a management system for that; establishment of performance indicators (KPIs) and intermediate goals and the formulation of solution scenarios; feasibility tests in the field; demonstration experiments; and formulation of a business plan). It will support the creation of living insights to produce meaningful changes that will have an impact on society in the form of scenarios and solutions to transform society and to realize a resilient, inclusive and sustainable society in which no one is left behind.

Chapter 3 Summary of Research and Development Program

3.1 Backgrounds and Goals of the Program

Transforming Our World: The 2030 Agenda for Sustainable Development (the 2030 Agenda) gives climate change and natural disasters as issues to face in addition to poverty, hunger and inequality. It expects efforts to address these.

Similarly, the 2030 Agenda argues that science, technology and innovation (STI) in a wide range of fields (e.g., information technology, medicine and energy) has the great potential to accelerate human progress, to close the digital divide and to develop a knowledge society. Science, technology, and innovation are positioned as an important means of realizing this. They are needed to contribute to achieving goals.

The 2030 Agenda gives 17 Sustainable Development Goals (SDGs) and 169 targets under the basic philosophy that no one will be left behind. We believe it is important that people who are working on regional social issues in Japan and people who wish to utilize their technology seeds to tackle social issues join forces and conduct R&D. This is needed to identify social issues and to create the solution strategies to them by means of science, technology, and innovation toward the achievement of these SDGs. We will promote R&D through co-creation of both parties in this program.

We will call for R&D proposals and will then select them as R&D projects in this program. We are calling for proposals that identify social issues in regions* and then demonstrate solution strategies to those issues in this program. At the same time, we ask that participating teams formulate a business plan to realize solution strategies after the end of the program. We are aiming to create a solution as one that combines that solution strategy and business plan.

We assume that the solutions created through this program will be taken over by those who are working on social issues. We expect those people to establish the solution strategies in specific regions and to then accumulate achievements at the regional level

through activities to deploy them to other regions including those overseas. We hope that this will lead to the achievement of the SDGs.

> *In this program, we will rate proposals for regional social issues that we can anticipate will be deployed horizontally in a wide range to other regions in Japan and then at a global level and that we can expect to further contribute to the achievement of the SDGs by bringing about a major economic and social impact higher than those we anticipate will be limited to a small-scale deployment of results because those issues exist only in a specific region.

3.2 Framework of the Program

Researchers (natural sciences, humanities and social sciences) and those involved in tackling social issues (Collaborators) will work together on R&D based on the idea of achieving the SDGs by utilizing technology seeds that have already been obtained. The purpose of this is to create solutions to regional social issues toward the achievement of the SDGs.

3.2.1 Research and Development Focus

(Relationship with the 17 Goals)

Please note that the 17 goals and 169 targets of the SDGs are related to each other rather than being individually independent. Accordingly, we are not seeking the sacrifice of one goal to achieve another goal.

(Three Dimensions of Sustainable Development)

The 2030 Agenda states that “we are committed to achieving sustainable development in its three dimensions – economic, social and environmental – in a balanced and integrated manner.” There is a need to create value that balances economic, social and environmental value in creating solutions to social issues.

(Targets of Support in This Program)

The efforts themselves to solve real-life social issues are the targets of support. It is

essential that there are already technology seed to be used to solve social issues. Consequently, R&D of technology seeds itself is not a target of support.

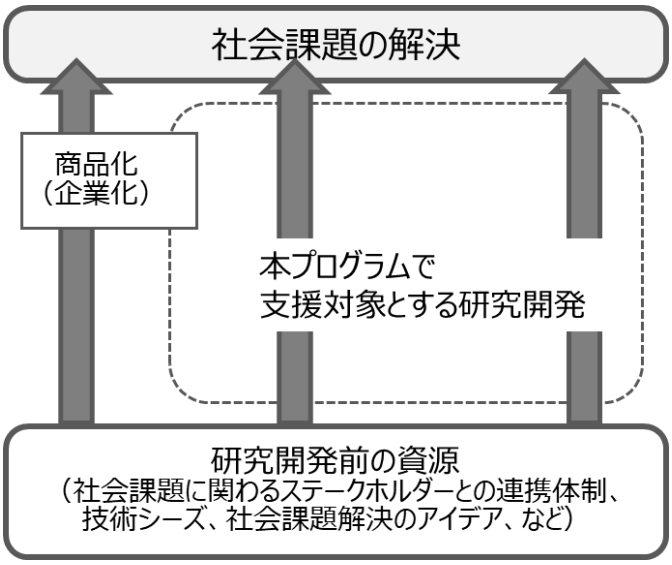


Figure: Image of the Targets of Support in This Program

Science, technology, and innovation are important means to achieve the SDGs. However, we believe solving issues by combining a variety of expertise with existing technology seeds can also be an effective approach instead of technology seeds that use cutting-edge science and technology serving as the sole driving force of innovation.

The technology seeds in this program will be those with R&D results in the science and technology whose applications are envisaged. They will also be those which are at the stage in which it will be possible to test their feasibility in society. Even if these seeds have results in science and technology to solve real-life social issues, the laboratory-level feasibility tests to demonstrate their effect as a prototype and the development of software at the laboratory level will have already been completed.

In addition, even if the activities will ultimately contribute to solving problems in social issues, those that pursue only the commodification and commercialization of software and equipment are not targets of support in this program.

3.2.2 R&D Phase

We are looking for proposals to conduct R&D up to the creation of solutions that target specific regional social issues in regions in Japan in this program. We will establish two phases – the scenario creation phase and the solution creation phase – to provide the

appropriate support according to the progress of the R&D. In either phase, proposals will depict a vision and adopt the backcasting technique to formulate a plan by coming back from that vision to the present time.

<Scenario creation phase>

Proposals will extract the characteristics of regional social issues through dialogue and collaboration and then analyze and clarify bottlenecks to tackle specific social issues. Proposals will examine solution strategies that utilize technology seeds and will then conduct a feasibility test in the region under the assumption of a new social system that solves social issues. Furthermore, this is the phase in which proposals will prepare a roadmap based on the evidence obtained from the feasibility test and then create a concept to realize deployment to other regions and to achieve the SDGs by FY2030.

<Solution creation phase>

Proposals will conduct R&D based on the concept of deployment to other regions and achievement of the SDGs by FY2030 (hereinafter the “scenario”). They will then demonstrate the effectiveness of the social strategies for social issues through demonstration experiments in specific regions. At the same time, proposals will also present the applicable conditions and environment settings for deployment to other regions including those overseas. In parallel with this, this is a phase in which proposals will formulate a plan for independent continuation after the end of the program (business plan) and will then prepare to implement that plan. We assume that this business plan will be implemented mainly by the Collaborators.

This phase will support the demonstration stage. Although it is not intended to serve as a dissemination stage, it will be necessary to complete the foothold to a structure that allows continuation of independent activities and dissemination under the assumption that Collaborators will become the recipients of the results at the end of the solution creation phase. We are looking for proposals that specifically envision a path to independent activities.

The Proposer can apply for either the scenario creation phase or solution creation phase.

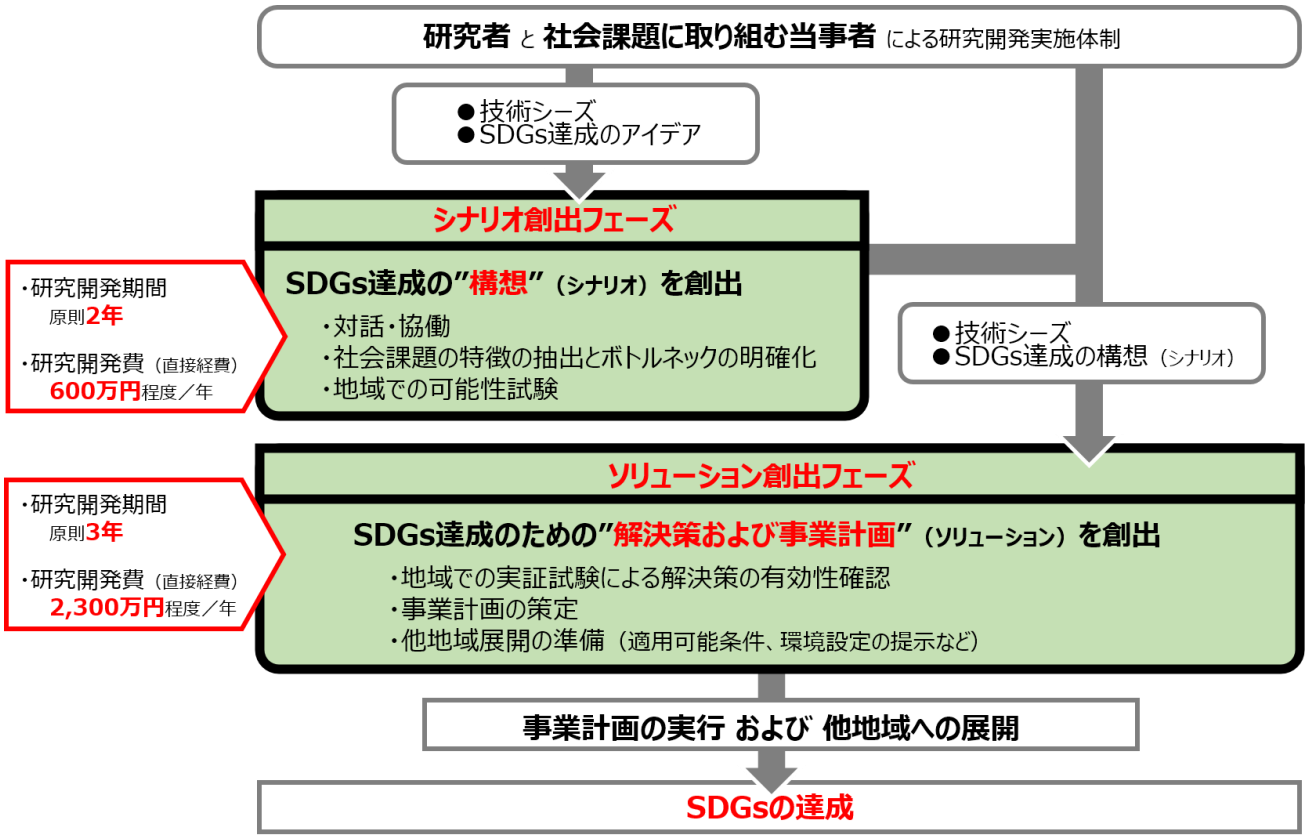


Figure: Overview of the Research & Development Phases

3.2.3 Notes on Proposals and the Conduct of Research and Development

This program attaches importance to cooperation with the industry, the Cabinet Office's SDGs Future City, the SDGs for Regional Revitalization Public-Private Partnership Platform, and activities to achieve the SDGs overseas. The Program Supervisor, Assistant Program Supervisor, Program Advisor and Secretariat may propose cooperation between the project and these organizational entities according to the progress of the project. If possible, we would also like to promote interaction with diverse entities including those overseas outside of the team in the project.

Moreover, we believe it is especially important to expand the base of young and female researchers who participate in interdisciplinary R&D aimed at solving regional issues while having an international perspective through this program. To that end, we look forward to active efforts to appoint young people and women to contribute to personnel development.

As the problem of COVID-19 is greatly affecting social life, it is also important to tackle such pressing social problems and problems that may affect us in the future.

(Management of the Program)

JST RISTEX and “Science and Society” Promotion Dept. will operate this program using the following structures and methods.

① A Program Supervisor is put in charge of operating the program and provides overall management.

② Assistant Program Supervisors are appointed to act on behalf of Program Advisors for some part of their tasks.

③ Program Advisors are appointed to give specialist advice to the Program Supervisor.

④ Together, the Program Supervisor, Assistant Program Supervisor, Program Advisor, and the secretariat conduct the call for projects and its selections, and implement meetings or initiatives necessary for effective program management (e.g., advising on research and development, conducting site visits, etc.).

⑤ The Program Supervisor will conduct reviews as necessary, including the adjustment of research and development budgets and the restructuring and consolidation of projects.

⑥ In running the program, we will respond flexibly, considering the social situation and international trends, which includes changes of emphasis and amendments to the call and selection policy.

⑦ In running the program, we will actively conduct various projects to promote exchange, cooperation and interaction among the projects selected and set up opportunities for discussion with internal and external parties that have a cross-sectional and bird’s-eye view of the projects (e.g., program-wide meetings). We will also conduct outreach activities about R&D outcomes (such as meetings for reporting outcomes and disseminating information on the Web.).

3.2.4 Deployment after the End of the Project

<Scenario creation phase>

In the scenario creation phase, we hope that R&D will continue by acquiring the

solution creation phase and other public funds or private funds. We expect this will lead to the deployment of the project results in other regions and implementation in society after the R&D period.

We ask that you apply to the call to participate in the solution creation phase in the same way as other proposals from the perspective of fairness to conduct R&D in the solution creation phase. Adoption or rejection will be determined in response to selection made under the same conditions and process as the other proposals. If you apply for the solution creation phase in the final year of the scenario creation phase (during the R&D period) and your proposal is adopted, you can continue your R&D without interruption.

<Solution creation phase>

We are looking for proposals that will be able to widely deploy the solutions proven in regions in Japan to other regions after the end of the R&D project. Furthermore, we are seeking proposals aimed at achieving the SDGs.

In addition to being deployed on the United Nations platform (e.g., the Online Platform of the Technology Facilitation Mechanism) as a tool to communicate with diverse stakeholders, we expect proposals to attract ESG investment, boost the Cabinet Office's SDGs Future City initiative and lead to other R&D projects.

Chapter 4 Call for Proposals and Selection

4.1 Call Period and Selection Schedule

The main schedule for selection is as follows. Please note that the submission deadline differs from other areas and programs.

Applications will be made through the Cross-ministerial R&D Management System (e-Rad) (Please refer to “4.6 Application Method”). As the application deadline approaches, heavy demands on the e-Rad system could slow the application process and even cause the application deadline to be missed. Please give yourself enough time to complete application of proposal. A withdrawal of an application through e-Rad after the deadline cannot be processed. JST will not accept proposals for which the application process has not been completed in e-Rad by the deadline for any reason.

The name and affiliation of the Proposer in e-Rad should match that provided in the research proposal. The application of a research proposal uploaded to e-Rad will not be accepted if it contains defects. A defect making the review of the proposal difficult refers to omission of proposal application forms, serious character corruptions that make it difficult to read, and omissions of important items on the application forms.

Furthermore, JST is not responsible for any defects in a research proposal that may occur before the submission deadline, regardless of whether the proposal was received or not. As such, all research proposal Proposers must understand that JST will not require or request the Proposer to make any revisions to their research proposals before the research proposal submission deadline.

Research proposal Acceptance begins	April 5, 2021 (Mon.)
Briefings of Solicitation	Online Implementation Details will be posted on the proposal application website as soon as decided. (https://www.jst.go.jp/ristex/proposal/)
Application deadline *1	Noon (12:00 p.m.) on June 8, 2021 (Tue.) (No delays accepted)

Document screening period	June to July (planned)
Notification of document screening results	Notice will be provided at least one week prior to interview screening
Interview screening*2	Scenario creation phase: August 27, 2021 (Fri.) Solution creation phase: August 24, 2021 (Tue.)
Candidate Interview with the Program Director	September 6 (Mon.) and 7 (Tue.), 2021
Notification and announcement of selection results	September 2021 (planned)
Start of research and development	October 2021 (planned)

*1 Deadline for submitting applications through the Cross-ministerial R&D Management System (e-Rad).

*2 Interview selection may be held online using Zoom, etc. When conducting using an online format, please cooperate for the advance connection test.

4.2 Research and Development Period

Scenario creation phase: In principle, 2 years or less

Solution creation phase: In principle, 3 years or less

This will be adjusted in accordance with the content and plan of the R&D proposals and the selection policy.

4.3 Research and Development Budget (Direct Costs)

One issue (project)

Scenario creation phase: Maximum of approx. 6 million yen per year (12 months)

Solution creation phase: Maximum of approx. 23 million yen per year (12 months)

a. However, we assume R&D will start in October for FY2021. Therefore, please include expenses for six months until the end of the fiscal year in your calculations.
b. Please refer to “5.5. Research and Development Budget” and “8. Q&A on Call for Proposals” for the use of the R&D budget (direct costs) and indirect costs.

c. The JST will not directly hire those who engage in R&D – including the Principal Investigator.

As per the Collaborative Research Agreement, JST will pay the institution implementing the project for all research and development budget (direct costs) and indirect costs (in principle, 30% of direct costs). This will be paid as consigned research funds.

We may make adjustments according to management (e.g., grasping the project's progress situation) by the Program Supervisor, Assistant Program Supervisor and Program Advisor when determining the R&D fund to be allocated after adoption. For details, please refer to "5.5 Research and Development Budget.

4.4 Number of Projects to be Selected

Scenario creation phase: Approximately 4 projects

Solution creation phase: Approximately 4 projects

The number of projects selected will be adjusted based on the content of the proposals received and other circumstances.

4.5 Requirements for Application

Principal Investigators must have completed the educational program on research integrity at the time of proposal application!

Note that if completion of the program cannot be confirmed, the application will be disqualified for failing to meet the requirements. At the time of proposal application, it is acceptable if the Principal Investigator only completed the program. For details, please read "6.1 Enrolling in and Completing the Educational Program on Research Integrity" and "Chapter 8 Q&A on Call for Proposals."

Research project Proposers, who will serve as Research Director, will submit the proposal themselves. Requirements for proposal application are presented below. Please ensure you understand these requirements for your application.

*In principle, if the determination is made that an application does not meet the

requirements by the time of selection, the research proposal will either not be accepted or not be selected.

*If an application is selected, the application requirements must be maintained for the entire duration of the period of R&D Project. If the R&D Project fails to meet the requirements during the research period, the research project will in principle be completely or partially suspended (i.e. be terminated early).

In addition, proposals must be submitted after understanding the matters herein as well as “Chapter 6 Key Points in Submitting Proposals.”

4.5.1 Multiple Applications

(1) One person may only submit one proposal as Principal Investigator for one project only for one phase or the other.

(2) You cannot apply to this program at the same time as applying to the calls in FY2021 for proposals in the Science of Science, Technology and Innovation Policy R&D Program, the Comprehensive Practical R&D Program for Ethical, Legal and Social Implications (ELSI) in Science and Technology or the technologies for society R&D program focusing on the prevention of social isolation we will launch in FY2021.

(3) Currently, Principal Investigators of the Research Institute of Science and Technology for Society cannot submit proposals (excluding cases where the research and development implementation period ends during fiscal year 2021).

*Multiple Applications are not permitted for other Strategic Basic Research Programs (CREST, PRESTO, and ACT-X).

4.5.2 Requirements for Proposers

Please make your proposal jointly signed by the following two people.

Person in charge of R&D (Principal Investigator)

Representatives of parties working on social issues (Collaborator)

The Principal Investigator and Collaborator will play a central role in promoting the project.

The Principal Investigator will be the person in charge of the project overall. We require this person to be someone who can take responsibility for all the R&D and promote it as the person in charge of R&D.

The person who will be the Principal Investigator should please make the proposal using the Cross-ministerial R&D Management System (e-Rad). The Principal Investigator can apply once for either the scenario creation phase or the solution creation phase.

The JST will support the organization conducting the R&D by paying the expenses necessary in the R&D (R&D fund). When applying, the Principal Investigator should please obtain the consent of the head of the organization that will conduct the R&D or the organ to which the organization that will conduct the R&D belongs.

We ask that the Principal Investigator composes a structure with researchers in the natural sciences and humanities/social sciences looking to solve specific social issues and the Collaborators who will be the recipients of the solution created.

The purpose of the R&D on technologies for society is to produce innovation to solve social issues. This program targets specific regions. Therefore, the cooperation of people in the region is essential in this program. To that end, agreements must be reached on what is the purpose of the proposal, who will be the beneficiaries of the solution, how the purpose of the proposal will be achieved and what effect it will have and by when.

Accordingly, we assume that a collaborative process to form these agreements already exists. The R&D is not an activity to be conducted solely by a group of experts in a specific area like a university or research institution. Instead, you must proceed with the project while obtaining the cooperation of a diverse range of people including researchers in other fields, those who are familiar with the actual setting, the beneficiaries and government officials. You will need the flexibility and organizational structure to accept those people according to the requirements of the moment. You will need to add collaborating persons as members from the start of the R&D.

The Collaborator will be the representative of parties working on social issues. The Collaborator will represent the group or organization which directly faces those social issues and which wishes to solve them in collaboration with researchers. However, we assume that the group or organization will be substantially represented and will actually

tackle the social issues. This means that the Collaborator does not need to be a representative as a job title.

In principle, the JST will enter into the Collaborative Research Agreement with the research institution to which the Principal Investigator and Lead Implementer (Collaborator or another research group leader) belong. If the institution to which the Lead Implementer belongs does not require the consigned R&D fund from the JST, it will also be possible to participate in the project by appropriately entering into an agreement with the institution to which the Principal Investigator belongs. This does not prevent the work of the Principal Investigator and Collaborator from being undertaken by one person at the same time. However, it is very important that person can sufficiently execute the roles of both people with different personalities. Please also refer to "8. Q&A on Call for Proposals."

In addition, it is necessary for either the Principal Investigator or Collaborator at least to belong to a university etc.*

*University etc. is the general term for the research institutions given below:

i) Incorporated educational institution (e.g., national university, public university or private university)

ii) Public research institution (e.g., national public research institution, public testing and research institution or independent administrative corporation)
*This includes the National Technical College

iii) An institution with a public character (e.g., public-service corporation) and which is approved by the JST

Other requirements for proposers are presented below.

a. The Proposer must be able to head up the R&D project members and exhibit leadership in implementing the project in order to realize the concept.

b. The Proposer who will serve as Principal Investigator must belong to a domestic Japanese research institute and be able to organize and implement research and development at that institution.

Furthermore, persons who correspond to the following can also apply as proposers.

・Researchers who have foreign citizenship, but who are affiliated with a domestic Japanese research institution.

・Researchers who are not currently affiliated with a research institution, or are affiliated with an overseas research institution, and, if selected as a Principal Investigator, must be able to organize and pursue project as a researcher affiliated with a domestic Japanese research institution.

・A Japanese national who currently resides overseas, and, if selected as Principal Investigator, must be able to organize and pursue project as a researcher affiliated with a domestic Japanese research institution.

*Domestic Japanese research institution indicates universities incorporated in Japan, national research and development corporations, specified non-profit corporations, companies, and local governments. However, the prescribed conditions must be satisfied. For more details, please refer to "5.9 Responsibilities of Research Institutions, etc."

*This also covers those affiliated with private sector companies and other non-university research institutions.

*Must not be in breach of restrictions of application requirements related to improper accounting practices and misconduct in research.

c. Able to assume responsibility for the entire project as the Principal Investigator throughout the entire period of the project. For details, please refer to "5.8 Responsibilities of Principal Investigator and Lead Implementers, etc." For example, during the project period, the Principal Investigator must reside in Japan and the Principal Investigator must be able to fulfill his/her responsibilities for a long period of time without interruptions, such as overseas business travel and other reasons.

d. Have already completed the educational program for research integrity at his/her affiliated research institution or will complete the JST- designated educational program by the application deadline. For details, refer to "6.1 Enrolling in and Completing the Educational Program on Research Integrity". For details, please refer to "6.1 Enrolling in and Completing the Educational Program on Research Integrity."

e. The Proposer must make the following four pledges upon application of his/her proposal.

・Understand and comply with “Guidelines for Responding to Misconduct in Research” (decided by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014).
・Understand and comply with “Guidelines on Management and Audit of the Public Research Expenses in Research Institutions (Implementation standards)” (revised February 18, 2014).
・If the research proposal is accepted, the Individual Researcher must not engage in misconduct in their research (fabrication, manipulation, and plagiarism) nor in inappropriate usage of research funds.
・The Proposer must not have engaged in misconduct in the past to achieve the research results that are mentioned in the submitted research proposal.
*The above verification will be part of the e-Rad Application Information Entry screen.

4.5.3 Requirements for research organization

Only Japanese research institutions can promote R&D in this program (can enter into the Collaborative Research Agreement). However, it does not matter is this entity is a private company, one of various organizations, an NPO, a university, a research institution or otherwise. Please also refer to “5.10 When a Person Belonging to an Overseas Institution Participates as the Lead Implementer.”

Research Institutions must fully understand that the research funds are public funding, ensure compliance with related laws, and make efforts to implement the research effectively. Any research organization that cannot perform the responsibilities described in “5.9 Responsibilities of Research Institutions, etc.” will not be approved to conduct research. Therefore, be sure to obtain prior approval from the Research Institution at which you plan to conduct your R&D before your application.

We may investigate and confirm the administrative management structure and financial status of each research institution prior to the adoption of the project, before entering into the Collaborative Research Agreement and during the period of the agreement. Institutions deemed to need appropriate execution and management of the consigned research fund as

a result may be subject to a reduction in the R&D fund, a research suspension, a shortening of the agreement period, cancelation of the agreement and other measures even if the agreement is withholden or it is during the agreement period. This is in addition to having to following the consignment method designated by the JST.

If it is not possible to enter into the agreement, it may not be possible for the said research institution to conduct the R&D. In that case, we may ask you to review the implementation structure.

It is not a problem if the organization that will conduct the R&D newly organizes for the proposal. However, at the time of selection, we will consider whether the organization will exist for the period necessary to solve social issues and whether it has the organizational structure to be able to continue operations even after the end of the project.

4.6 Application Method

Applications will be submitted using the Cross-ministerial R&D Management System (e-Rad).

Please note that applications using paper media (postal email, express parcel delivery, hand delivery, etc.) or made by email will not be accepted.

For details, please refer to “Chapter 7 Application Method by Cross-ministerial R&D Management System (e-Rad).”

(1) Registration of research institution and Principal Investigator

An e-Rad log-in ID and password must be issued for the Proposer (Principal Investigator only).

When an e-Rad log-in ID and password are newly issued, the institution the Proposer is affiliated with must carry out the following registration in advance.

① If unregistered, the institution must first register as a “research institution”

② The Proposer must be registered in “Researcher Information”

Furthermore, if the Proposer is not affiliated with a specific domestic Japanese research institution at the time of application, the Proposer him/herself must register under 2. above only (however, it is assumed the person plans to be affiliated with a domestic Japanese research institution post selection).

For details about registration method, please refer to the e-Rad portal site.

Please complete registration procedures at least two weeks prior the deadline because the registration process may take several days to complete.

Furthermore, once registration is complete, the Proposer does not need to register again when submitting applications for programs or projects implemented by other ministries and agencies. In addition, if registration has been completed for programs or projects implemented by other ministries and agencies, the Proposer does not need to register again. Institutions and Proposers who have never submitted a proposal for competitive funds or received such funds (specified non-profit corporation, administrative institutions, institutions of private sector companies and affiliated individuals) should pay particular attention.

(2) Preparation and submission of proposal

The Proposer should please personally prepare the proposal document and then apply to this program. Please download the proposal document format from the e-Rad portal site (https://www.e-rad.go.jp/) or this program's proposal application website (https://www.jst.go.jp/ristex/proposal/) and complete the proposal document based on the explanation found in "Chapter 9 Completing the Proposal."

Please be sure to complete the proposal using objective statements wherever possible using language that is simple and not overly specialized.

Please submit the proposal document via the e-Rad site.

The proposal document's format and where to submit it differ depending on what phase you are applying for (the scenario creation phase or the solution creation phase). Please pay particular attention to this.

4.7 Selection Method

4.7.1 Selection Process

Selection will be determined comprehensively based upon “4.8 Main Perspectives for Selection” following a review of proposal documents and interview of Proposers that passed the document selection process.

(1) Principal Investigators eligible for the interview after the results of document selection will be notified in writing and informed regarding the guidelines for the interview, date and time, and additional documents to be submitted. During interview, both of Principal Investigator and Collaborator will be asked to explain the concept of his/her research and development project.

(2) The Principal Investigator will be notified of the results of document evaluation and interview regardless of if they are accepted or not.

(3) For the selection schedule, please refer to “4.1 Call Period and Selection Schedule.” Schedule details and changes will be made available as necessary on this program’s proposal application website.

(4) In addition to the above, please be sure to enter an e-mail address, phone number and address registered in e-Rad, and the contact information provided in application form 1, as JST may contact the applicant.

4.7.2 Selection System and Management of Conflicts of Interest

A Program Supervisor will make selection with the cooperation of the Assistant Program Supervisor and Program Advisor. Based on the results, JST will select Principal Investigator and projects to implement. In addition, JST may obtain the cooperation of outside reviewers as needed.

The following conflicts of interest will be managed according to JST’s regulations, from the perspectives of fair and transparent evaluations and allocation of research funding.

(1) Management of conflicts of interest of persons involving with selection

To ensure fair and transparent evaluations, the following persons or parties who have conflicts of interest may be excluded from the selection process. If you have any concern about conflicts of interest between you and persons and parties involved in the selection

process of your Research Proposal, please describe it specifically in the [Notice] section of the application forms 1.

a. Persons, who are relatives of research project Proposers:
b. Persons or parties who are affiliated with the same department or specialty at a research institution, such as university or national research and development corporation, or a company with which Proposers are affiliated.
c. Persons, who are conducting a close collaboration in a research work with Proposers. (Persons who are recognized as those practically affiliated with a research group with which Proposers are affiliated, such as those who are conducting a joint research project or have co-authored a paper with Proposers, a researcher pursuing the same research objectives as Proposers, or a researcher in the Proposer's project.)
d. Persons in a close teacher-student relationship, or in a direct employer-employee relationship
e. Persons in relationships of direct competition with Proposers
f. Persons in other relationships judged by JST to represent conflicts of interest with research project Proposers.

(2) Management of conflicts of interest of Principal Investigator

A conflict of interest could arise with Principal Investigator when a Principal Investigator appoints Lead Researchers from an institution that is related to the Principal Investigator and allocate research funds of JST to these institutes. Therefore, management for conflicts of interest between Principal Investigator and his/her related institution will be conducted in the light of necessity, rationality, and reasonableness of the relationship, in order to avoid any doubt of any third party.

"An organization that is related to the Principal Investigator" refers to any of the organizations that fall under the following categories. Items "a" and "b" are applicable not only to the Principal Investigators but also to the spouse and the relatives in the first degree of the Principal Investigator (hereinafter referred to collectively as "the Principal

Investigator etc.").

a. An organization established based on the R&D achievement of the Principal Investigator etc.

(Including the case in which the Principal Investigator etc. is not directly involved in the business management but is merely given a title such as technical consultant and the case in which the Principal Investigator etc. owns the organization's stock.)

b. An organization in which the Principal Investigator etc. is a director (including a CTO but excluding a technical consultant).

c. An organization in which the Principal Investigator owns its stock.

d. An organization in which the Principal Investigator is rewarded for implementation.

For a research proposal in which a researcher who belongs to the related organization of the Principal Investigator, is assigned as a Lead Implementer, it will be strictly judged from the viewpoint of requirement, rationality, and relevance.

Therefore, when a researcher who belongs to the related organization of the Principal Investigator is assigned as a Lead Implementer including Collaborator, the applicant must declare that a researcher who belongs to the related organization of the Principal Investigator is included as a Lead Implementer in the Notice section of the application.

Additional documents may be requested for the judgement on the conflicts of interest with the Principal Investigator.

(3) Management of conflicts of interest of JST

Adopting a company that JST has invested in (hereinafter "invested company") for this program and allocating research funds may be considered a conflict of interest with JST (conflict of interest as an organization). Therefore, to avoid any doubt of any third party, JST implements management of conflicts of interest between JST and the invested companies.

With respect to the proposals that assigns an invested company of JST as a research institution, JST will assess the necessity, rationality, and adequacy of the applicable invested company.

For that purpose, if the institution is an invested company of JST, the application must

complete the Notice section of the application forms 1 to declare that an invested company is included in research institutions.

Furthermore, this management is implemented to guarantee the fairness and transparency of the process on the side of JST. It is not disadvantageous to have accepted funds from JST in the process of the adoption in this program. Applicants are asked to be cooperative in JST's management of conflicts of interest.

*Refer to the following website for invested companies of JST. Furthermore, companies for which investment has been completed are not subject to management of conflicts of interests; thus, reporting is not required.

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

*The declaration base date is the date the call for proposals of this program begins. Please declare companies that have disclosed an investment from JST as of this date. There is no need to report companies for which an investment has not been disclosed even if an unofficial decision has been made because it is a confidential matter internally for JST.

Please refer to the following website for JST’s disclosure of investments.

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

4.8 Main Perspectives for Selection

The selection process will decide on which proposals to adopt following a comprehensive review of social impacts while emphasizing the following points (Refer to “Chapter 2 Philosophy on Program Administration for the Call and Section” and “Chapter 3 Summary of Research and Development Program”). (Please also refer to “8. Q&A on Call for Proposals” when preparing the proposal document (preparation of the proposal document in line with the intent of this program).

<Points Common to the Scenario Creation Phase and Solution Creation Phase>

(1) The proposed content (e.g., issues, goals and R&D plan) should agree with the intent of this program. The specific social issues to be solved and vision to be

realized by 2030 (a sustainable society) should be clarified.

(2) The relationship with the 17 goals and 169 targets of the SDGs should be organized.

(3) The proposal should be an inclusive initiative in line with the SDG's philosophy of leave no one behind.

(4) KPIs (easy-to-understand indicators to measure the effect) should be established and shard and PDCA should be taken into consideration with the participation of each stakeholder.

(5) A plan should be proposed in which stakeholders, including beneficiaries, participate when tackling the social issues. A co-creative collaborative structure (including collaboration between the Principal Investigator and the Collaborator) should be built.

(6) The region which will be the field of the R&D should be clear. The past collaborative relationship between the Principal Investigator and the Collaborator and the current status of each stakeholder involved in the project should be accurately analyzed.

(7) The Principal Investigator and the Collaborator should have sufficient experience, clear motivation and enthusiasm to promote the proposed R&D. They should be able to execute the R&D with responsibility as the governing entity in the co-creative activities.

(8) An appropriate financing plan should be taken into consideration as use of the R&D fund.

(9) The specific efforts of the coordinator, which will be the driving force of the project, should be planned.

(10) There should be an R&D plan and structure in which the person responsible for the results (e.g., a representative of parties working on social issues) continues to tackle the social issues even after the end of the project.

<Scenario creation phase>

(1) The vision for achieving the SDGs and the importance of co-creation to achieve that vision should be recognized and shared among stakeholders.

(2) The applicable social issues and the status of their examination should be indicated.

(3) The network building and activity status through stakeholders engaging in dialogue and collaboration should be indicated.

(4) There should be specific and effective proposals with regards to the technology seeds to solve the social issues and ideas for the approaches and techniques to solve them.

(5) The feasibility test implementation plan should be specific.

(6) An R&D plan should be formulated that considers the specific milestones for the creation of the scenario and the creation of the solution beyond that.

<Solution creation phase>

(1) The vision to be realized by 2030, the value to be created by the realization of that and the scenario for that should be clear. The path to solving social issues with the solution should be logical and realistic.

(2) The technology seeds (science and technology results) to be utilized should be appropriate as specific means to solve the issues and should be in the stage at which it is possible to conduct a demonstration experiment during the period.

(3) The demonstration experiment plan should be specific (e.g., size, participants, and location).

(4) The coordinator, the person responsible for establishing the solution strategy and the person responsible for deploying it to other regions should be clarified in the (Proposal Document Form 6) business concept (scenario). They should be appropriate for the scenarios to establish the R&D plan and solution and to realize deployment to other regions.

(5) A R&D plan should be formulated that considers risk avoidance and milestones to create the solution.

(6) The people who will benefit as the targets of the solution should be identified. The effect of that solution should be clear. At the same time, the potential to deploy it to other regions should be indicated specifically.

We will consider the following points as additional factors when proposals are evaluated equally in the document screening and interview screening processes. Please check "(Cooperation with Overseas Institutions)" in "8. Q&A on Call for Proposals" for the description of cooperation with overseas institutions. If applicable, please describe young and female researchers in the prescribed section on Form 1.

- It should be possible to expect an international expansion in activities through cooperation with overseas institutions in regard to the results of the project.
- Young and female researchers and implementers should be proactively hired from the point of view of promoting diversity and training personnel. Furthermore, it should be possible to expect that they will play a major role in the planning and operation of the project.

4.9 Transitioning to the R&D Phase in the Selection Process

If a proposal among the applications for the solution creation phase has generally excellent content but we deem it to be lacking in terms of the analysis of the social issues, the construction of a specific structure to demonstrate the solution and the progress of the R&D, we may select it as an R&D project in the scenario creation phase.

If you agree to transition to be selected in the scenario creation phase in the selection process with an issue you applied for to the solution creation phase, please check the prescribed points when recording the application information on Proposal Form 1 and e-Rad. Please note that we will ask you to submit additional materials in the selection process when transitioning between phases.

4.10 Other Considerations

*Proposal documents with defects may not be reviewed by JST.

*Whether the research and development budget correspond to unreasonable duplication and excessive concentration is an element of the selection. For details, please refer to "6.2 Measures against Unreasonable Duplication and Excessive Concentration."

Inquiries and Other Matters

(1) Posting of Application Guidelines and where to submit the proposal

Application Guidelines and latest information	Proposal application website for Co-creative R&D program for achieving SDGs (Scenario creation phase, Solution creation phase) https://www.jst.go.jp/ristex/proposal/ https://www.jst.go.jp/ristex/solve/index.html
Application Guidelines and submission of proposals	Cross-ministerial R&D Management System (e-Rad) website https://www.e-rad.go.jp/

(2) Inquiries

Questions concerning the Call Programs, and procedures for preparation of application documents and submission, etc.	JST Research Institute of Science and Technology for Society (RISTEX) (person in charge of calls for proposals) JST “Science and Society” Promotion Dept. (person in charge of calls for proposals) **please send inquiries by e-mail.** E-mail: boshusolve@jst.go.jp (Office hours: 10:00 -12:00, 13:00 - 17:00 / Except on Saturdays, Sundays, and holidays)
Questions concerning the Cross-ministerial R&D Management System (e-Rad) Registration of research institution or researcher, or how to operate e-Rad, etc.	e-Rad helpdesk Tel: 0570-066-877 (navi dial) (9:00-18:00/Except on Saturdays, Sundays, holidays, and the year-end and new year period)

*JST will not answer any questions regarding the status of review or acceptance.

*JST and the e-Rad helpdesk will be extremely busy before the application submission deadline (proposal deadline). Be sure to make inquiries with adequate time until submission.

Chapter 5 Promotion of R&D in Science and Technology for Society

5.1 Implementation Plan

a. Once a proposal has been selected, the Principal Investigator must prepare an overall R&D plan covering the entire period of the R&D project. The Principal Investigator must also prepare annual R&D plans for each year of the project. R&D plans should contain both budgets and the composition of R&D teams. Proposed R&D budgets are examined during the selection process. Actual research and development budgets will be confirmed by the Program Supervisor when R&D plans are formulated before going through an approval process.

b. R&D plans (overall R&D plans and yearly R&D plans) will be confirmed by the Program Supervisor before going through an approval process. Based upon advice from the Assistant Program Supervisor and Program Advisor, the Program Supervisor is to exchange opinions with the Principal Investigator, maintain an awareness of the day-to-day progress of the project, perform site visits, provide advice and coordination for the R&D plan, and provide guidance to the Principal Investigator as required.

c. The Program Supervisor may, as necessary to achieve the overall aims of this program, make adjustments between separate projects when determining project plans.

d. The period of the project may be shortened and the R&D budget may be reduced or canceled at the discretion of the Program Supervisor.

* R&D team compositions and budgets set forth in R&D plans may be revised during the research project period in response to the overall R&D program budget conditions and management actions taken by the Program Supervisor.

5.2 Implementation Team Composition

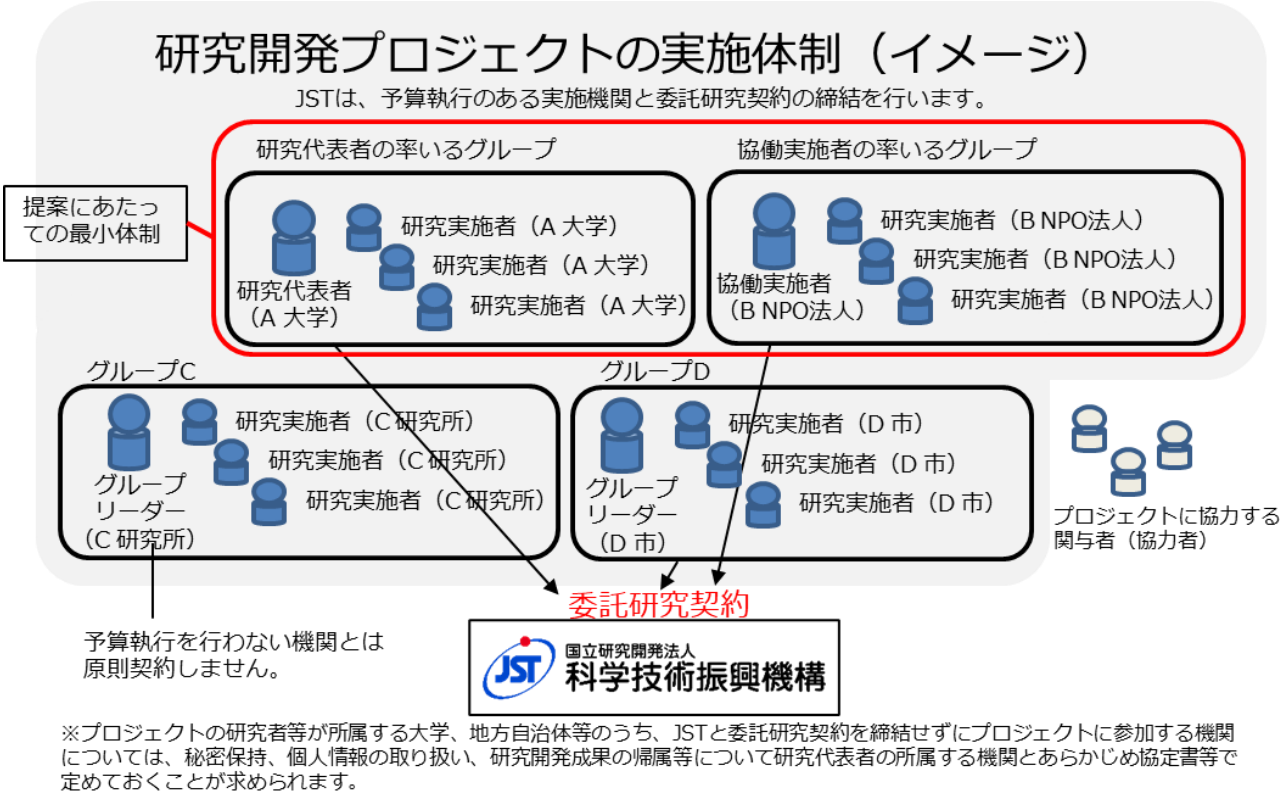
a. The Principal Investigator will lead R&D activities. In order to realize research initiatives, the Principal Investigator may have individuals engaged in problem resolution participate as project members (maximum of 20 individuals) in order to construct an ideal organization (group) for the project's implementation. The project members may

also consist of individuals from institutions other than the Principal Investigator's affiliated institution.

b. When constructing implementation teams, clarity is to be provided regarding each group's roles and the content of the R&D to be performed before commencing with the project.

c. JST will enter into a Collaborative Research Agreement with the institution that the executor of the budget (Principal Investigator or lead implementer) is affiliated with.

d. As required for R&D progress, new project members (or other assistants, etc.) may be employed to participate in the project within the scope of the R&D budget.



5.3 Place of Implementation

In principle, the R&D will be implemented at the research institution that the implementers are affiliated with.

5.4 Collaborative Research Agreement

a. After approval, JST will enter into a Collaborative Research Agreement with the research

institution that those leading the research are affiliated with.

b. If it is not possible to enter into a Collaborative Research Agreement with the research institution or create the management and audit systems required in connection with the use of public funds, or if the institution is conspicuously financially unstable, it may not be possible to pursue R&D at the research institution in question. For more details, please refer to "5.9 Responsibilities of Research Institutions, etc."

c. In principle, patents and other intellectual property rights resulting from research shall, in accordance with the terms of the Collaborative Research Agreement, reside with the affiliated research institution under the condition that the institution abides by the items provided in Article 17 (Japanese version of the Bayh-Dole Act) of the Industrial Technology Enhancement Act. However, this rule does not apply to foreign research institutions.

(Supplement) Differences Between Collaboration and Subsidization

This project is a collaboration between JST and the institutions it has entered into Collaborative Research Agreements with. A collaboration involves entering into an agreement with a university, private firm, or other third-party to perform research that would initially have been conducted by the Japanese government, etc. (in this case JST) but has been contracted to this third-party due to the belief that it will lead to more beneficial results. In this situation, the institution consigned to do the project has an obligation to appropriately perform all consigned duties in line with the Collaborative Research Agreement and administrative manuals, and the consignee will confirm this.

By comparison, subsidization refers to having the government, etc., cover a portion of expenses incurred by projects being performed by universities, private firms, or another third party, that are recognized to have some benefits to the public at large. In this situation, the party that is issued the subsidy implements the project independently.

5.5 R&D Budget

As per the Collaborative Research Agreement, JST will pay the institution implementing the project for all research and development budget (direct costs) and indirect costs (in principle, 30% of direct costs). This will be paid as consigned research funds.

5.5.1 Research and Development Budget (Direct Cost)

The R&D budget (direct costs) relates to R&D directly required to implement the project. These costs include:

a. Commodities: Cost of purchasing new facilities*, equipment, consumable supplies, etc.

b. Travel Expenses: Expenses for travel by the Principal Investigator, Collaborator, lead implementer, and other implementers listed on the research plan created after approval. Expenses covered include all direct costs for travel, as well as all invitations for travel, etc. directly related to pursuing the R&D in question.

c. Personnel Expenses and Honoraria: [Personnel Expenses] Salaries*2 and honorariums for all researchers, technicians, research assistants, etc., directly required to implement the research in question (however, Collaborator and lead implementer are excluded), [Honoraria] Honorariums for speakers at lectures, etc.

d. Other Expenses: Costs for presenting research results (research paper submission fees, etc.), costs for leasing and transferring equipment, etc.

*The purchase of new research equipment and apparatuses shall proceed according to "Research Equipment and Apparatus Sharing Systems for Research Organization Units" (hereinafter referred to as "apparatus sharing systems"), which shall operate on the premise of "Introduction of New Research Equipment and Apparatuses Operating Integrally with Research Organization Management" (Advanced Research Fundamentals Working Group, Scholarship Commission, November 2015). Please refer to "6.12 Promotion on Effective Use of Research Facilities and Equipment".

*2: In principle, JST can pay expenses (buyout expenses) relating to the execution of non "PI personnel expense and" research operations by others on behalf of your team only if certain requirements are met by the person who will be the Principal Investigator (PI) in the project with the JST Competitive Research Fund System for universities etc.

○"Review to Enable Payment of Expenses for Others to Execute Non-research Operations from Direct Costs (Buyout System Introduction) and Payment of the Personnel Expenses of the Principal Investigator (PI) from Direct Costs (Contact)"

(September 17, 2020)
https://www.jst.go.jp/osirase/2020/pdf/20200917.pdf

Note: Examples of expenses that cannot be paid as the research budget (direct costs):

- Expenses that do not align with the research purpose
- Expenses for which the payment of indirect expenses is considered appropriate
- Expenses for which use in the settlement of the consigned research fund is judged to not be appropriate by the JST (*2)

*2 JST has established rules and guidelines specific to this project for some items, based on the Collaborative Research Agreement, administrative manuals, and the cross-ministerial expenses handling table, etc. Handling may differ between universities, etc. (universities, public research institutions, public interest corporations, etc. accepted by JST) and companies, etc. (mainly research institutions other than universities, etc., such as private enterprises). For more details, refer to the JST official administrative manuals at the URL below.

JST Collaborative Research Agreement Administrative Manuals
https://www.jst.go.jp/contract/index2.html

Ministry of Education, Culture, Sports, Science and Technology: Handling Table for Cross-Ministerial Expenses
http://www.mext.go.jp/a_menu/shinkou/hojyo/1311601.htm

5.5.2 Indirect costs

Overhead (indirect) costs are costs required for the management, etc. of research institutions pursuing R&D; they are, in principle, capped at 30% of direct costs. According to “Common Guidance for the Execution of Indirect Expenses of the Competitive Fund” (agreed upon by the coordination committees of relevant ministries and agencies on April 20, 2001, and amended on July 18, 2019), a research institution shall create a policy on use, etc. and shall systematically and properly execute the policy to ensure that use of indirect costs is transparent.

5.5.3 Multiple-year Contracts and Carryover

JST allows for multiple-year contracts, as well as for consigned research funds and

procurement contracts to be carried over into subsequent fiscal years. This is from the perspective of ensuring research expenses are used effectively and efficiently to maximize research results and to prevent unauthorized use. However, different conditions apply for universities and businesses when performing carryovers (there may be cases where concluding a multi-year contract and carrying over research expenses are impossible at some institutions due to incompatible administration systems). FY2021 is the final year of the JST's mid-term plan. Therefore, in principle, the carry-over of the consigned research fund will not be permitted.

5.6 Reports

The fiscal year and final reports form the basis of the reports to be made in writing. However, we may ask for separate reports as necessary. In addition, please note that the annual report also affects approval of the plan in the next fiscal year.

Moreover, depending on the progress of the project, if, for example it becomes difficult to continue R&D or if it becomes possible to execute the business plan at an earlier stage than the initial R&D plan so support from the JST is no longer necessary, we may ask you to revise your R&D plan or to change your R&D period (including the discontinuation of R&D) through management by the Program Supervisor, Assistant Program Supervisor and Program Advisor.

We also place importance on reports and public relations in a form that is open widely to diverse stakeholders in addition to those for the Program Supervisor, Assistant Program Supervisor, Program Advisor and the Secretariat in regard to project progress reports. Please consider building a structure in which it is possible to disseminate information in a timely manner using booklets and social networking sites.

5.7 Evaluation

(1) Evaluation of the Program

・This program will be evaluated after a certain period of time has passed (interim, or post).

(2) Evaluation of Projects, etc.

A Program Supervisor will make selection of proposals with the cooperation of the Assistant

Program Supervisor and Program Advisor.

- For all projects, a post-evaluation will be conducted by the Program Supervisor in cooperation with the Assistant Program Supervisor and Program Advisor and others when the research and development has been completed.
- If further improvement in the validity and feasibility of the scenario can be expected in the scenario creation phase, we may extend the R&D period by up to one year with an interim evaluation. If a further improvement in the establishment of the solution technique or the potential for deployment can be expected in the solution creation phase, we may extend the R&D period by up to two years with an interim evaluation.
- A follow-up survey will be conducted after a certain period of time following the completion of the research and development.

5.8 Responsibilities of Principal Investigator and Lead Implementers, etc.

(1) The Principal Investigator and lead implementers are obliged to conduct their research, honestly and effectively, fully understanding that their research is funded by tax revenues collected from citizens.

(2) After their projects are approved, these individuals must agree to fulfill the following duties presented to them at JST briefings, etc., and submit a written agreement to JST.

a. Comply with requirements for application guidelines and regulations of affiliated institutions.

b. Understand that JST R&D budgets are funded by tax revenues. For this reason, they must avoid any research misconduct, including fabrication, falsification, and plagiarism, and/or the improper use of R&D funds.

c. Ensure that all implementers and other individuals participating in the R&D project are fully informed of the JST designated Educational Program on Research Integrity (eAPRIN (previously CITI Japan) e-learning program) and have enrolled in and completed the program. For details, refer to “6.1 Enrolling in and Completing the Educational Program on Research Integrity”. For details, please refer to “6.1 Enrolling in and Completing the Educational Program on Research Integrity.”

Note that failure to complete the Educational Program on Research Integrity in c. will result in the suspension of the R&D budget until it has been completed, and this has

been confirmed by JST.

(3) The Principal Investigator and implementers must complete the JST designated Educational Program on Research Integrity (eAPRIN (previously CITI Japan) e-learning program).

(4) Project promotion and management

These individuals are also entirely responsible for project progress and management. These responsibilities include providing necessary progress management, as well as the results of the project. After clarifying the roles and responsibilities within the project, the Principal Investigator and lead implementers will play a leading role in steadily promoting the project and coordinating unified results. These individuals will need to submit required plans and reports, etc. to JST (including the Program Supervisor), conduct project strategy meetings or site visits to confirm the strategy and progress of the project, and respond to evaluations, etc. The Principal Investigator and lead implementers will also need to submit reports on the progress of the R&D when requested by the Program Supervisor.

(5) R&D budget management

The Principal Investigator is responsible for managing R&D costs for the entirety of the project (spending plans and progress, etc.) together with the research institution implementing the project. In the same manner, the lead implementers are also responsible for managing the R&D budget for their groups along with the institution implementing the project.

(6) Considerations regarding implementers hired as part of the project

Please ensure that necessary consideration is given to the working conditions for implementers recruited to participate in the project, especially those employed using the R&D budget. Factors should include the R&D environment, working environment, and conditions of work.

(7) Participation in program activities

Active involvement in JST-sponsored program activities designed to meet the goals of the program (events including training camps and symposiums) and cross-project initiatives is required.

(8) Outreach activities for R&D results

Since R&D activities are funded by the government, active disclosure of R&D results is expected both within Japan and overseas, taking into account the acquisition of intellectual property rights. If the results obtained are to be published in newspapers or magazines, or in a thesis, etc., details about the implementation of the project, as well as a statement stating that they are the results of the Strategic Basic Research Programs (Research Institute of Science and Technology for Society) must be provided. Participation in and presentations of findings at workshops and symposiums hosted or backed by JST in Japan and around the world is also required.

Participation in RISTEX's 'Human Network for Collaboration Between Researchers and Collaborators to Solve Social Problems' is required, along with cooperation relating to disseminating and sharing information, as well as planning and holding workshops and symposiums, etc.

(9) All matters related to the project must be performed in-line with the contract between JST and the research institution, along with JST's rules and regulations.

(10) Cooperation with project evaluations, JST accounting audits, and national audits is also required.

(11) Information must be provided, and interviews conducted that allow for the assessment of programs (both interim and post-evaluation) and follow-up investigations conducted after a certain period of time has elapsed since the completion of the project.

5.9 Responsibilities of Research Institutions, etc.

Research institutions must fully recognize that consigned research funds are paid using public money. They must ensure compliance with related laws and make efforts to implement research effectively. Research institutions that cannot perform their responsibilities, as described below, will not be permitted to conduct R&D. Researchers are therefore requested to obtain consent from all research institutions where their R&D is going to be implemented before applying.

a. Research institutions are obliged to enter into a Collaborative Research Agreement with content provided by JST. They are also required to properly implement their R&D in accordance with the Collaborative Research Agreement, administrative

manuals, and R&D plan. The research institution shall not be permitted to perform R&D if it cannot enter into a Collaborative Research Agreement with JST, or it is determined that it cannot suitably perform the R&D in question.

※ A model of the Collaborative Research Agreement can be found at the following URL:

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

b. Research institutions are responsible for creating a framework to manage and audit public research funds. They are also obligated to properly execute their consigned research funds in accordance with 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 18, 2014). In addition to reporting the status of their management and audit system for public research budgets to the Ministry of Education, Culture, Sports, Science and Technology, research institutions are also obliged to cooperate with any investigations into the implementation of their system. (See: 6.19 Consideration on “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.htm

c. In accordance with the “Guidelines for Responding to Misconduct in Research” (adopted by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014), research institutions are responsible for implementing regulations and systems required to prevent misconduct. Research institutions are also responsible for cooperating with any investigations relating to these systems based on these guidelines. (See: 6. “Guidelines for Responding to Misconduct in Research”)

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

d. Research institutions are responsible for ensuring that those participating in R&D are aware of the content of the guidelines described in b. and c. and are provided with training based upon educational materials related to research integrity provided by JST.

e. Research institutions shall manage spending/management of R&D budgets properly in accordance with the regulations of the research institution while still maintaining

reasonable flexibility. Institutions must also follow any special expenditure rules for the project defined in administrative manuals, etc., provided by JST. (Research institutions receiving Grants-in-Aid for Scientific Research may deal with consigned research funds for which there are no definitions in the administrative manuals, based upon the Grants-in-Aid guidelines for the institution in question.)

f. Research institutions must enter into contracts with researchers who will be implementing R&D and will be inventors of intellectual property relating to the R&D. This is to ensure the properties are transferred from these researchers to the institutions. In particular, appropriate action must be taken when an individual who is not subject to the Research institution's regulations regarding inventions (such as a student who is not an employee of the institution) participates in the R&D. This could include entering into a contract with the student in advance to ensure that intellectual property rights pertaining to inventions (including their conception) produced by the student during the R&D belong to the research institution (except in cases where it is clear that the student cannot become the inventor). Conditions of compensation for the transfer of intellectual property rights should not be unfavorable to the student who made the invention.

   In principle, the prior approval of JST is required to transfer or provide exclusive licenses to use intellectual property to other persons or parties, etc. A prior report to JST is also needed when applying for, registering, implementing, or renouncing property rights.

   JST must be notified of intellectual property produced by research institutions through the contract for R&D with JST. Any required applications must also be made, as per Article 17 of the Industrial Technology Enhancement Act. This applies even after the contracted R&D period ends.

g. Research institutions are responsible for cooperating with accounting investigations performed by JST and with government accounting audits.

h. Research institutions are obliged to obey measures pertaining to changes to methods of payment of consigned research funds as well as decreases to R&D budgets decided by JST, based on JST's investigations of their administrative management systems, financial conditions, etc.

In addition, if project evaluations performed at the end of the JST's mid- to long-term target period requires that JST be dissolved or reduced in size, or if changes to the government's budgetary measures are made, as per the special terms in the Collaborative Research Agreement, the contract may be canceled, or reductions in consigned research funds may be made. Based on the results of the mid-term evaluations of the project, measures such as increases or decreases to consigned research fund payments, changes to the contract period, cancellation of research, etc., may be made. If JST judges that the continuation of research is not appropriate, JST may take measures such as canceling the contract, regardless of any remaining time left in the contract itself. Research institutions are required to follow these measures.

i. If the research entering into the Collaborative Research Agreement is a national or municipal organization, the institution itself is responsible for ensuring that necessary budgetary measures are put in place prior to the start of the Collaborative Research Agreement period. (If it becomes clear that these required procedures were not performed after the agreement is entered into, the Collaborative Research Agreement may be canceled, with any consigned research funds to be repaid.)

j. As a part of efforts to prevent misconduct in R&D activities, JST requires researchers who will take part in newly approved research projects and are affiliated with the research institution, to enroll in and complete an educational program on research integrity (procedures required for enrollment will be handled by JST). Research institutions are responsible for ensuring that relevant individuals enroll in and complete the program.

If these individuals fail to complete the program as stipulated despite repeated reminders by JST, JST instructs to the research institution to halt, partially or entirely, the payment of consigned research funds. The institution is to stop all use of the R&D budget and must not recommence using them until further notice from JST is given.

k. Necessary measures are to be put in place regarding intellectual property, confidentiality, etc., such as joint research agreements, with research institutions participating in the project, to the extent that these do not infringe on the Collaborative Research Agreement with JST. This is to prevent impediments to the

appropriate implementation of R&D and the utilization of R&D results.

l. As consigned research funds are government resources, proper processes should be put in place to ensure they are used economically, efficiently, effectively, legitimately, and accurately, in a way that allows for accountability regarding this usage. Funds should be used in a planned manner. Procurement for the purpose of using any remaining budget at the end of the R&D period or at the end of the fiscal year is to be avoided.

5.10 When a Person Belonging to an Overseas Institution Participates as the Lead Implementer

Individuals belonging to overseas research institutions can participate in the project while being based at the overseas institution (however, the Principal Investigator is required to belong to a domestic research institution. Please refer to "4.5 Requirements for application" for more details) Research institutions that cannot perform their required responsibilities will not be permitted to conduct R&D. Researchers are therefore requested to obtain consent from the institutions where their R&D is going to be implemented before applying.

a. If the individual is deemed to be crucial for the Principal Investigator’s research initiative and it will be difficult (not possible to) implement the project without the overseas institution’s participation.

b. Research institutions are obliged to enter into a Collaborative Research Agreement with content provided by JST. (We may adjust the agreement terms for matters for which it is considered that there are reasonable grounds to do so in consideration of the characteristics of the research content.) Indirect costs paid will be a maximum of 30% of direct costs. They are also obliged to properly implement their R&D, in accordance with the Collaborative Research Agreement and R&D plan. The research institution shall not be permitted to perform research if it cannot enter into a Collaborative Research Agreement with JST, or it is determined that it cannot suitably perform the R&D in question.

c. In cases where either the Collaborative Research Agreement and JST specify separate guidelines, etc., the research institution will be responsible for managing expenditure and research expenses in an appropriate manner based on these guidelines. The

institution is also required to prepare and submit a detailed statement of expenses (equivalent to an income and expenditure book for domestic institutions) in English that provides details of research expenses. The research institution must, even during the period of the agreement, cooperate with all investigations into expenses, etc., by JST, as requested.

d. The intellectual property rights generated by the implementation of research will be shared equally with the JST. You will be obliged to equally bear with the JST the expenses necessary to apply for the protection and to maintain intellectual property rights. (however, Article 17 of the Industrial Technology Enhancement Act (Japanese version of the Bayh-Dole Act) does not apply to overseas institutions). As a result, any invention that may become intellectual property must be reported to JST immediately (within ten business days).

*Due to Security Export Controls, JST may not enter into Collaborative Research Agreements with institutions published on the “Foreign User List[1]” by the Japanese Ministry of Economy, Trade and Industry (METI).

5.11 Other Considerations

5.11.1 Systems for Childbirth, Childcare, Care Giving

As part of its efforts to promote equal participation from men and women, JST has implemented support systems for childbirth, childcare, and caregiving. This system provides a "Gender Equality Promotion Fund" (maximum amount: 300,000 yen per month x number of months of support) for R&D projects, etc., with the aim of enabling full-time researchers who are employed through projects being funded by JST (excluding indirect costs) to continue their research in the midst of life events (childbirth, childcare, nursing care), or to continue their careers from the time they return to research if they have to suspend their research.

Please see the following websites for details:

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

*1 METI has issued the “Foreign User List” with the aim of strengthening the effectiveness of a catch-all control on goods related to weapons of mass destruction.
https://www.meti.go.jp/policy/anpo/law05.html#user-list

5.11.2 Using the JREC-IN Portal

The database of researchers and research staff (JREC-IN Portal https://jrecin.jst.go.jp/) is the largest website for recruiting researchers in Japan. The service contains information on human resources, including researchers, supporting staff, as well as engineers involved in research. The database is completely free to browse.

The database currently holds more than 19,000 pieces of information on human resources from universities, public research organizations, and private business firms, and has more than 130,000 registered users. In addition, it is possible to simplify the management of the application documents by using the Web application function of the JREC-IN Portal. At the same time, this can also reduce the burden on job applicants. We hope you'll make use of the JREC-IN Portal to search for human resources (postdoctoral, researchers, and so on) with high levels of knowledge when recruiting for research projects.

JREC-IN Portal is linked with researchmap, and its resume and achievement list creation function enable you to easily create resumes using the information registered in researchmap.

Chapter 6 Key Points in Submitting Proposals

6.1 Enrolling in and Completing the Educational Program on Research Integrity

The R&D project applicant (= the Principal Investigator) must complete the Educational Program on Research Integrity as a prerequisite for application. Note that if completion of the program cannot be confirmed, the application will be disqualified for failing to meet the requirements (Enrollment in and completion of the research integrity educational program by the time of application is not a prerequisite for those other than the applicants.

To enroll in the Educational Program on Research Integrity and to submit a declaration of completion, follow either procedure (1) or (2) below. For application instructions using e-Rad, refer to "Chapter 7. Submission via the Cross-ministerial R&D Management System (e-Rad)."

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

Applicants, who have already completed an e-learning program or educational seminar on various aspects of research integrity (including eAPRIN (ex-CITI Japan) e-learning program and JSPS e-Learning Course on Research Ethics) at your institution by the time of their application, are requested to make the declaration of it on the e-Rad application information input screen.

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

a. Applicants who have in the past completed eAPRIN (ex-CITI Japan) e-learning program in a JST program: Applicants who have in the past completed eAPRIN (ex-CITI Japan) e-learning program in a JST program by the time of their application are requested to make the declaration of it on the e-Rad application information input screen.

b. For other applicants for whom a. above does not apply: Applicants who find it difficult to enroll in the educational program for research integrity because their institution does not offer such a program or for other reasons may enroll in and take a digest version of eAPRIN (ex-CITI Japan) e-learning program offered through JST. Please attend from the URL below.

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

No cost is needed for completing the program, which will take one to two hours to complete. Once enrolled, applicants are expected to complete the program without delay and then to declare the completion of the program and to also enter the number of the completion confirmation sheet (7 figures number + ARD) in the e-Rad application information input screen.

■Contact for consultation on the Educational Program on Research Integrity

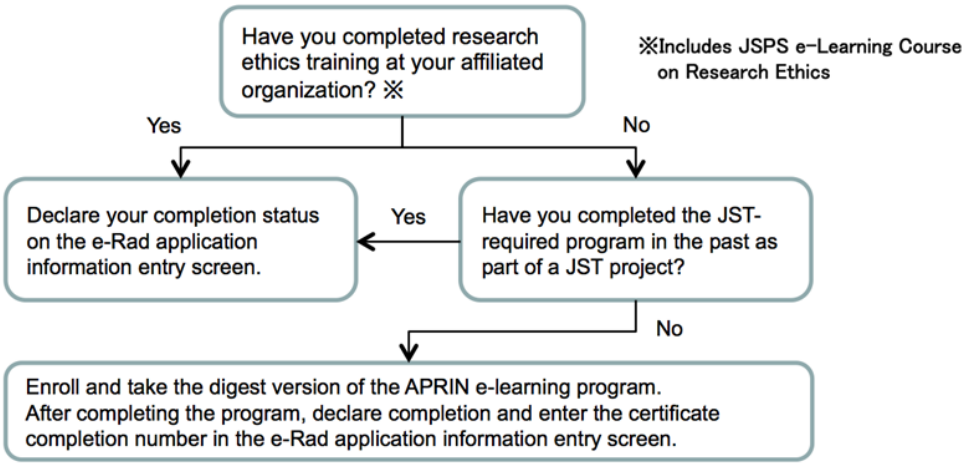
Japan Science and Technology Agency
Department of Audit and Legal Affairs, Research Integrity Division
E-mail： rcr-kousyu@jst.go.jp

■Contact for consultation on the call for application

JST RISTEX　E-mail：boshu@jst.go.jp

* Include the program name, e-Rad's proposal ID, research applicant name and project name in the body of email.

<Flow chart for Reporting Completion of Research Ethics Education Programs>



JST requires researchers of the projects to enroll in and complete designated units of the eAPRIN (ex-CITI Japan) e-learning program. All researchers of an accepted proposal are required to complete the designated units of the eAPRIN (ex-CITI Japan) e-learning program (excluding those who have already completed the designated modules at their institution or in another JST program).

6.2 Measures against Unreasonable Duplication and Excessive Concentration

○Measures against "Unreasonable Duplication"

If a researcher is unnecessarily receiving competitive funds from multiple sources for the same R&D project (same project name or content receiving competitive funding or proposal-based research funding (hereinafter referred to as "competitive funds") being undertaken by the same researcher, and any of the following applies, the researcher shall be made ineligible to apply for this program, or selection of their R&D project withdrawn, or their budget reduced (hereinafter referred to as "withdrawal of R&D project selection.")

- In the case that simultaneous proposals have been submitted for multiple competitive research funds and duplicate approval granted for essentially the same R&D project (including cases in which there is a considerable degree of research content duplication; hereinafter the same shall apply).
- In the case that a duplicate application is made for funding of a R&D project that is essentially

the same as another R&D project that has already been selected and has already received competitive research funding.

・In the case that there is an overlap in intended application of research funding between multiple R&D projects.

・Other cases equivalent to the above.

At the application stage for this program there are no limitations regarding the submission of proposals to other competitive funding programs, etc. If a R&D project is selected by another competitive funding program, report this promptly to JST at the contact address (boshu@jst.go.jp). If reporting is omitted, the approval decision for the R&D project may be revoked.

- **○Measures against "Excessive Concentration"**

Even if the content of the research proposed for this program differs from the content of another research being carried out under another competitive funding program, if that the overall research funding allocated to the same researcher or research group (hereinafter referred to as "researchers") in relevant fiscal year exceeds an amount that can be utilized effectively and efficiently and can be used within the research period, and any of the following applies, selection of the R&D project under this program may be withdrawn.

・In the case that an excessive amount of research funding is being received in light of the capabilities of the researchers and the research methods being used, etc.

・In the case that an excessive amount of research funding is being received, compared with the amount of effort (percentage of the researchers' overall working time* that is required for carrying out the said R&D project) allocated to the R&D project.

・In the case that highly expensive research equipment is purchased unnecessarily

・Other cases equivalent to the above

*The total work time of a researcher includes the time not only for research activities but also for teaching activities, management assignments, and other activities substantially equivalent to work.

For this reason, if you submit proposals to other competitive funding programs, after submitting your application to this program, and the R&D project is selected by another competitive funding program, or if any information provided on your application changes, please report this promptly to JST at the contact address (boshu@jst.go.jp). If reporting is omitted, the approval decision for the R&D project may be revoked.

How "effort" should be understood

Definition of "effort"

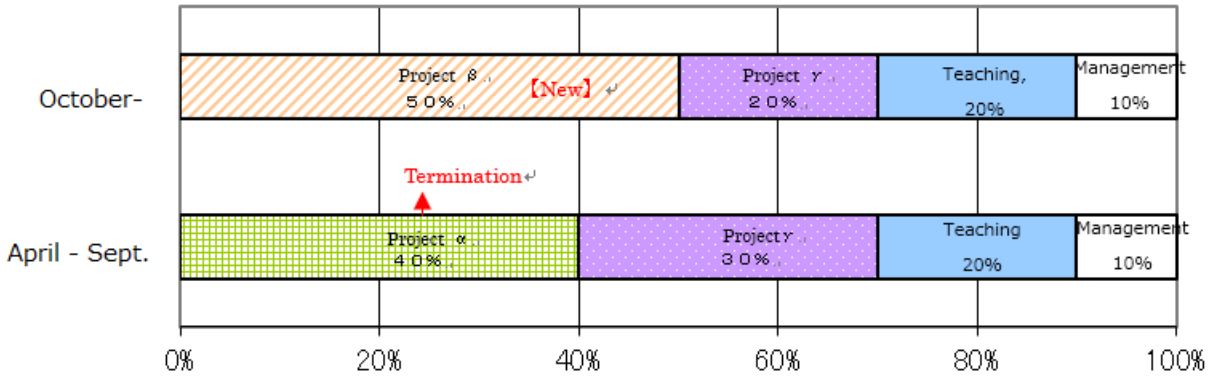
○According to the Third Science and Technology Basic Plan, "effort" is defined as "the distribution of time during which an individual engaging in a research copes with a research, education, and management."

○When a researcher makes a proposal for a R&D project, he/she needs to describe the percentage of his or her time required to implement the research relative to the time that is taken for his/her total work."*

○Note that the total work time includes not only the time for research activities but also the time taken for teaching and management activities.

○Accordingly, the amount of "effort" may vary depending on a review or an assessment of a research.

Ex. Project α is canceled halfway in the fiscal year and Project β is adopted. The state of the percentage of the total work time is as shown here. (Project γ continues for one year.)



○ In this example, Project α is canceled at the end of September (40% effort distributed) and Project β is started as a new one from October (50% effort distributed). The "effort" in Project γ varies from 30% to 20%.

*"Guideline for Proper Implementation of Competitive Funds" (an agreement at the liaison committee of relevant governmental bodies concerning competitive funds, revised on June 22, 2017)

○Information on Proposal Contents Provided to Eliminate Unreasonable Duplications and Excessive Concentration

In order to eliminate unreasonable duplication and excessive concentration, to the extent necessary the information of some proposals (or selected projects/programs) may in some cases be provided through the Cross-ministerial R&D Management System (e-Rad) to other departments in charge of competitive funds, including other government ministries. Furthermore, when it is required that checks be made for duplicate project applications under other funding programs, the information may be provided in a manner alike.

6.3 The State of Acceptance of Applications for Other Competitive Funds Including Other Governmental Bodies

If you are receiving Grants-in-Aid for Scientific Research or other competitive research funding operated by the national government or independent administrative agencies (including national research and development agencies), or other research grants (including funding for which applications have been submitted), please provide information of this funding in the R&D proposal in the prescribed format (Form 6 Other funding awards/grants).

Based on information on the content of the R&D proposal and effort (research time allocation rate), if either unreasonable duplication or excessive concentration of competitive funding has formed, the R&D proposal may not be selected, or selection may be withdrawn, or research funding may be reduced. Furthermore, the R&D proposal may also not be selected, or selection may be withdrawn, or research funding may also be reduced in the case that the information provided in the R&D proposal is found to be false.

In order to eliminate an unreasonable duplication or an excessive concentration of competitive funding if a researcher is receiving other competitive funding operated by the national government or independent administrative agencies (including national research and development agencies), or other research grants, or if researcher has been selected for such funding, the researcher may not submit proposals to this program for research with the same project name or content.

6.4 Measures against Inappropriate Usage of Research Funds

Inappropriate use and reception (referred to as “inappropriate usage” hereinafter) of research budgets related to implemented issues are strictly treated as described below.

- ○**Measures Taken in the Case that Inappropriate Usage of Research Expenses**

are Found

(i) Measures to Cancel Contracts

The Collaborative Research Agreement contract is cancelled or altered if issues of inappropriate usage are found, and a request is made for refunding all or part of the entrusted funds. Contracts for the following year and subsequent years may not be concluded.

(ii) Measures to Restrict Application and Participation Eligibility※1

Restriction measures set out in the table below, depending on the levels of inappropriate usage, are taken against the application and participation eligibility of researchers※2 (including researchers who conspired, referred to as ("researchers who conspired to inappropriate usage")) who exercised inappropriate usage of research expenses of this project or those whose involvement in inappropriate usage is not proven but who violated due care of a prudent manager. Or, they are otherwise reprimanded.

Furthermore, the outlines of pertinent inappropriate usage (names of researchers who exercised inappropriate usage, project names, affiliations, research issues, amounts of budget, fiscal year of research, contents of inappropriate usage, contents of measures taken, etc.) are provided to persons of other ministries and their independent corporations in charge of competitive funds, who may restrict application and participation of the researchers in other systems for competitive funds of the prefectures.

※1 "Application and participation" refer to the proposal, subscription, and application of a new project; participation in research as a new joint researcher; and participation in an ongoing R&D project as a Principal Investigator or a joint researcher.

※2 "Researchers who violate due care" refer to those whose involvement in inappropriate usage is not proven but who violated the duty of due care of product manager they should exercise.

<table>
<tr><th>Classification of person who committed or is involved in misconduct in use of research budget</th><th colspan="2">Extent of maliciousness in misconduct</th><th>Period of ineligibility for applying to competitive research fund, deemed to be reasonable*3</th></tr>
<tr><td rowspan="3">A researcher who committed a misconduct or a researcher who was in conspiracy with a person who committed a misconduct *1</td><td colspan="2">1. Use of a research budget to make a private profit</td><td>10 years</td></tr>
<tr><td rowspan="2">2. Other than 1.</td><td>①Impact of the misconduct on the society is substantial and maliciousness of the misconduct is judged to be high</td><td>5 years</td></tr>
<tr><td>②Neither ① or ③</td><td>2-4 years</td></tr>
</table>

		③The impact of the misconduct on the society is small and the maliciousness of the misconduct is judged to be low.	1 year
A researched who used a fabrication and other dishonest means to receive a competitive research fund or etc. and a researcher who was in conspiracy with the person who committed this misconduct			5 years
A researcher who did not commit or was not involved in a misconduct, but used a research budget, inappropriately, failing to fulfill his/her duty of due care of prudent manager *2			1 to 2 years (in maximum) in accordance with the degree of failure of fulfilling his/her duty of due care of prudent manager

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

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

*2: In case of item 3, the influence over the society, as well as the malignancy of the act, is minor.

*3: Also ineligible in the fiscal year in which inappropriate usage of research funds are identified.

(iii) About Public Announcement of a Case of Inappropriate Usage

Among those who are involved in an inappropriate usage of the program's research funds or those who failed to fulfil their duty of due care of prudent manager, regarding those researchers whose eligibility of application to or participation in this program is restricted, information of the outline of their misconduct (name of researcher, name of program, name of affiliated institution, fiscal year of research, details of misconduct, details of measures taken) will be disclosed in principle by JST. At the same time, information of outline of their misconduct will be disclosed in principle by MEXT.

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

Furthermore, according to the "Guidelines for the Management and Audit of Public Research Funds in R&D institutions (Practice Standards)," once misconduct is determined as the outcome of an investigation of an institute, it will be the responsibility of the R&D institution to announce the results of the investigation; hence, we request that each institution deal with the matter appropriately, following the "Guidelines".

6.5 Measures taken for Researchers whose Application and Participation Eligibilities are Restricted in Another Competitive Fund System

Researchers on whom restriction is imposed for the reason of inappropriate usage of research expenses in another competitive fund system* under the central government or independent administrative agencies are not eligible to apply to or participate in this program while their qualifications are restricted for application in the competitive fund system.

”Other competitive fund systems” include those systems that newly start a call for proposals in public 2020 fiscal year and those that finished before the 2019 fiscal year.

* Refer to “R&D proposal funding system” (https://www8.cao.go.jp/cstp/compefund/)

6.6 Majors taken to the Violation of Related Guidelines

Violation of related laws or guidelines, etc., in conducting research may result in penalties and sanctions being applied to persons and organizations that committed the violation, and the suspension or cancellation of research funding.

6.7 Storage of Receipts and Report of Actual Usage of Overhead Costs (Indirect Costs)

Institutions who received overhead costs are required to manage the costs appropriately and store the receipts as an evidence for the appropriate use of overhead costs for five years counted from the next fiscal year from which the project ended.

Institutions which received overhead costs are required to report the actual use of overhead costs via e-Rad before June 30 of the next fiscal year. (If a research institute has acquired two or more competitive funds, report all indirect costs accompanied by such competitive funds.) How to use e-Rad system is described on e-Rad operation manual (https://www.e-rad.go.jp/en/manual/for_researcher.html). FAQs are also provided on the website (https://qa.e-rad.go.jp/).

6.8 Carryover of Research Expenses

Making a carryover of research expenses until the end of next fiscal year for a maximum, may be permitted according to the delay of the progress in the project occurs and is difficult to conclude within the fiscal year due to unavoidable conditions difficult to determine in advance the research or study method of the experimental research, such as weather-related conditions, obtaining rare materials and others etc.

6.9 Cross-ministerial Expenses Handing Partitioned Table

The expense items of research costs specific to the Strategic Basic Research Programs are determined on the basis of “Cross-ministerial Expenses Handing Partitioned Table.” As for research expenditure, refer to the “Cross-ministerial Expenses Handing Partitioned Table” on the website (https://www.mext.go.jp/a_menu/shinkou/hojyo/1311601.htm).

6.10 Exchange of Direct Costs between Expense Items

Direct costs of different expense items can be exchanged under certain condition. Exchange are allowed without approval from JST when the amount of direct costs to be exchanged does not exceed 50% of the total direct costs (5 million JPY if the 50% of total direct costs is less than 5 million JPY).

6.11 Securing Research Period until the end of Fiscal Year

In order to enable researchers to continue their research work until the end of a fiscal year, statements below should be followed in every JST competitive funds.

（1）The research institutes and researchers must submit the notification of the completion as a work product of the project in a prompt manner when a project is finished. JST makes inspections on the completion of the project and the achievements of the research.

（2）Submit the accounting report by May 31.

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

Each research institute should make efforts to organize necessary systems at the institute based on the fact that the purpose of those practices is to secure the research period that continues at the end of a fiscal year.

6.12 Promotion on Effective Use of Research Facilities and Equipment

According to “Reform on Competitive Research Funds for Sustainable Creation of Research Achievements (Midterm Summary)” (Examination Meeting on the Reform of Competitive Funds, June 24, 2015), it is considered appropriate that facilities/equipment which are comparatively large in scale and have high general applicability should in principle be shared, under the assumption that the original research objectives are sufficiently accomplished.

In addition, “Introduction of a New Research Facility/Equipment Sharing System Integrated with the Management of Research Institutes” (Advanced Research Platform Group, Council for Science and Technology, November 2015) requires the operation of a “system to share research facilities/ equipment in research organization units” (hereinafter, “equipment sharing system”) in universities, National R& D Agencies and similar institutions.

Also, promoting the deployment and sharing of research equipment and facilities is also called for in the “Research Ability Improvement Reform 2019” (Ministry of Education, Culture, Sports, Science and Technology (MEXT), April 23, 2019) and the “Comprehensive Package to Strengthen Research Capacity and Support Young Researchers” (General Science, Technology and Innovation Conference, January 23, 2020).

Based on the above, for research facilities/equipment which are purchased by the Program, and particularly for large scale, general purpose items, positive efforts for sharing should be made, including sharing within the scope that does not hinder the progress of the applicable Project, use of research facilities and equipment purchased with other research funds, and purchase and sharing by combining multiple research funds, within the scope of the management conditions of other research funds and in accordance with the equipment sharing system in the affiliated institution or organization. Please note that it is necessary to strike a balance between management as shared equipment/facilities and accomplishment of the research purpose of the applicable Project.

Besides the above equipment joint use system, the R&D institutions are requested to collaborate actively with the “University Collaborative Research Facility Network Project” and with a university-wide joint use system to promote the joint use of research facilities and equipment beyond the framework of research organizations or institutions (The “University Collaborative Research Facility Network Project” is operated by the Institute for Molecular Science, National Institutes of Natural Sciences, and Inter-University Research Institute Corporation to promote joint use of nation-wide facilities. The joint use system has been established at each university as part of the maintenance project of the equipment support center and the “New Shared System Installation Support Program”).

○ “About introduction of a joint use system for new research facilities and equipment integrated with research organization management” (Advanced Research Base Subcommittee, Council for Science, Technology, November 25, 2015)
https://www.mext.go.jp/component/b_menu/shingi/toushin/__icsFiles/afield-file/2016/01/21/1366216_01_1.pdf

○ “About reforming competitive research expenses toward sustainable creation of research achievements (mid-term summary)” (Committee for reforming competitive research expenses, June 24, 2015)
https://www.mext.go.jp/b_menu/shingi/chousa/shinkou/039/gaiyou/1359306.htm

○ “About unifying the rules for the use of competitive funds” (Agreed upon by the coordination committees of relevant ministries and agencies on competitive funds, revised on April 20, 2017)
https://www8.cao.go.jp/cstp/compefund/shishin3_siyouruuru.pdf

○ ”On the Purchase of Shared Equipment by Multiple Research Funding Systems (combined use)” (revised on July 20, 2017)
https://www.mext.go.jp/a_menu/shinkou/torikumi/1337578.htm

○ “University Collaborative Research Facility Network Project”
https://chem-eqnet.ims.ac.jp/

○ “New Shared System Installation Support Program”
https://www.jst.go.jp/shincho/program/pdf/sinkyoyo_brochure2019.pdf

6.13 Improving the treatment of (latter-stage) doctoral students

In order to attract outstanding students and working people from home and abroad, the 5th Science and Technology Basic Plan has set up a numerical goal of providing about 20% of the (latter-stage) doctoral students with grants equivalent to their living costs as part of an enhanced financial support for graduate students, especially for the (latter-stage) doctoral students, and there is also a need to expand the employment of (latter-stage) doctoral students as teaching assistants (TA) and research assistants (RA) at universities and R&D corporations, and to improve the treatment of these students. In addition, the “Comprehensive Package to Strengthen Research Capacity and Support Young Researchers” (Council for Science, Technology and Innovation, January 23, 2020) aims to “ensure that latter stage doctoral students who wish to can receive a reasonable amount of living expenses in the future,” and sets forth “promoting to ensure an appropriate level of salary for RAs etc. in competitive funds and joint research grants” as one of the specific measures to do so.

In addition, “The Ideal State of Graduate School Education with an Eye to 2040: Measures to Improve Entire Character for the Development of the Personnel to Lead Society” (Summary of Deliberations) (Central Education Council University Subcommittee, January 22, 2019) and the “Development of Science, and Technology and Innovation Policy for Knowledge-Intensive Value Creation: Becoming a World-Leading Country through the achievement of in Society 5.0 — Interim Summary” (Special Committee on General Policy of the Council for Science and Technology, October 24, 2019)

also state the need for support using various financial resources, including competitive funds and joint research with companies. They also call for the reduction of teachers' teaching burdens through the active deployment of TAs as an initiative to actively employ (latter-stage) doctoral students as RAs, improve their treatment, enhance TA provision, and secure research time.

Moreover, if a (latter-stage) doctoral student provides assistance as an RA, they should be paid a fair amount of compensation for their assistance work.

Based on these considerations, in this program, it is encouraged to proactive employ (latter-stage) doctoral students who are necessary for the execution of R&D as RAs and TAs, and in so doing, it is required to set rates commensurate with the nature and content of their work, aiming for a salary level equivalent to the cost of living, and pay them the salary based on the time they engage in their work under appropriate work management. In addition, when applying for this program, please make sure that the application is based on a budget plan that also takes into account the amount of salary for (latter-stage) doctoral student mentioned above.

6.14 Securing an independent and stable research environment for young researchers

In the "2019 Research Improvement Reform" (Ministry of Education, Culture, Sports, Science and Technology (MEXT), April 23, 2019) and the "Development of Science and Technology Innovation Policy for Knowledge-Intensive Value Creation: Becoming a World-Leading Country through the achievement of Society 5.0 — Interim Summary" (Special Committee on General Policy of the Council for Science and Technology, October 24, 2019), the importance of ensuring employment periods of five years or more has been pointed out with regard to fixed-term positions such as specially appointed faculty members and postdoctoral fellows, as short-term appointments can be a hindrance to career development.

With respect to National University Corporations and Inter-University Research Institute Corporations, "Guidelines for Personnel Salary Management Reform for National University Corporations, etc.: Toward the Establishment of Attractive Personnel Salary Management that Contributes to the Improvement of Educational and Research Capabilities" (Ministry of Education, Culture, Sports, Science and Technology (MEXT), February 25, 2019) states that "in order to achieve the two goals of fostering young faculty members and stabilizing employment, it is preferable that a system is implemented which incorporates the perspective of developing researchers while maintaining flexibility, such as securing employment terms of a certain length — 5 to 10 years — by using expenses with

a high degree of freedom of use, such as indirect expenses and endowments, even if the researchers have a fixed term of employment.”

Based on these considerations, when hiring young researchers such as specially appointed faculty members and postdoctoral fellows for this program, applicants are advised to check with the staff in charge of the human resources and accounting of your department in ensuring that the length of the researchers’ employment term is the same as that of their research periods. It is also advised to secure certain length of their employment terms (appproximately five years or more) by utilizing indirect expenses of other external funding awards, basic expenses and endowment, as far as possible.

6.15 Self-motivated Research Activities by Young Researchers Employed to Carry Out Projects

With regard to young researchers employed in these programs, based on the "Implementation Guidelines for Self-motivated Research Activities by Young Researchers Employed with Competitive Research Funds" (February 12, 2020, Agreement of the Liaison Meeting of Related Government bodies on Competitive Research Funds), if the Principal Investigator, etc. judges that it will not hinder the progress of a project but help it, and permission is obtained from the research institution with which they are affiliated, researchers may use some of their efforts working on these programs for self-motivated research activities and/or activities that will improve their research and management capabilities, while using program funds for personnel expenses. Please see the following for more information.

○ "Self-motivated Research Activities by Young Researchers Employed to Carry Out Projects (contact)" (April 10, 2020)

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

○ Measures for Strategic Basic Research Programs (CREST, PRESTO, ACCEL, ACT-X) related to the "Implementation Guidelines for Self-motivated Research Activities by Young Researchers Employed with Competitive Research Funds" (April 14, 2020)

https://www.jst.go.jp/kisoken/crest/manual/senjukanwa_houshin.pdf

6.16 Support for Diverse Career Paths for Young Researchers with Doctoral Qualifications

The “Basic Policy of the Ministry of Education, Culture, Sports, Science and Technology for Supporting Diverse Career Paths for Young Researchers with Doctoral Qualifications Employed with Public Research Funds” (December 20, 2011, Council for Science and Technology, Committee on Human Resources) calls for “active efforts to support public R&D institutions and Principal Investigators that employ young researchers with doctoral qualification with public research funds, with the aim of securing diverse career paths in Japan and other countries for young researchers with doctoral qualifications. Based on this, when a project is selected in this call for R&D applications and young researchers such as specially-appointed researchers and postdoctoral researchers are to be employed with public research funds (competitive research funds or other project research funds, or public invitation-type education research funds for universities), the institution concerned should make active efforts to support those researchers in securing diverse career paths. Institutions should also consider using indirect funds in these efforts.

6.17 Security Export Control (Measures against Leakage of Technology internationally)

Many advanced technologies are studied at R&D institutions. Particularly at universities, there is a heightened risk of leakage of advanced technologies and research-related materials/equipment or misuse in development/manufacture of weapons of mass destruction owing to the increased number of international students and foreign researchers due to internationalization. For this reason, an organizational response by the R&D institution is required when a R&D institution conducts research activities, including the relevant contract 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 (*) are imposed based on the Foreign Exchange and Foreign Trade Act (Act No. 228 of 1949; hereinafter, “Foreign Exchange Act”). Accordingly, when attempting to export (provide) goods or technologies controlled under the Foreign Exchange Act, in principle, a license from the Minister of Economy, Trade and Industry (METI) is necessary. All those participating in this program must comply with the Foreign Exchange Act and all other laws, ordinances, guidelines, notifications, etc. of the national government. In addition to legal action and penalties, distribution of research funds may be stopped and the decision to allocate research funds may be cancelled if research is conducted in violation of the relevant laws, ordinances, guidelines, etc.

(*) Based on international agreements, etc., Japan's security export control system currently consists mainly of two systems: (1) List control, under which a license from the Minister of METI is necessary in principle in order to export (provide) good (technologies) that have specifications or functions of a certain level or higher (for example, carbon fiber or numerically-controlled machine tools) and (2) catch-all control, under which a license from the Minister of METI is necessary in order to export (provide) goods (technologies) that do not fall under list control, but do satisfy certain other conditions (application conditions, end-user conditions, and notification conditions).

In addition to the export of goods, technology provision is also subject to control under the Foreign Exchange Law. When a technology which is subject to list control is to be provided to a non-resident of Japan or a foreign country, advance approval for provision of that technology is necessary. "Technology provision" includes provision of technical information such as design drawings, specifications, manuals, samples, prototypes, etc. in paper form, by email, and by CDs, DVDs, USB memory devices and other memory media, and also includes the provision of operational knowledge through technical guidance and technical training, technical support through seminars, etc. Receiving international students from other countries and conducting joint research activities, etc., may also include numerous exchanges of technology that could be subject to control under the Foreign Exchange Act.

Detailed information on security export control has been published at the website of the Ministry of Economy, Trade and Industry (METI), etc. For details, please see the following.

- Ministry of Economy, Trade and Industry (METI)： Security export control (general)
  https://www.meti.go.jp/policy/anpo/englishpage.html
- Ministry of Economy, Trade and Industry (METI)： Security Export Handbook (in Japanese)
  https://www.meti.go.jp/policy/anpo/seminer/shiryo/handbook.pdf
- Center for Information on Security Trade Control:
  https://www.cistec.or.jp/index.html
- Guidance on machine technology control in relation to security export control
  (for universities/R&D institutions, in Japanese):
  https://www.meti.go.jp/policy/anpo/law_document/tutatu/t07sonota/t07sonota_jishukanri03.pdf

6.18 Dialogue and Collaboration with Public Stakeholders

According to "Promotion of Dialogue on Science and Technology with the Public (a Basic Approach

Policy)" (June 19, 2010, decision of the Minister of State for Science and Technology Policy and expert committee), if a proposal is selected in this call and receives an allocation of public research funds (competitive funds or project research funds) in an amount of 30 million yen per year or more for one project, it is considered essential to have an attitude in which excellent achievements in science and technology are constantly produced, and achievements in science and technology are returned to the public in order to further develop science and technology in Japan, and science and technology are advanced jointly with the understanding and support of the public through "Dialogue on Science and Technology with the Public." In addition, the 5th Science and Technology Basic Plan (Cabinet decision of January 22, 2016) calls for deepening the conventional relationship, in which science and technology and society are opposed, into a relationship of dialogue and cooperation by various stakeholders, i.e., researchers, citizens, the media, industry, and policymakers, in other words, a relationship that promotes "co-creation." From these viewpoints, efforts to explain the content and results of research activities to society and the public in easily-understood terms, and efforts to promote dialogue and cooperation among various stakeholders are demanded. Based on this, we ask that program participants make active efforts in connection with these activities, including holding public lectures and symposiums on research achievements, continuously posting information on research achievements on the internet, and holding roundtable meetings with various stakeholders.

(Reference) "Promotion of Dialogue on Science and Technology with the Public, (A Basic Approach Policy)"

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

(Reference) "The 5th Science and Technology Basic Plan"

https://www8.cao.go.jp/cstp/kihonkeikaku/5honbun.pdf

6.19 Data disclosure from The National Bioscience Database Center

The National Bioscience Database Center (NBDC) (https://biosciencedbc.jp/) was established in the Japan Science and Technology Agency (JST, a National Research and Development Agency) in April 2011 to promote the integrated use of databases in the life sciences field created by various R&D institutions and others. In "Progress and Future Direction of the Integration of Life Science Database Project" (January 17, 2013), the object projects that receive provision of data and databases are to be expanded, centering on the NBDC. Based on these points, program participants are asked to cooperate in disclosure by the NBDC of the following types of data and databases obtained

from this program.

No	Type of Data	Place of Disclosure	URL
1.	Overview of databases constructed for disclosure	Integbio Database Catalog	https://integbio.jp/dbcatalog/?lang=en
2.	Copies of data in connection with results published in paper presentation, etc. or copies of databases constructed for disclosure	Life Science Database Archive	https://dbarchive.biosciencedbc.jp/index-e.html
3.	Of items in 2, data related to human beings	NDBC Human Database	https://humandbs.biosciencedbc.jp/en/

< Contact >

National Bioscience Database Center of Japan Science and Technology Agency

TEL: +81-3-5214-8491　　e-mail: nbdc-kikaku@jst.go.jp

6.20 Description of systematic numbers in the acknowledgments of the papers, etc.

When submitting the research results, please indicate that you have received the grant from this program. In the Acknowledgment of the paper, please include "[JST XXX Program] Grant Number [10] digit systematic number". The systematic number of the project consists of [JPMJ + 2 letters + 4 digits].

The following is an example of the Acknowledgment in the paper.

[English]

This work was supported by JST [XXXX Program] Grant Number [JPMJxxxxxx].

[Japanese]

本研究は、JST【○○事業】【JPMJxxxxxx】の支援を受けたものです。

* If there are two or more programs related to the paper, please list the program names and systematic numbers.

6.21 Regarding the reformations of competitive funding systems

Following the “Integrated Innovation Strategy 2019” and “Integrated Package for Strengthening of Research Capabilities and Support for Young Researchers,” discussions concerning the reform of competitive funding system is taking place at present at the government in order to further improve

the effectiveness and efficiency of research funding it provides. Thus, if amendments are made to these systems or policies applicable to other competitive funding systems are presented, and such alterations affect the solicitation and management of this Strategic Basic Research Programs, it will be announced accordingly.

6.22 Consideration on "Guidelines for the Management and Audit of Public Research Funds in R&D Institutions (Practice Standards)"

(1) Implementation of Management and Audit Systems Based on the "Guidelines for the Management and Audit of Public Research Funds in R&D Institutions (Practice Standards)"

In implementing the program, R&D institutions must stringently observe the "Guidelines for the Management and Audit of Public Research Funds in R&D Institutions (Practice Standards)" (decided by the Minister of Education, Culture, Sports, Science and Technology on February 15, 2007; revised on February 18, 2014) (*). There is a need for R&D institutions, having implemented a system for managing and auditing public research funds, to take responsibility for making every effort to properly disburse the contract research funds in line with the aforementioned guidelines. If the Ministry of Education, Culture, Sports, Science and Technology (MEXT) decides that the system of a R&D institution for managing and auditing is insufficient, based on an investigation according to the said guidelines, measures such as reduction of overhead costs of competitive funding could be taken on the said institution. "Competitive funding" includes all financing distributed by the MEXT and the independent administrative agency under the jurisdiction of the MEXT.

(*) Please refer to the following URL for the details of the "Guidelines for the Management and Audit of Public Research Funds in R&D Institutions (Practice Standards)."

https://www.mext.go.jp/a_menu/kansa/houkoku/1343904.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 R&D Institutions (Practice Standards)"

In concluding a contract for this project, each R&D institution must prepare for a management and auditing system for research expenses based on the said guidelines and submit a "Self-evaluation Checklist for Implementation of Proper Systems" ("checklist," hereinafter), which is a report on the situation (research undertaking is not approved unless the checklist is submitted).

It is necessary for the R&D institution to use the research and development management system (e-Rad) common to ministries in order to submit the checklist in the form given on the website below to the Competitive Fund Coordination Office, Promotion Planning Section, Promotion Bureau, Ministry of Education, Culture, Sport, Science and Technology by the date of the conclusion of the Collaborative Research Agreement. However, submission of a new checklist is not necessary if it has been submitted on another occasion after April 2020. Further, you do not need to submit the application if your organization is not engaged in research activities, or in the case where yours is engaged in such activities, if it does not accept budgets or funds from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) or an incorporated administrative agency under its jurisdiction.

See the website of the Ministry of Education, Culture, Sports, Science and Technology below for details of the method for checklist submission.

https://www.mext.go.jp/a_menu/kansa/houkoku/1301688.htm

Note: A perfect environment for using e-Rad is necessary for checklist submission. Note that the registration of an R&D institution to e-Rad requires approximately two weeks. See the URL below in addition to the URL given above for details of the procedure related to the use of e-Rad.

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

Since the said guideline encourages the “promotion of issuing and sharing of information,” please use the checklist provided widely such as in the websites of R&D institutions to proactively utilize the information.

6.23 Consideration on “Guidelines for Responding to Misconduct in Research”

（1）Administrative System based on the “Guidelines for Responding to Misconduct in Research”

In applying to this funding program and conducting research activities, R&D institutions are required to adhere to the “Guidelines for Responding to Misconduct in Research” (decided by the Minister of Education, Culture, Sports, Science and Technology (MEXT) on August 26, 2014, hereinafter referred to as the “guidelines”)※.

In the case that the Ministry of Education, Culture, Sports, Science and Technology finds defects in the approach of organizations as a result of a survey of the situation, based on the guidelines, the Ministry may take measures including reduction of indirect expenses of the whole competitive fund for the pertinent organization. The “whole competitive fund” includes all financing distributed by the

MEXT and independent administrative agencies under the jurisdiction of the MEXT.

※Refer to the following webpage for the guideline (in Japanese).

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

（2）Submission of the “Self-evaluation Checklist” Based on the “Guidelines for Responding to Misconduct in Research”

When concluding a contract for this program, each R&D institution must submit “a checklist related to the approach, based on ‘Guidelines for responding to misconduct in research” (hereinafter, “checklist of inappropriate research conduct”). (Research undertaking is not approved unless a checklist of inappropriate research conduct is submitted).

It is necessary for the R&D institutions to use the research and development management system (e-Rad) common to ministries in order to submit the checklist in the form given on the website below to the Office of Equitable Research Promotion, Human Resources Section, Academic Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology by the date of the conclusion of the Collaborative Research Agreement. However, there is no need to submit a checklist of inappropriate research conduct, if it has already been submitted on a different occasion after April 2020. Further, you do not need to submit the application if your organization is not engaged in research activities, or in the case where yours is engaged in such activities, if it does not accept budgets or funds from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) or an incorporated administrative agency under its jurisdiction.

See the website of the Ministry of Education, Culture, Sport, Science and Technology for details of the method for submitting a checklist of inappropriate research conduct.

https://www.mext.go.jp/a_menu/jinzai/fusei/1374697.htm

Note: A perfect environment for using e-Rad is necessary for checklist submission. Note that the registration of an R&D institution for e-Rad requires approximately two weeks. See the URL below in addition to the URL given above for details of the procedure related to the use of e-Rad.

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

（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 the Contract

In the case of specific misconduct (fabrication, falsification, and plagiarism) is identified of research of the program, the Collaborative Research Agreement is cancelled or altered and a refund of all or part of the entrusted expenses is requested. Furthermore, there may be cases in which no agreement is concluded in the following years.

(ii) Measures to Restrict Application and Participation Eligibility

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

Furthermore, in the case that such restriction measures are taken on qualification for application and participation, information is provided to pertinent sections of competitive fund systems (referred to as “competitive fund system related to the Ministry of Education, Culture, Sport, Science and Technology” hereinafter) distributed by the Ministry of Education, Culture, Sport, Science and Technology and independent administrative agencies of the ministry and to pertinent sections of competitive fund systems (referred to as “competitive fund systems related to other ministries” hereinafter) distributed by other ministries and their independent administrative agencies, which may similarly restrict qualification for application and participation in competitive fund systems related to the Ministry of Education, Culture, Sport, Science and Technology and to other ministries.

<table>
<tr><th colspan="3">Classification of person ineligible to apply to competitive research funds, being involved in specific research misconduct</th><th>Degree of maliciousness in specific research misconduct</th><th>Ineligible period of application※</th></tr>
<tr><td rowspan="2">Person who was involved in a research misconduct</td><td colspan="2">1. Especially malicious person, who, from the beginning of research, had an intention to commit a specific research misconduct</td><td></td><td>10 years</td></tr>
<tr><td>2. The author of a research paper, which is a</td><td>The authors of the paper, who are responsible for the whole content of it. Namely, they are the supervisor and the representative author of the paper or others who are</td><td>The misconduct has a substantial impact on the development of relevant research fields and on the society, or the maliciousness of the deed is judged to be high.</td><td>5-7 years</td></tr>
</table>

	product of a research where a specific research misconduct was committed	identified to be equivalently responsible for the paper.	The misconduct has a small impact on the development of relevant research fields and on the society, or the maliciousness of the deed is judged to be low	3-5 years
		The authors of the paper other than those described above.		2-3 years
	3. Persons who conducted a specific research misconduct other than those of 1 and 2.			2-3 years
Person who has not been involved in a specific research misconduct but is a responsible author of a paper relevant to a research where a specific research misconduct was committed, being the supervisor or representative author of the paper, or a person, who is identified to be equivalently responsible for the paper.			The misconduct has a substantial impact on the development of relevant research fields and on the society, or the maliciousness of the deed is judged to be high.	2-3 years
			The misconduct has a small impact on the development of relevant research fields and on the society, or the maliciousness of the deed is judged to be low	1-2 years

※ The peri d starts from the beginning of next fiscal year after the time when misconduct is identified. Also ineligible in the fiscal year which misconduct is identified.

(ⅲ) Measures Taken to Researchers whose Qualification is Restricted for Application to and Participation in the Competitive Fund System and Base Expenses

Qualification is restricted for application to and participation in this project for researchers whose qualification is restricted for application to and participation to competitive fund related to MEXT; management grants to national university corporations, inter-university research institute corporations and independent administrative agencies under MEXT; base expenses including private school subsidies; or competitive fund systems related to other ministries during the period the restriction is in effect.

(ⅳ) Public Announcement of Misconduct

In principle, JST makes a public announcement with regard to the outline of specific misconduct in research activities of this project (name of researcher, project name, affiliation, research year, contents of misconduct, and measures taken). The Ministry of Education, Culture, Sports, Science

and Technology also makes a public announcement concerning the contents of the pertinent misconduct (name of misconduct, kind of misconduct, research field of misconduct, name of expense account of misconduct, outline of misconduct, measures taken by the R&D institution, measures taken by fund distributor, and so on).

The said guidelines state that an R&D institution announces the survey result immediately. Each organization is requested to handle the case accordingly.

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

6.24 Duty to Complete Education on Research Ethics and Compliance

Researchers who participate in the project of this research 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 on compliance education as per the “Guidelines for the Management and Audit of Public Research Funds in Research Institutions.”

During the process of concluding a Collaborative Research Agreement after the selection of a 85 proposed research project, it is necessary for all researchers participating in the research project, including the Research Director and Individual Researchers, to receive training on research ethics education and compliance education and submit a document to confirm their understanding of the contents of the training..

6.25 Handling of Information on the e-Rad system

Information of individual projects that have been selected for adoption (name of funding program, name of R&D project, name of affiliated R&D institution, name of Principal Investigator, budget amount, implementation period and the summary of the R&D project overview etc.) shall be deemed to be “information that is scheduled to be made public” as prescribed under Article 5, Paragraph 1, Item (a) of the “Act on Access to Information Held by Independent Administrative Agencies” (Act No. 140 of 2001). The name of the researcher, name of the affiliated R&D institution, name of the R&D project, and the R&D project overview summary are scheduled to be made public.

6.26 Provision of the e-Rad system to the Cabinet Office

The 5th Science and Technology Basic Plan attempts to complete the registration of funds for public solicitation for science and technology innovation policies based on objective evidences in a research to perform evaluation and analysis. Information registered in e-Rad is utilized for properly evaluating research and development using the nation’s funds and for planning effective, efficient,

and comprehensive strategies. To this end, CSTI and relevant ministries have decided to complete registration of achievements and accounting, such as papers and patents, in e-Rad in order to connect output and outcome related information to inputs to the publicly solicited research fund system.

For this purpose, it is required to enter all updates to information regarding research outputs and accounting of the selected Project and any use of indirect expenses related to competitive funding awards in e-Rad every year.

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

6.27 Registration of researcher information to “researchmap”

”researchmap” (https://researchmap.jp/?lang=en) is the largest Japanese database of researcher information to provide a partial view of Japanese researchers nationwide. A public organization operates the services in a stable and sustainable manner, so as to make information on registered profiles and achievements available to the public via the internet. Moreover, researchmap collaborates with e-Rad and numerous databases of college professors to enable registered information to be accessed through other systems; there is no need for researchers to repeatedly register the same achievement in various applications and databases.

The information in researchmap is utilized effectively for surveying national academic or S&T plans, as well as for statistical purposes. Researchers involved in this Program are advised to register at researchmap.

6.28 Patent Applications by JST

In case a R&D institution does not acquire rights to an invention, JST may acquire those rights in some cases. Therefore, if a R&D institution does not foresee acquiring rights to an invention, the researcher should notify JST promptly, providing information concerning the said invention, etc. 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 or not, for example, a copy of the notification of invention used in the R&D 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, etc. is possible, a separate “Patent Rights Transfer Agreement” will be concluded between the R&D institution and JST.

6.29 Research Support Services Partnership Accreditation System

The "Development of science, technology and innovation policy towards knowledge-based value creation: Becoming a world leader country with the realization of Society 5.0; Final Report" (March 26, 2020, Special Committee on General Policy, Council for Science and Technology) states that "with regard to research support given by the government through public programs and giving research outcomes back to society, new collaborative structures between the government and the private sector should be formed in light of the fact that start-ups operated by businesses with strong ideas and passion have begun to appear."

In this context, the Ministry of Education, Culture, Sports, Science and Technology established the "Research Support Service Partnership Accreditation System" in 2019. The objectives of this system are to improve research environments for researchers, accelerate the promotion of science and technology and the creation of innovation in Japan, and support the development of a variety of research support service initiatives by having the Minister of Education, Culture, Sports, Science and Technology accredit research support services provided by private business operators that meet certain requirements as "Research Support Service Partnerships."

For more information about each accredited service, please look at the Ministry of Education, Culture, Sports, Science and Technology’s website below, and make use of these services.

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

Chapter 7 Submission via the Cross-ministerial R&D Management System (e-Rad)

7.1 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 on-line processes to manage the publicly funded research programs under the jurisdiction of ministries and agencies (Acceptance of applications → Screening → Selection → Management of selected project → Registration of research results and accounting performance).

* "e-Rad" is an abbreviation of the R&D management system common to all ministries, with the acronym for Research and Development (R&D for science and technology) followed by the acronym Electric (Electron).

7.2 e-Rad usage notes

Applicants are requested to make an application using e-Rad (https://www.e-rad.go.jp/en). Please be aware of the following points when submitting your application:

(1) Pre-registration of R&D institution and researcher information is required. Please refer to “7.5 (1).”

(2) Please allow several days (or more) after the application deadline for inputting information into e-Rad: Input of information into e-Rad takes a minimum of around 60 minutes. Furthermore, on the day of the application deadline, there is a risk that the e-Rad system may be congested and inputting may take a long time. Please allow sufficient time before the application deadline to commence inputting information into e-Rad.

(3) It is possible to “temporarily save” input information: It is possible to discontinue input of and temporarily save application information part way through. For details, please refer to e-Rad operation manual (https://www.e-rad.go.jp/en/manual/for_researcher.html).

(4) “Retraction” on e-Rad system is possible: Up to the application deadline, it is possible for researchers to retract and re-edit their R&D proposals. However, do NOT “retract” R&D proposals on the day of the application deadline. On the day of the application deadline, there is a risk that the e-Rad system may be crowded and re-editing the proposal after retraction may take a very

long time. For details, please refer to e-Rad operation manual (https://www.e-rad.go.jp/en/manual/for_researcher.html).

7.3 Application method using e-Rad

(1) Register R&D institution and researcher information.

The R&D institution must register its researcher information and be issued a log-in ID and password. For detail, please refer to “7.5 (1).”

↓

(2) Obtain required application guideline and R&D proposal forms.

Please check the list of Calls for Proposals in the e-Rad Portal site and download the Application Guideline and the Proposal format. Please ensure to choose the Proposal format corresponding to the Program/Phase as each Proposal format is different.

↓

(3) Prepare a R&D proposal (Maximum file size: 5 MB).

↓

(4) Enter application information into the e-Rad system.

Enter the necessary information into the e-Rad system. It takes approximately 60 minutes.

↓

(5) Submit your R&D proposal. (Upload file to e-Rad for submission)

Please ensure to submit your proposal to the correct Program.

7.4 Inquiries and Service Availability

(1) How to operate e-Rad

For how to operate e-Rad, visit the portal site (https://www.e-rad.go.jp/en/) or download the manual from the site. Be sure to agree to the terms of use before making an application.

(2) Where to direct questions on how to use the e-Rad system

Questions about the program itself are answered by the person in charge of the program, as usual. Questions about e-Rad operation methods are answered by the e-Rad Help Desk. Before asking questions, be sure to read both the website outlining the Call for Proposals and the e-

Rad Portal site carefully.

Questions concerning the Call Programs, and procedures for preparation of application documents and submission, etc.	**Research Institute of Science and Technology for Society (RISTEX),** **Japan Science and Technology Agency (JST)** E-mail：boshusolve@jst.go.jp
Questions concerning the Cross-ministerial R&D Management System (e-Rad) Registration of institution or research, or how to operate e-Rad, etc.	**e-Rad helpdesk** Tel: 0570-066-877 (navi dial) Office hours: 9:00-18:00 ●Except on Saturdays, Sundays, holidays, and the year-end and new year period.

- RISTEX ”Call for R&D Proposals” website (https://www.jst.go.jp/ristex/proposal/)
- e-Rad portal website (https://www.e-rad.go.jp/en/)

*JST will not answer any questions regarding the status of review or acceptance.

*JST and the e-Rad helpdesk will be extremely busy on the application submission deadline (proposal deadline). Be sure to make inquiries with adequate time until submission.

(3) Availability of e-Rad

Basically, e-Rad operates 24 hours a day, 365 days a year, but may stop the service for system maintenance. This will be announced in advance on the portal site.

7.5 Notes

(1) Pre-registration of R&D institution and researcher information

R&D institutions have to be registered on e-Rad by the time of application. One R&D institution must assign a representative for e-Rad, download the R&D institution registration form from the e-Rad portal website, and apply for registration. However, if the proposer belongs to an overseas R&D institution, the R&D institution will be registered at JST after adoption. Please proceed to the application screen with no affiliation registered for the researcher ID (cross-ministerial R&D

Management System (e-Rad)), click the “Basic Information” tab and enter the affiliated institution. In that case, it is necessary for the proposer him/herself to obtain the e-Rad login ID and password.

The acquisition procedure is as follows. Please register prior to two weeks or more. Please refer to the e-Rad portal website for details (https://www.e-rad.go.jp/en/).

1) Researchers belonging to domestic R&D institutions
   - Worker: R&D institution clerk
   - Registration Contents: R&D Institution and Researcher Information

2) Researchers who belong to a foreign R&D institution or researchers who do not belong to a R&D Institution
   - Worker: Proposer yourself
   - Registration Details: Researcher Information

(2) Points to note when uploading a proposal to the e-Rad system

・Please ensure to use the format provided for the Program in the fiscal year of the application. Applications using formats for other programs and/or for other fiscal years will not be accepted.

・The documents need to be converted to pdf before uploading to the e-Rad. It can be performed from the menu after logging into the e-Rad.

・Please make sure that the size of the proposal pdf submitted is no more than 5MB.

・Please delete all the track change records.

・Please do not set a password to the pdf file of the proposal.

・Please check that the file converted to pdf has the page numbers inserted

・Please make sure to check the converted pdf file as following errors could occur.

* The use of external characters or special characters may cause corrupted text in the page or file concerned (please refer to “e-Rad operation manual” (can be downloaded from the e-Rad Portal site) regarding the use of characters permitted to use).

Please refer to the original Japanese version for the following part.

Chapter 8 Q&A on Call for Proposals

■ Enrolling in the educational program for research integrity

Content of the educational program for research integrity

Q What content must be included in the educational program for research integrity conducted by affiliated institutions?

A Educational programs for research integrity are the responsibility of each research institution. JST does not specify the specific teaching material to be used in such programs.

(Reference)

According to the “Guidelines for Responding to Misconduct in Research Activities” (August 26, 2014, adopted by the Minister of Education, Culture, Sports, Science and Technology), which were effective as of April 2015, research institutions are required to implement a structure for preventing misconduct—such as the installation of a “Research Integrity Education Manager”-and conduct education at the institutional level. Further, the allocating institution is also required to confirm researcher enrollment in the institution’s research integrity education program.

Note, however, that the details in the referenced guidelines focus on misconduct related to academic papers and does not cover bioethics and conflicts of interest, which are different topics.

If you have any questions, please contact the JST Office of Research Integrity.

Japan Science and Technology Agency Department of Audit and Legal Affairs, Research Integrity Division
E-mail: rcr-kousyu@jst.go.jp

Program completion certification

Q Is it necessary to submit documentation certifying completion of an educational program for research integrity?

A No, submission is not necessary at proposal.

Deadline for completing the program

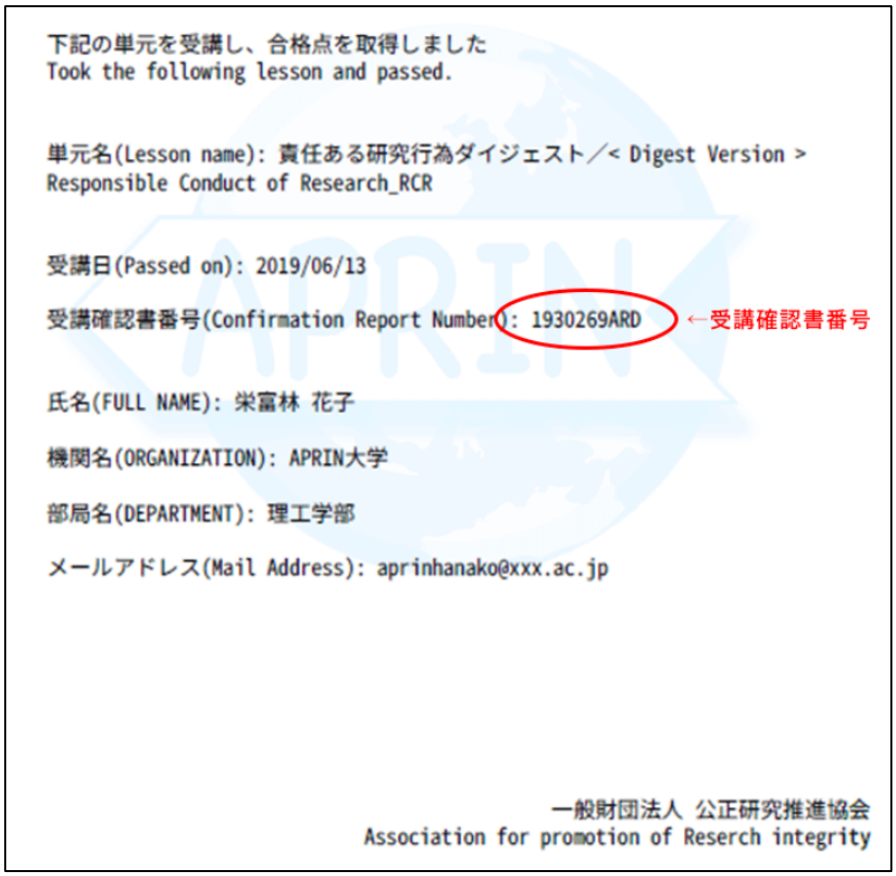
Q I cannot complete the educational program for research integrity before the application deadline. Can I complete the program after the deadline? Can I complete the program after the deadline?

A Completion of the educational program for research integrity by Principal Investigator is a prerequisite for applying. Enrollment and completion of this program will not be permitted after the solicitation deadline. For details, please refer to “6.1 Enrolling in and Completing the Educational Program on Research Integrity”.

Confirmation Report and Declaration of Completion

Q I have completed the digest version of eAPRIN (ex-CITI Japan), but where/how do I view the Confirmation Report Number?

A After passing the quiz, Confirmation Report can be issued. The Confirmation Report Number (7 digits + ARD) is written on the Confirmation Report.



下記の単元を受講し、合格点を取得しました
Took the following lesson and passed.

単元名(Lesson name): 責任ある研究行為ダイジェスト／< Digest Version >
Responsible Conduct of Research_RCR

受講日(Passed on): 2019/06/13

受講確認書番号(Confirmation Report Number): 1930269ARD ←受講確認書番号

氏名(FULL NAME): 栄富林 花子

機関名(ORGANIZATION): APRIN大学

部局名(DEPARTMENT): 理工学部

メールアドレス(Mail Address): aprinhanako@xxx.ac.jp

一般財団法人 公正研究推進協会
Association for promotion of Reserch integrity

Sample of Confirmation Report

Q. I completed the digest version of eAPRIN (ex-CITI Japan) when submitting a proposal for this project (or other JST projects) last fiscal year (or this fiscal year); do I need to enroll in and complete the program again?

A. You do not need to complete the program again. Please input your Confirmation Report Number issued when you completed the program on the Individual Items tab of e-Rad.

Availability of an English version of the eAPRIN (ex-CITI Japan) digest version

Q Since I have not taken the program offered by my institution, I am planning to enroll in the digest version of eAPRIN (ex-CITI Japan). What options are there if my native

language is not Japanese, which makes taking the course in Japanese difficult?

A. Please take the English digest version of eAPRIN (ex-CITI Japan).

* eAPRIN is an e-learning program operated by the Association for the Promotion of Research Integrity (APRIN). The name was changed from CITI Japan to eAPRIN effective on October 1, 2018.

■ **Others**

Requirements for Proposers

Q. Is there an age limit?

A. There is no specific age limit, but it is necessary that Principal Investigator and Collaborator (proposers) be able to create a structure that can perform the research at an organization or the like in Japan and carry out the research and development projects throughout the project period.

Q. Can I be both the Principal Investigator and Collaborator?

A. Yes, you may be both. However, as you are taking on the roles of both “the person in charge of research and development” and the “representative of parties working on social issues” at the same time, your ability to secure sufficient effort and to balance both roles are subject to evaluation. If you will be taking on both roles in the solution creation phase, you will also provide a business plan for the institution that will bear responsibility for the establishment and dissemination activities after the completion of the project.

Q. When multiple institutions participate as parties addressing social issues, does each institution need a “representative of parties working on social issues "?

A. This is not necessary. However, one representative must be decided per application, and must be submitted jointly with the “the person in charge of research and development.”

Technology Seeds

Q. This program requires the utilization of Technology Seeds that have already been obtained, but which Technology Seeds are these? Is there any scope or restrictions?

A. Technology Seeds based on natural science are envisioned, so please make applications within this expected scope. When making selections, we will take the various definitions of natural science into account.

Q. Must all Technology Seeds be included in the application if there are many?

A. Please include up to three representative Technology Seeds.

Multiple Applications

Q. I previously submitted a proposal for a different JST project. Can I also submit a proposal in this program?

A. Yes, you may submit another proposal. However, you may not submit multiple applications with the 2021 call for the “Science of Science, Technology and Innovation Policy” R&D program, the “Comprehensive Practice of Science and Technology on Ethical, Legal and Social Implications/Issues (ELSI)” R&D program, and the social technology R&D program which will be launched in 2021 which focuses on the “prevention of social isolation.” In addition, in cases where the Principal Investigator, etc. or Research Participants, etc. participate in multiple projects (topics) through any competitive fund system operated by JST, adjustment may be made such as reducing the research and development budget according to the effort of the researchers or requiring researchers to select one project for implementation.

Institutional Approval at the Time of Application

Q. Do I need to obtain approval from my affiliated research institution when I apply?

A. You do not need approval from your institution for applications submitted through e-Rad, but please ensure that you obtain prior consent. After projects are selected, JST

will enter into a Collaborative Research Agreement with the researchers' affiliated research institutions. Please note that, if a Collaborative Research Agreement cannot be entered into, the research and development budget cannot be used, so please carefully read "5.9 Responsibilities of Research Institutions, etc." There is no need to submit an approval letter.

Implementation by Foreign Institutions

Q What criteria will be used to determine whether the performance of research would be impractical if not done at a foreign institution?

A Decision concerning whether research must be performed overseas are assumed as following.

① Required facilities do not exist in Japan and have been installed only in foreign institution.

② There is investigation and research that can be performed only by the research institution.

③ Research materials and data can be obtained only at a foreign research institution or foreign location and cannot be brought to Japan.

Collaboration with Foreign Institutions

Q. Collaboration with foreign institutions gives extra points, but is such collaboration actively encouraged when conducting R&D?

A. This means we will evaluate issues with the future potential to be developed internationally through collaboration with foreign institutions and other means after the completion of research and development in this program. Collaboration with foreign institutions is allowed during the research period, but locations for the feasibility and verification tests are limited to regions within Japan.

Interview Selection

Q. If I am not available on the day of the interview selection, can I change the interview selection date?

A. Please be aware that because the schedule is determined by coordinating the schedules of numerous evaluators, the schedule cannot be re-adjusted.

Entering of Research and Development Budget

Q. Do the “research and development budget” written on the application include the amount of indirect costs paid to the institution when the collaborative research agreement is concluded?

A. Research and development budget refers to direct costs. They do not include indirect costs. Please enter only direct costs.

Direct Costs

Q. After the research and development commences, is it possible to change the detailed use of funds within the budget based on the progress and other factors (for example, using funds initially allocated to expenses for goods to travel expenses) (exchange of direct costs between expense items)?

A. The exchange of direct costs between expense items can be done under certain conditions.

・Conditions for shifting funds without requiring approval from JST:

If the amount of funds to be shifted from each expense items does not exceed 50% of the total direct costs in the relevant fiscal year (if 50% of the total direct costs does not exceed 5 million yen, then 5 million yen)

・Conditions for shifting funds after approval from JST (Program Supervisor) that it is necessary for research implementation

If the amount of funds to be shifted from each expense items exceeds 50% of the total direct costs in the relevant fiscal year and exceeds 5 million yen

Note that you are not allowed to exchange direct cost and overhead (indirect) cost.

Indirect Costs

Q. What types of expenditures can indirect costs be used for?

A. Indirect costs are funds for the research institution to allocate to the expenses required for improving the research environment of the implementers participating in a project selected for this program or for enhancing the overall functionality of the research institution. The “Common Guidance for the Execution of Indirect Expenses of the Competitive Fund” (agreed upon by the coordination committees of relevant ministries and agencies on April 20, 2001 and amended on May 29, 2014) gives the following examples as the main uses of indirect costs.

1) Expenses relating to management divisions

- Expenses for development, maintenance, and operation of management facilities and equipment
- Expenses necessary for management administration

Expenses for purchase of supplies and consumables, equipment lease expenses, miscellaneous expenses, personnel expenses, communications and transportation expenses, honoraria, domestic and overseas travel expenses,
conference expenses, printing expenses, etc.

2) Expenses relating to research divisions

- Expenses relating to goods used in common

Expenses for purchase of supplies and consumables, equipment lease expenses, miscellaneous expenses, communications and transportation expenses, honoraria, domestic and overseas travel expenses, conference expenses,
printing expenses, newspaper and periodical expenses, utility expenses

- Expenses necessary to promote research activities through applications of the relevant research etc.

Personnel expenses for research and research support staff, Expenses for purchase of supplies and consumables, equipment lease expenses, miscellaneous expenses, communications and transportation expenses, honoraria, domestic and overseas travel expenses, conference expenses, printing expenses, newspaper and periodical expenses, utility expenses

- Patent related expenses
- Research building development, maintenance, and operation expenses
- Experimental animals facility development, maintenance, and operation expenses
- Researcher interaction facility development, maintenance, and operation expenses
- Facility development, maintenance, and operation expenses
- Network development, maintenance, and operation expenses
- Large-scale computing (including supercomputer) development, maintenance, and operation expenses
- Large-scale computing building development, maintenance, and operation expenses
- Library development, maintenance, and operation expenses
- Field development, maintenance, and operation expenses

Etc.

3) Expenses relating to other relevant operation divisions

- Expenses relating to dissemination of research results
- Expenses relating to publicity, etc.

Even in cases other than the above, indirect costs may be used in cases where the head of the research institution makes a determination that the expenses are necessary to improve the research and development environment of researchers who received competitive funds or to enhance the overall functionality of the research institution. However, this does not include funds that are to be allocated to direct costs.

Research institutions that receive distributions of indirect costs shall properly manage indirect costs and appropriately retain receipts and the like evidencing the proper use of indirect costs for five years from the fiscal year after the fiscal year in which the project is concluded. Furthermore, research institutions that receive distributions of indirect costs shall report the results of annual indirect cost use to JST by June 30 of the following fiscal year via the Cross-ministerial R&D Management System (e-Rad). If the method of making reports via e-Rad is not clear, please refer to the e-Rad user manual (https://www.e-rad.go.jp/manual/for_organ.html) or the FAQs (http://faq.e-

rad.go.jp/EokpControl?&event=CE0002&cid=13593).

Outsourcing

Q. Is it possible to subcontract software preparation and other such work to external companies, etc.?

A. If it is required as a matter of advancing the project, it is possible. If it is required as a matter of advancing the project, it is possible. However, there is a premise that such subcontracting of work to outside parties is based on “subcontracting agreements” that exclude research and development work. In principle, the subcontracting of research and development work is not permitted.

Personnel Transfers after Proposal Selection

Q If a Principal Investigator experiences a change in position (promotion, transfer to a different research institution, etc.) while conducting research, will the Principal Investigator be permitted to continue research activities?

A As long as it is possible to continue research activities unhindered by the change in position, research activities may be continued.

Subcontracting

Do the Collaborative Research Agreements between JST and the implementers’ affiliated research institutions take the form of “subcontract” (see note) via the Principal Investigator’s research institution?

Note: “Subcontract” in the Collaborative Research Agreement means that JST concludes a research agreement only with a research institution with which the Principal Investigator is affiliated and the research institution with which the said Principal Investigator is affiliated concludes another research agreement with a research institution with which a joint researcher is affiliated.

A. In this program, Collaborative Research Agreements are not subcontracts. A JST contracts separately with each of research institutions with which the Principal

Investigator and Lead Implementers are affiliated.

Lead Implementer

Q. What is the definition of lead implementer?

A

Group Leader:

Research and development project comprises multiple research groups. The implementer who represents each group is referred to as the “group leader.” Principal Investigators or Collaborators are group leaders.

Lead implementer:

JST contracts Collaborative Research Agreement separately with each of research institutions and disburses research and development funds, and the group leaders who belong to the research institution that contracts Collaborative Research Agreement with JST, other than Principal Investigator, is referred to as the “lead implementers.” Collaborators are lead implementers too.

Registration on e-Rad by Lead implementer/Group Leader

Q. Other than the Principal Investigator or Collaborator, is it necessary to register anyone on e-Rad?

A. “Lead implementer” is a unique name used by JST and is not on e-Rad. Please register the “lead implementer” as the group leader. It is not necessary to register the implementers.

Q. Some Collaborators and Lead Implementers/Group Leaders do not have e-Rad researcher number, but can they still register on e-Rad?

A. Only the Principal Investigator is required to have an e-Rad researcher number when applying. In addition, Collaborators, Principal Investigators/Group Leaders and Implementers do not need researcher numbers when applying. After project selection, you will be asked to obtain e-Rad researcher numbers as needed.

Coordinator and Bearer

Q. Can the Principal Investigator or Collaborator also be the coordinator, person in charge of establishing solutions, and person in charge of expanding solutions to other communities, as written in the application (Form 6) project concept of the solution creation phase?

A. The most appropriate people should be the coordinator, person in charge of establishing solutions, and person in charge of expanding solutions to other communities. We generally do not expect the Principal Investigator or Collaborators to have dual roles. However, exceptions may be made if it is optimal for the Principal Investigator or Collaborators to also be the coordinator, person in charge of establishing solutions, or person in charge of expanding solutions to other communities. For example, it may be considered in the following cases.

- When the collaborator is a member of the local government and the solution is to be institutionalized in the local government for it to established (dual roles as Collaborator and person in charge of establishing solutions)
- When the Principal Investigator is a member of a nationally active NPO and will independently develop solutions after the completion of the R&D project (dual roles as Principal Investigator and person in charge of expanding solutions to other communities)

Furthermore, we will confirm that the background and roles of the coordinator, person in charge of establishing solutions, and person in charge of expanding solutions to other communities are consistent with the “R&D Plan” and the “Scenario for Establishing Solutions and Expanding Solutions to Other Communities” during selection.

Securing a Research and Development Period (research and development implementation) Until the End of the Fiscal Year)

Q. When does a research results report need to be submitted?

A. JST has made the following arrangements so that implementers can make the most use of research and development period to conduct research and development.

・The deadline for submitting the report on the research achievements, “Results Report” for the fiscal year is May 31 of the following fiscal year.

・The deadline for submitting the accounting report, “the Collaborative Research Results Report (and Income and Expenditure Settlement Report)” for the fiscal year is May 31 of the following fiscal year.

・However, if the end of the research and development period for the last fiscal year is not the end of March of the relevant fiscal year, please submit the report above by the date designated by JST within 61 days after the end of the contract period.

* Each research institution shall establish the necessary internal structures considering that the objective of the above arrangements is to secure a research and development period (research and development implementation) until the end of the fiscal year.

Selected topics and submitted applications

Q. What were the research topics selected and applications submitted last fiscal year in RISTEX’s other area and programs?

A. Refer to following Websites:

https://www.jst.go.jp/ristex/info/press/20200901_01.html

https://www.jst.go.jp/ristex/info/press/20201001_01.html

Research Institute of Science and Technology for Society Proposal application website

https://www.jst.go.jp/ristex/proposal/index.html

English Call Procedures and Preparation of Applications in English

Q. Is the content of the English call procedures exactly the same as the Japanese version?

A. The English version of the call procedures is a translation of the Japanese version. While all efforts have been made to keep the content the same, in the unlikely event that there is a different interpretation due to the wording, please refer to the Japanese as the correct version.

Q. Can I prepare my application in English?

A. This program only accepts applications in Japanese.

Preparation of Applications in Accordance with the Purpose of This Program

Q. Please tell me what I should pay particular attention to when preparing my application in accordance with the purpose of this program.

A. For calls in previous years, there were excellent applications that were not selected because they did not fit the purpose of the program. The following tendencies were seen as reasons for not being selected, so please refer to them when preparing or reviewing your application.

1) Reasons for not being selected that were often seen in the scenario creation phase

・More importance is placed on the research and development of Technology Seeds than on addressing social issues.

・There is little likelihood that the issue will be solved with Technology Seeds.

・There is almost no prospect of future expansion into other communities.

・The participation of important stakeholders, including beneficiaries, is not shown in the plan when conducting the proposed feasibility study.

・There is an unreasonable connection between the application content and the targeted social issue.

・The application content lacks novelty and originality, and has little social impact.

2) Reasons for not being selected that were often seen in the solution creation phase

・More importance is placed on the research and development of Technology Seeds than on addressing social issues.

・There is almost no prospect of expansion into other communities after completion of the project.

・The participation of important stakeholders, including beneficiaries, is not shown in the plan when conducting the proposed verification test.

Chapter 9 Completing the Proposal

Please make a proposal by referring to the following pages. Please refer to “4.2 Research and Development Period” and “4.3 Research and Development Budget (Direct Costs)” for the budget scale and R&D period.

<Note>

The proposal format differs between the scenario creation and the solution creation phases. Be sure to use the forms for application.

*** After creating a proposal, you must convert the documents to PDF before uploading to e-Rad. You can perform conversion to PDF from the menu after logging in to e-Rad. Also, as the converted PDF file may cause errors such as incorrect characters, be sure to open the file and check that there are no errors.**

* When applying for the scenario creation phase, please be sure to enter information in “[Scenario] Forms 1 to 5.” If there are problems with the entered information, the application may not be considered for screening.

* When applying for the solution creation phase, please be sure to enter information in “[Solution] Forms 1 to 6.” If there are problems with the entered information, the application may not be considered for screening.

The use of external or special characters may cause incorrect text to appear on the page or in the file concerned when the file format is converted to PDF. For the characters that can be used, refer to the “Operation Manual for Researchers” (downloadable from the e-Rad portal site).

* Please make sure that the size and layout of the characters are easy for the evaluator to read.

* The shaded area is an explanation and an example of entry. Please delete it when submitting.

[Scenario creation phase]

*** Please download the description format (Word version) from the JST site or e-Rad site.**

2021 [Scenario] Form 1 **Proposal** *Please describe in 3 or 4 sheets in an easy-to-understand manner.

The gray shaded area shows instructions. Please delete when submitting.

Project name	Enter the project name (R&D project name entered in e-Rad) (about 30 characters)	
R&D period	(　　) years (maximum 2 years)	
Name of principal investigator	(Phonetic reading (kana)	
	(Chinese characters, etc.)	
Date of birth (Western calendar)		
Affiliated institution		
Department		
Job title		
Collaborator name	(Phonetic reading (kana)	
	(Chinese characters, etc.)	
Date of birth (Western calendar)		
Affiliated institution		
Department		
Job title		
Address	〒	
Telephone		
Emergency contact	(Mobile phone, etc.)	

<table>
<tr><td colspan="2">E-mail</td><td colspan="2"></td></tr>
<tr><td rowspan="3">R&D activity</td><td rowspan="2">Social issues and objectives</td><td colspan="2">Please summarize each item within 200 characters.
（1） Outline of social issues to be solved
（2） Vision for achieving SDGs (what we should aim for)
Please list the SDG goals that have particular priority (multiple answers allowed).
（3） Recognizing and sharing the importance of co-creation to achieve the vision
Please describe how you recognize and share the importance of co-creation among stakeholders to achieve your vision.
（4） Social issues in a specific target area and their examination status
Please describe what you know about the causes and background of social issues in the area to the extent currently under consideration.
（5） Reasons that the target area is appropriate as the project implementation area
Besides reasons such as the location of the university, etc., or the fact that the project is being implemented ahead of others, please describe the reasons why the project implementation area is suitable as a “feasibility study area” or a “model area for expansion to other areas.”
（6） Reasons for wishing to tackle social issues using the proposed technology seeds
Please make “a representative of parties working on social issues” to describe the above.</td></tr>
<tr><td colspan="2">(7) Keywords (free entry)</td></tr>
<tr><td>Method</td><td>Goals and achievements during the period</td><td>(1) Outline of goals and methods for achieving them (refer to Form 2 for underlying R&D results)
・Please describe your goals during the period of receiving R&D support.
・Please list the specific implementation items and the period/target (people, organization, area, etc.) for each implementation item regarding how to achieve the goal.
・Please explain competing R&D, and if there is competition, explain the difference in the R&D results that are the basis of this proposal.
・Please specify the implementation plan of the possibility test (scale, participants, implementation site, etc.).</td></tr>
</table>

			・Please use about 300 characters in total.			
		Funding	Total amount for the entire period	(thousand yen)	First year (FY2021)	(thousand yen)
			(2) Main use and amount of R&D budget (thousand yen) Please enter the estimated amount for each main business item.			
	Effect		(1) Target and beneficiaries of R&D activities Please use about 100 characters to describe the benefits of solving social problems and the cooperation provided by people who receive benefits to solve them.			
			(2) Expansion to other regions in Japan Please describe what you will do after the R&D period in order to expand to other areas of the country after the project is completed.			
			(3) Continuity after the project is completed Please briefly describe how you will continue your R&D activities after project completion.			
			(4) Role played by this program Please briefly describe the challenges should there be no support from this program.			

	Cooperating organization	Please list the parties/organizations that will cooperate with the project.

Proactive participation by young and/or female researchers

Since there is a great deal of diversity among the beneficiaries from solutions to social issues, it is expected that a wide variety of researchers, including young researchers and female researchers, will participate in the implementation of R&D projects to identify bottlenecks and examine solutions that are in line with social reality. Please describe any measures you have taken, from the perspective of diversity and human resource development, to encourage the active participation of young and female researchers and implementers in this proposal.

Contribution to solving social issues caused by the spread of COVID-19

Many social issues have become apparent due to the spread of COVID-19, and there are expectations of contributions to solving them. If there are any elements that can be contributed by implementing the project, please describe the details.

[Remarks]

2021 [scenario] Form 2 **Technology seeds that serve as the basis of the R&D project**

(Please summarize within 2 sheets including this page for each technology seed. The application requirement is that you already have the technical seeds, so please describe them in a concise and easy-to-understand manner. If you have multiple technology seeds, please list up to 3 seeds on 6 sheets in total.)

The gray shaded area shows instructions. Please delete when submitting.

Name of technology seeds (outline, issue name)			
Researcher		Researcher number	
Affiliation, Post		Field of research	・Free entry
Name of public funds provided			
Report, URL, etc.	・ If there is no URL, please specify the magazine, patent, book, etc. on which the seeds are posted. ・ We may ask you to send a copy, etc. separately.		
Presence or absence of intellectual property rights	・ Enter application number, etc.		
License right	・Please indicate whether or not you have obtained a license from the owner or patent holder of the technology seeds with respect to your R&D activities, and if not, describe the prospects and progress of your efforts to do so.		

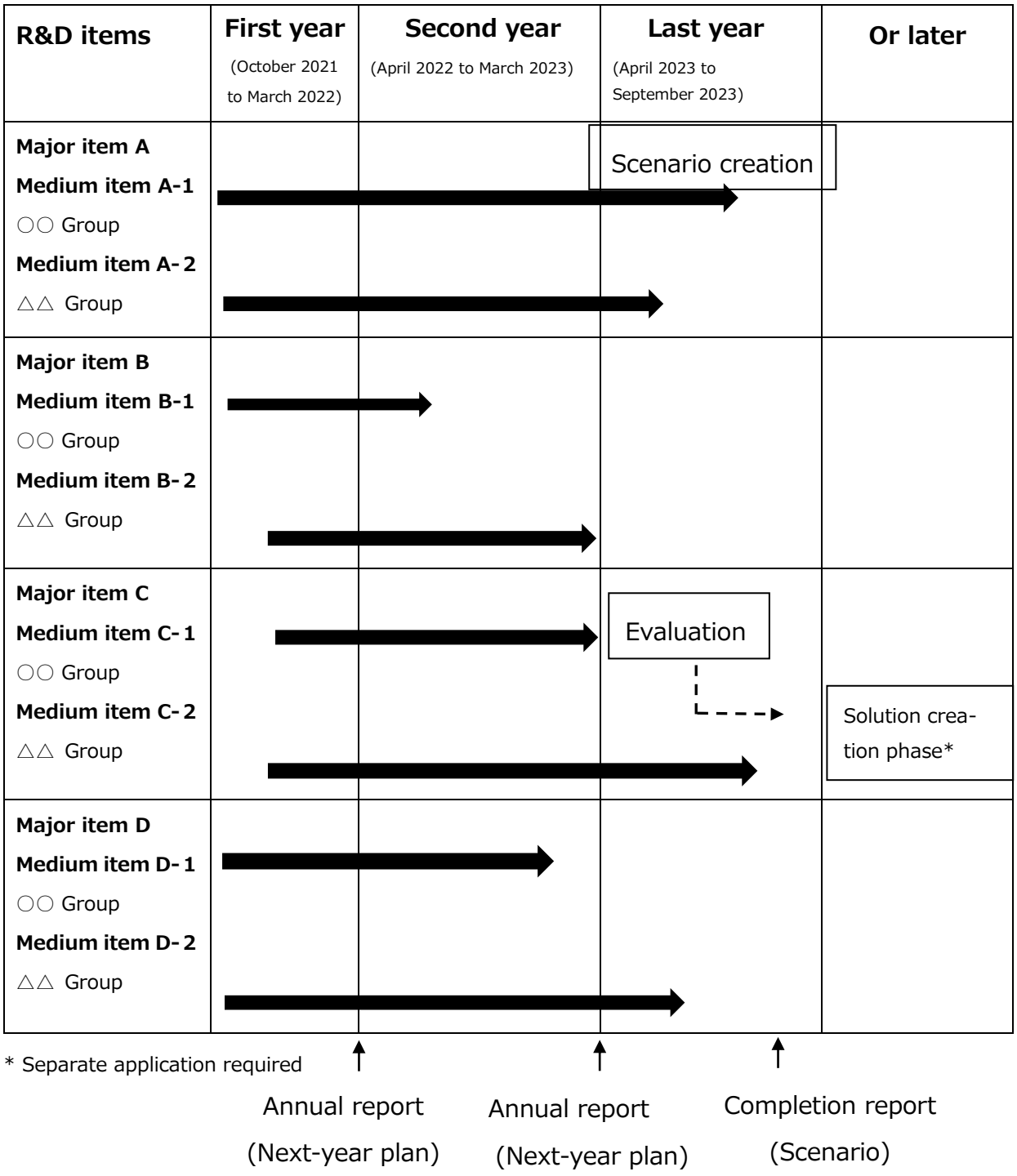
Bibliography	
Relationship with principal investigator (collaborator)	

Outline of technology seeds	・Please describe the outline of technology seeds. <Point> ・Please write in plain text so that non-experts can understand. ・If necessary, you may use charts. ・If you have experience in prototype trial production or field testing, please describe such.

2021 [Scenario] Form 3 **Plans of R&D project**

・Please complete within one sheet.

The gray shaded areas are a note on entry. Please delete them when submitting.



* Separate application required

The description in the plan table is an example.

Please draw up a plan table (outline) as above, taking into account the background and the goals during the period in which you will receive R&D support. The major items should be the same as the implementation items described in “Goals and achievements during the period” of “Form 1 Proposal.”

Point

- Please describe the main plan in consideration of PDCA (especially the timing, viewpoint, method, etc. of C (Check)) and KPI (easy-to-understand index for measuring the effect).
- Please create a schedule that considers the progress of your activities, rather than dividing them into quarters, first and second half, or fiscal years.
- Please enter specific milestones (timing, KPI, etc.) with an emphasis on the scenario creation period. Your plan should incorporate a vision for achieving the SDGs, the creation of solutions beyond that vision, and consider what will happen after the completion of the project.
- After the start of R&D (October 2021 or later), a Program Supervisor, etc., will promptly make an R&D location visit (site visit). Please describe the ideal timing for such a site visit (about once or twice a year) in the plan table.

  In the event of an unavoidable event such as the spread of COVID-19 or a natural disaster, the site visit may be postponed or implemented by alternative means such as holding it online.

2021 [Scenario] Form 3 **Plans of R&D project (2)**

(Please complete within two sheets.)

The gray shaded area shows instructions. Please delete when submitting.

2. Explanation of the plan table

- Please describe the details of the implementation items (major and medium) shown in the plan table of the R&D project plan (1) so that we can understand the consistency with the financial plan.
- For each implementation item, please describe the entity working on R&D (“Principal Investigator,” “Collaborator,” “Coordinator,” “Others (name),” etc.).
- Please specify the timing of the milestones for scenario creation and future solution creation, and explain them as quantitatively as possible.
- Please describe R&D plans and systems that enable specific players (“representatives of parties working on social issues,” etc.) to continue operations even after project completion.
- After clarifying the value created by this proposal, please describe the specific goals and PDCA, KPI, etc. to reach them.

2021 [Scenario] Form 3 **Plans of R&D project (3)**

The gray shaded area shows instructions. Please delete when submitting.

1. Budget plan (Please complete within one sheet.)

Unit: thousand yen

		First year (October 2021 to March 2022)	Second year (April 2022 to March 2023)	Last year (April 2023 to September 2023)	Total
Research and Development Budget (Direct Costs)	Expenses for goods				
	Travel expenses				
	Personnel expenses and honoraria				
	Other				
Total					

Description of main cost items:

- Please explain the purpose of use of the main cost items (unit: 1,000 yen). In particular, please describe the purpose for items that account for a large proportion of the total expenses so that we can understand the necessity for R&D activities.
- In FY2021, please allocate the Research and Development Budget according to the R&D period. Note that the R&D period is until September 2023.
- Indirect expenses are, in principle, limited to 30% of direct expenses. Descriptions in this table are not necessary.

- Please refer to “5.5 Research and Development Budget” for details on allowable expense item spending.

2021 [Scenario] Form 3 **Plans of R&D project (3)**

(Please put 2 and 3 on one sheet.)

2. Breakdown of R&D Budget (Direct Costs) (FY2021)

	Expense item	Product name	Calculation basis (unit price, number, etc.)	Approximate amount (thousand yen)
Research institution name	Expenses for goods Travel expenses Personnel expenses and honoraria Other	Software Domestic business trip Technical assistance	@16,000 × 1 pc @20,000 × 10 times @1,000 yen/hour × 6 hours/day × 20 days/month × 6 months	16 200 720
Research institution name	Expenses for goods Travel expenses Personnel expenses and honoraria Other	Software Domestic business trip Technical assistance	@16,000 × 1 pc @20,000 × 10 times @1,000 yen/hour × 6 hours/day × 20 days/month × 6 months	16 200 720

For the main uses of the Research and Development Budget for FY2021 (6 months), please enter the breakdown of the budget for each participating institution (contract-planned institution) that requires allocation of budget from JST.

* JST is conducting a preliminary survey to conclude a research agreement in parallel with the selection of proposed projects. It is possible to conclude an agreement after adoption with an institution not listed as a contract-planned institution for FY2021 in this section; however, the preliminary survey may not be in time for the start of research and the agreement conclusion with that institution may be delayed. Note that the preliminary survey results for the agreement do not affect the progress and results of the proposed project selection.

3. Remarks

- Please list other items that should be noted in terms of costs.

2021 [Scenario] Form 4 **Organization structure of R&D project (1)**

The gray shaded area shows instructions. Please delete when submitting.

1. Principal Investigator and Collaborator (Please complete within two sheets.)

(1) Principal Investigator　Name:

Biography of Principal Investigator:

・To be used as a basis for judging whether or not he/she has the necessary and sufficient experience to promote R&D.

(2) Collaborator　Name:

Biography of Collaborator:

・To be used as a basis for judging whether or not he/she has the necessary and sufficient experience to promote R&D.

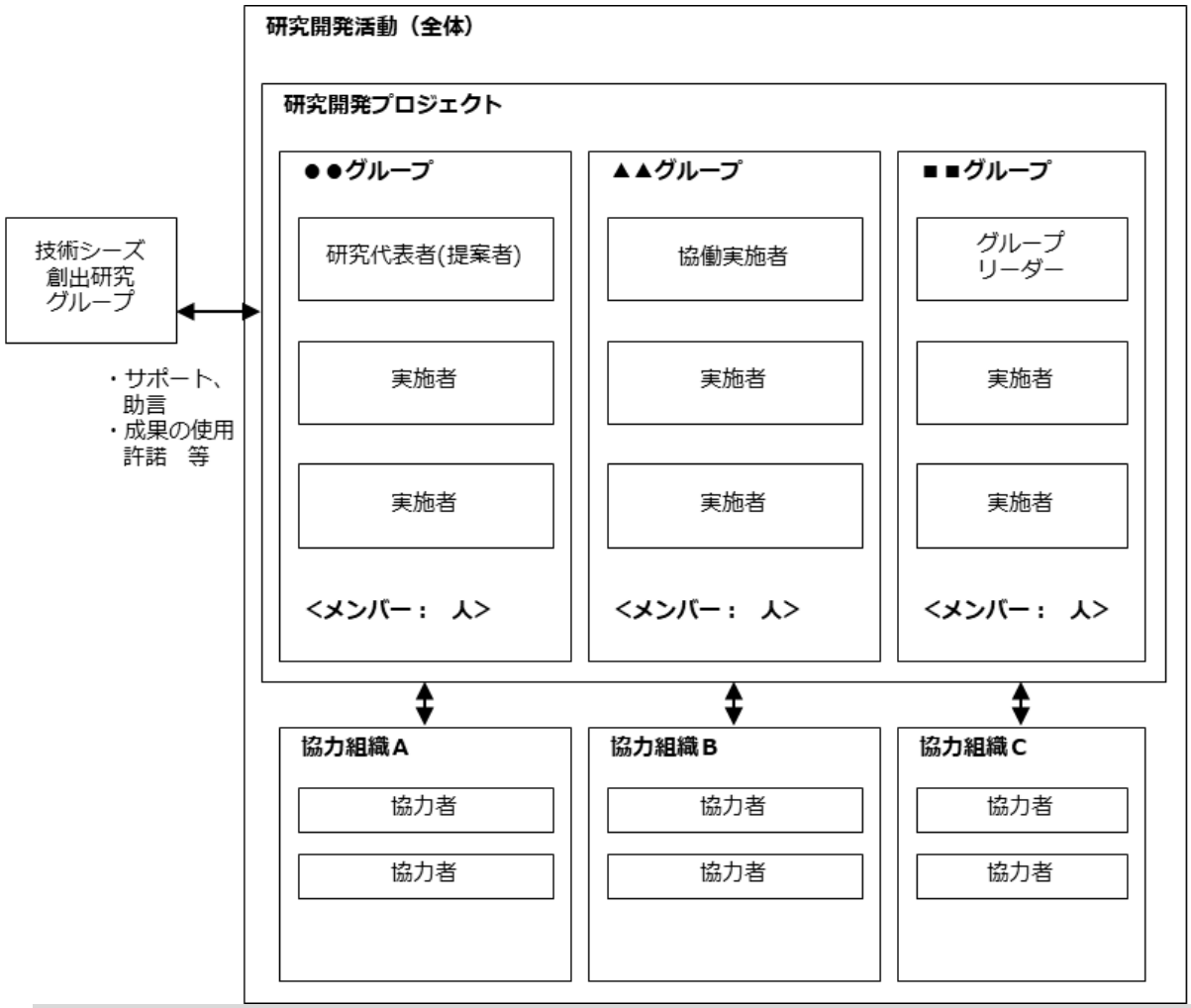
(3) Previous Relationship between Principal Investigator and Collaborator

・Please describe joint activity achievements between the Principal Investigator and Collaborator.

2021 [Scenario] Form 4 **Organization structure of R&D project (2)**

The gray shaded area shows instructions. Please delete when submitting.

2. R&D project organization chart (Please complete on one sheet.)



- Please create an organization chart of the entire project, referring to the above figure.
- Also, refer to “Chapter 5 Promotion of R&D in Science and Technology for Society” and “Chapter 8 Q&A on Call for Proposals.”
- If the Principal Investigator also serves as Collaborator, delete the relevant group. In that case, please also refer to “4.5.2 Requirements for Proposers” and “Chapter 8 Q&A on Call for Proposals.”

2021 [Scenario] Form 4 **Organization structure of R&D project (2)**

3. Positioning of R&D organization (Please complete on one sheet.)

- Please explain the position of each group and organization in the overall organization involved in R&D.
- If a person belonging to an overseas institution participates in the project as the Lead Implementer based in the overseas institution, please state the reason (refer to “5.10 When a Person Belonging to an Overseas Institution Participates as the Lead Implementer” and “Chapter 8 Q&A on Call for Proposals”).
- Please also explain the network building and activity status of stakeholders who engage in dialogue and collaboration.

2021 [Scenario] Form 5 **Other Funding Support**

The gray shaded area shows instructions. Please delete when submitting.

1． Support received under other systems

- * For the national competitive funding system or other research grants (including private foundations and overseas organizations) that you are currently receiving or applying for, please enter the research project title, research period, role, research budget received, and efforts, etc. per research project.
- If you are in the process of applying, please specify “Applying” in the project name column. If the application result is decided and you have not started receiving it, please specify “Scheduled to receive.”

Name of Principal Investigator (Proposer):

Name of support	Project name	Period (fiscal year)	R&D budget (direct costs)		Role (representative/sharer)	Effort (%)
Solution-Driven Co-creative R&D Program for SDGs (Scenario creation phase)	(This proposal)	2021 to 2023	Overall period	9 million yen	Principal Investigator	30
			FY2021	2 million yen		
			FY2022	5 million yen		
			FY2023	2 million yen		
Grants-in-Aid for Scientific Research (B)	○○○○○○○○○○○○××	2021 to 2023	Overall pe	6 million yen	Representative	10
			FY2021	2 million yen		
			FY2022	2 million yen		
			FY2023	2 million yen		
(Applying) Grant-in-aid by ○○ Foundation	○○○○○○○○○○○○	2021	Overall pe	1 million yen	Sharer	5
			FY2021	1 million yen		
			FY2022	0 yen		
			FY2023	0 yen		

Collaborator (Proposer) Name:

Name of support	Project name	Period (fiscal	R&D budget (direct costs)	Role (representative/sharer)	Effort (%)

		year)			
Solution-Driven Co-creative R&D Program for SDGs (Scenario creation phase)	(This proposal)	2021 to 2023	Overall period 3,000 yen FY2021 1,000 yen FY2022 1,000 yen FY2023 1,000 yen	Collaborator	30
Grants-in-Aid for Scientific Research (B)	○○○○○○○○○○○○	2021 to 2023	Overall period 6,000 yen FY2021 2,000 yen FY2022 2,000 yen FY2023 2,000 yen	Representative	10
(Applying) Grant-in-aid by ○○ Foundation	○○○○○○○○○○○○	2021	Overall period 1,000 yen FY2021 700 yen FY2022 300 yen	Sharer	5

2． Support received under other systems and positioning of this proposal

- Please explain the relationship between support under other systems that are being adopted or applied for and this program, and the allocation.
- If it is related to this program, please include the suspended support.
- Please enter the program name, system name, and role such as representative/sharer.
- If members are duplicated, please enter such.

[Solution creation phase]

*** Please download the description format (Word version) from the JST site or e-Rad site.**

2021 [Scenario] Form 1 **Outline of proposal** *Please describe in 3–4 sheets in an easy-to-understand manner.

The gray shaded area shows instructions. Please delete when submitting.

Project Name	Enter the project name (R&D project name entered in e-Rad) (about 30 characters)	
R&D period	(　　) years (maximum 3 years)	
Principal investigator name	(Phonetic reading (kana)	
	(Chinese characters, etc.)	
Date of birth (Western calendar)		
Affiliated institution		
Department		
Job title		
Collaborator name	(Phonetic reading (kana)	
	(Chinese characters, etc.)	
Date of birth (Western calendar)		
Affiliated institution		
Department		
Job title		
Address	〒	
Telephone		
Emergency contact	(Mobile phone, etc.)	
E-mail		
R&D activity / Social issues and objectives	Please summarize each item in about 200 characters. (1) Outline of social issues to be solved (2) The ideal society that we should aim for by 2030 (vision) (3) Reasons for wishing to tackle social issues using the proposed technology seeds	

		Please make “a representative of parties working on social issues” to describe in (3).				
		(4) Keywords (free entry)				
	Method	Goals and achievements during the period	(1) Outline of goals and methods for achieving them (refer to Form 2 for the details of the underlying R&D results) ・Please describe your goals during the period of receiving R&D support. ・Please list the specific action items and the period/target (people, organization, area, etc.) for each action item regarding how to achieve the goal (including the content of verification tests). ・Please explain existing competing R&D, and if there is competition, explain the difference in the R&D results that are the basis of this proposal. ・Please complete using no more than 300 characters.				
		Funding	Entire period Total amount	(thousand yen)	First year (FY2021)	(thousand yen)
			(2) Main use and amount of R&D budget (thousand yen) Please enter the estimated amount for each main business item.			
	Effect	(1) Target and beneficiaries of R&D activities Please use about 100 characters to describe the benefits brought by solving				

		social issues and what kind of cooperation is provided by people who receive benefits to solve them.
		(2) Expansion to other regions in Japan Please use about 100 characters to describe what you will do after the R&D period to expand to other areas in the country after the project is completed.
		(3) Continuity after the project is completed Please briefly describe how “a representative of parties working on social issues” will continue his/her R&D activities after the project is completed.
		(4) Role played by this program Please briefly describe the problems faced if there is no support from this program.
	Cooperating organization	・ ・ Please list the parties/organizations that will cooperate on the project.

Positive participation by young and/or female researchers

Since the beneficiaries of solving social issues are diverse, it is expected that various implementers such as young and/or female researchers also participate as R&D project implementers, and they identify bottlenecks and consider solutions in line with social conditions. In this proposal, if there are any ideas for the active participation of young and/or female researchers/implementers from the viewpoint of diversity and human resource development, please briefly summarize the contents in Form 6.

Contribution to solving social issues highlighted by the COVID-19 pandemic

Many social issues have become apparent due to the COVID-19 pandemic, and there are expectations of contributions to solving them. If there are any elements that can be contributed by implementing the project, please describe the details.

[Remarks]

Regarding the transition to the scenario creation phase in the selection process (*), please select one of the following.

If the evaluator proposes to transit the phase and continue the selection, we (would like / would not like) to transit to the scenario creation phase and continue the selection.

* For details on phase transition, refer to “4.9 Regarding the transition to the scenario creation phase in the selection process.”

2021 [Solution] Form 2 **Technology seeds that serve as the basis of the R&D project**

(Please summarize within 2 pages including this one for each technology seed. The application requirement is that you already have the technical seeds, so please describe them in a concise and easy-to-understand manner. If you have multiple seeds, please list up to 3 within 6 sheets in total.

The gray shaded area shows instructions. Please delete when submitting.

Name of technology seeds (outline, issue name)			
Researcher implementer		Researcher number	
Affiliation Post		Field of research	・Free entry
Name of public funds provided			
Report, URL, etc.	・ If there is no URL, please specify the magazine, patent, book, etc. on/in which the seeds are posted. ・ We may ask you to send a copy, etc. separately.		
Presence or absence of intellectual property rights	・ Enter the application number, etc.		
License right	・ Please indicate whether or not you have obtained a license from the owner or patent holder of the technology seeds with respect to your R&D activities, and if not, describe the prospects and progress of your efforts to do so.		
Reference			
Relationship with principal investigator			

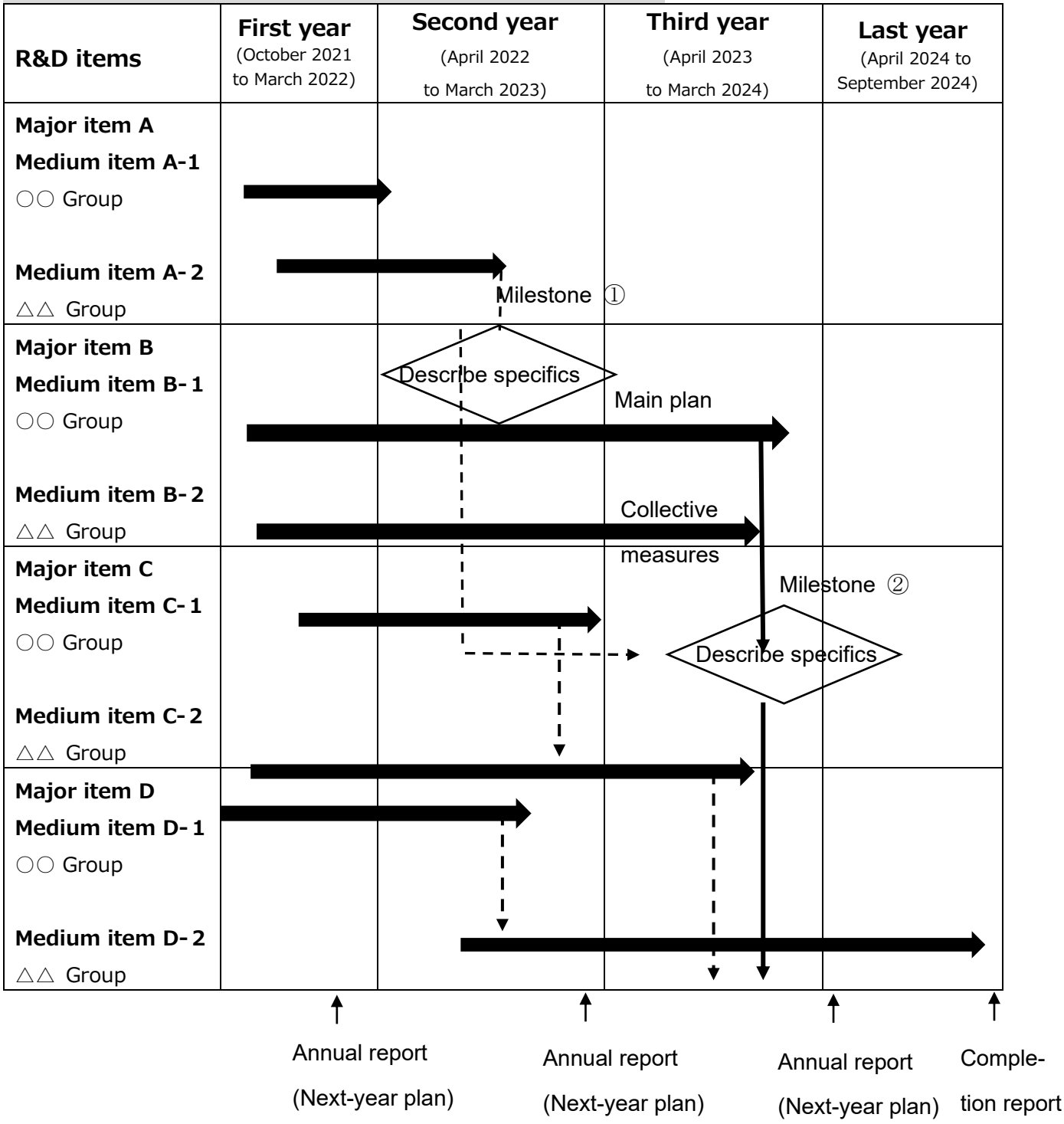
(collaborator)	
Outline of technology seeds	・Please describe the outline of technology seeds. <Point> ・Please write in plain text that non-experts can understand. ・If necessary, you may use charts. ・If you have experience in prototype trial production or field testing, please describe such.

Outline of technology seeds	Please fill in following the previous page.

2021 [Solution] Form 3 **Plans of R&D project (1)**

・Please complete within one sheet.

The gray shaded area shows instructions. Please delete when submitting.



The description in the plan table is an example.

Please draw up a plan table (outline) as above, taking into account the background and the goals during the period in which you will receive R&D support. The major items should be the same as the implementation items described in “Goals and achievements during the period” of “Form 1 Proposal.”

<Point>

- Please describe the main plan in consideration of PDCA (especially the timing, viewpoint, method, etc. of C (Check)) and KPI (easy-to-understand index for measuring the effect).
- Please create a schedule that considers the progress of your activities, rather than dividing them into quarters, first half and second half, or fiscal years.
- Please enter specific milestones (timing, KPI, etc.).
- Please describe the risk hedging strategy in case it cannot be achieved.
- After the start of R&D (October 2021 or later), a Program Supervisor will promptly conduct an R&D location visit (site visit). Please describe the ideal timing for such a site visit (about once or twice a year) in the plan table.

  In the event of an unavoidable event such as the spread of COVID-19 or a natural disaster, the site visit may be postponed or it may be implemented by alternative means such as holding it online.
- Note that the R&D period can be extended until March 2025 (end of FY2024) (however, the evaluation process will be parallel after the fall of the final year. In addition, budgetary measures for the extension will not be provided).

2021 [Solution] Form 3 **Plans of R&D project (2)**

(Please complete within two sheets.)

The gray shaded area shows instructions. Please delete when submitting.

2. Explanation of the plan table

- Please describe the details of the action items (major and medium) shown in the plan table of the R&D project plan (1) so that we can understand the consistency with the financial plan.
- For each implementation item, please describe the entity working on R&D (“Principal Investigator,” “Collaborator,” “Coordinator,” “Others (name),” etc.).
- Please specify the timing of the milestones and explain them as quantitatively as possible.
- After clarifying the value created by this proposal, please describe the specific goals and PDCA, KPI, etc. to reach them, main plan and risk hedging strategy.

2021 [Solution] Form 3 **Plans of R&D project (3)**

The gray shaded area shows instructions. Please delete when submitting.

1. Budget plan (Please complete within one sheet.)

Unit: thousand yen

		First year (October 2021 to March 2022)	Second year (April 2022 to March 2023)	Third year (April 2023 to March 2024)	Last year (April 2024 to September 2024)	Total
R&D budget (Direct costs)	Expenses for goods					
	Travel expenses					
	Personnel expenses and honoraria					
	Other					
Total						

Description of main cost items:

- Please explain the purpose of use of the main cost items (unit: 1,000 yen). In particular, please describe the purpose for items that account for a large proportion of the total expenses so that we can understand the necessity for R&D activities.
- In FY2021 and last year, please allocate Research and Development Budget according to the R&D period. Note that the R&D period can be extended until March 2025 (end of FY2024) (however, the evaluation process will be parallel after the fall of the final year. In addition, budgetary measures for the extension will not be provided).
- Indirect expenses are, in principle, limited to 30% of direct expenses. A description in this table is not necessary.

- Please refer to “5.5 Research and Development Budget” for details on allowable expense item spending.

2021 [Solution] Form 3 **Plans of R&D project (3)**

(Please complete 2. and 3. together within one sheet.)

The gray shaded area shows instructions. Please delete when submitting.

2. Breakdown of R&D Budget (Direct Costs) (FY2021)

	Expense item	Product name	Calculation basis (unit price, number, etc.)	Approximate amount (thousand yen)
Research institution name	Expenses for goods Travel expenses Personnel expenses and honoraria Other	Software Domestic business trip Technical assistance	@16,000 × 1 pc @20,000 × 10 times @1,000 yen/hour × 6 hours/day × 20 days/month × 6 months	16 200 720
Research institution name	Expenses for goods Travel expenses Personnel expenses and honoraria Other	Software Domestic business trip Technical assistance	@16,000 × 1 pc @20,000 × 10 times @1,000 yen/hour × 6 hours/day × 20 days/month × 6 months	16 200 720

For the main uses of the Research and Development Budget for FY2021 (6 months), please

enter the breakdown for each participating institution (contract-planned institution) that requires budget allocation from JST.

* JST is conducting a preliminary survey to conclude a research agreement in parallel with the selection of proposed projects. It is possible to conclude an agreement after adoption with an institution not listed as a contract-planned institution for FY2021 in this section, but the preliminary survey may not be in time for the start of research and the agreement conclusion with that institution may be delayed. Note that the preliminary survey results for the agreement do not affect the progress and results of the selection of the proposed project.

3. Remarks

- Please fill in other items that should be noted in terms of costs.

2021 [Solution] Form 4 **Organization structure of R&D project (1)**

The gray shaded area shows instructions. Please delete when submitting.

1. Principal Investigator and Collaborator (Please complete within two sheets.)

(1) Principal Investigator Name:

Biography of Principal Investigator:

・To be used as a basis for judging whether or not he/she has the necessary and sufficient experience to promote R&D.

(2) Collaborator Name:

Biography of Collaborator:

・To be used as a basis for judging whether or not he/she has the necessary and sufficient experience to promote R&D.

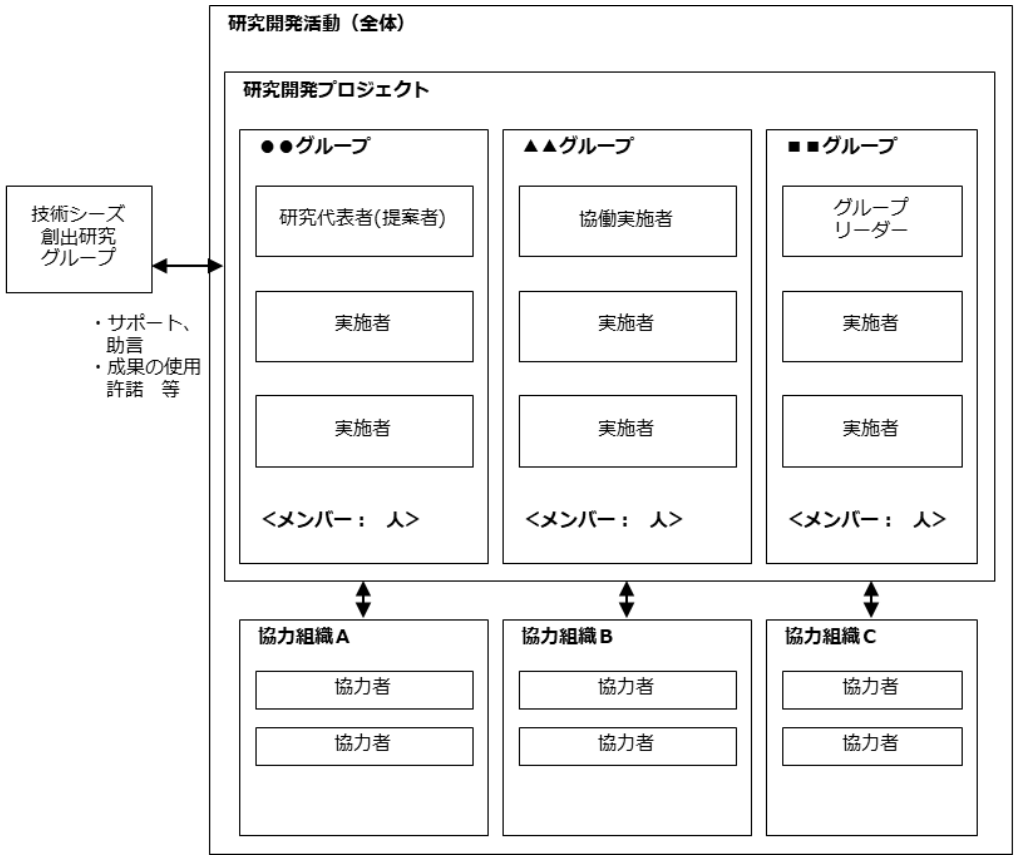
(3) Previous Relationship between Principal Investigator and Collaborator

・Please describe the joint activity achievements between the Principal Investigator and the Collaborator.

2021 [Solution] Form 4 **Organization structure of R&D project (2)**

The gray shaded area shows instructions. Please delete when submitting.

2. R&D project organization chart (Please complete within one sheet.)



- Please create an organization chart of the entire project, referring to the above figure.
- If the Principal Investigator also serves as a Collaborator, delete the relevant group. In that case, please also refer to “4.5.2 Requirements for Proposers” and “Chapter 8 Q&A on Call for Proposals.”
- Please fill in the research group so that we know who created the technology seeds that underlie your R&D. If the person in question and the person in the project are the same, enter the same name in the research group item.
- Also, refer to “Chapter 5 Promotion of R&D in Science and Technology for Society”

and “Chapter 8 Q&A on Call for Proposals.”

3. Positioning of R&D organization (Please complete within one sheet.)

- Please explain the position of each group and organization in the overall organization involved in R&D.
- If a person belonging to an overseas institution participates in the project as the Lead Implementer based at the overseas institution, please state the reason (refer to “5.10 When a Person Belonging to an Overseas Institution Participates as the Lead Implementer” and “Chapter 8 Q&A on Call for Proposals”).
- Please also explain the status of network construction and coordination activities.

2021 [Solution] Form 5 **Other Funding Support**

The gray shaded area shows instructions. Please delete when submitting.

1. Support received under other systems

(1) Principal Investigator (Proposer) Name:

Name of support	Project name	Period (fiscal year)	R&D budget (direct costs)		Role (representative / sharer)	Effort (%)
Solution-Driven Co-creative R&D Program for SDGs (Solution creation phase)	(This proposal)	2021 to 2024	Overall period	28,000 yen	Principal Investigator	30
			FY2021	4,500 yen		
			FY2022	10,000 yen		
			FY2023	8,000 yen		
			FY2024	5,500 yen		
Grants-in-Aid for Scientific Research (B)	○○○○○○○○○○○○	2021 to 2023	Overall period	6,000 yen	Representative	10
			FY2021	2,000 yen		
			FY2022	2,000 yen		
			FY2023	2,000 yen		
			FY2024	0 yen		
(Applying) Grant-in-aid by ○○ Foundation	○○○○○○○○○○○○	2021	Overall period	1,000 yen	Sharer	5
			FY2021	1,000 yen		
			FY2022	0 yen		
			FY2023	0 yen		
			FY2024	0 yen		

- * For any national competitive fund system or other research grant (including private and overseas organizations) that the Principal Investigator is currently receiving or applying for, please enter the research project title, research period, role, research budget received, and effort, etc. per research project, including this program.
- If you are in the process of applying, please specify “Applying” in the project name column.

(2) Collaborator (Proposer) Name:

Name of support	Project name	Period (fiscal year)	R&D budget (direct costs)		Role (representative /sharer)	Effort (%)
Solution-Driven Co-creative R&D Program for SDGs (Solution creation phase)	(This proposal)	2021 to 2024	Overall period	28,000 yen	Collaborator	30
			FY2021	4,500 yen		
			FY2022	10,000 yen		
			FY2023	8,000 yen		
			FY2024	5,500 yen		
Grants-in-Aid for Scientific Research (B)	○○○○○○○○○○○○	2021 to 2023	Overall period	6,000 yen	Representative	10
			FY2021	2,000 yen		
			FY2022	2,000 yen		
			FY2023	2,000 yen		
			FY2024	0 yen		
(Applying) Grant-in-aid by ○○ Foundation	○○○○○○○○○○○○	2021	Overall period	1,000 yen	Sharer	5
			FY2021	1,000 yen		
			FY2022	0 yen		
			FY2023	0 yen		
			FY2024	0 yen		

- * For any national competitive fund system or other research grant (including private and overseas organizations) that the Collaborator is currently receiving or applying for, please enter the research project title, research period, role, research budget received, and effort, etc. per research project, including this program.
- If you are in the process of applying, please specify “Applying” in the project name column.

2. Support received under other systems and positioning of this proposal

- Please explain the relationship between the support under other systems that are being adopted or applied for and the proposal.
- If it is related to this program, please include any suspended support.
- Please enter program name, system name, and the role such as

representative/sharer.

- If members are duplicated, please enter such.

In Form 6, please describe the vision (social image) to be realized by 2030, the roadmap to reach it, and the business concept (scenario) to achieve the SDGs by 2030 by expanding to areas other than the those where the verification test is conducted.

The overall picture of the scenario is shown in the outline diagram below. For each element composing each scenario, please specify in each item of Form 6 presented in the figure.

* This page is a supplementary explanation for creating a proposal. Please delete when submitting the proposal.

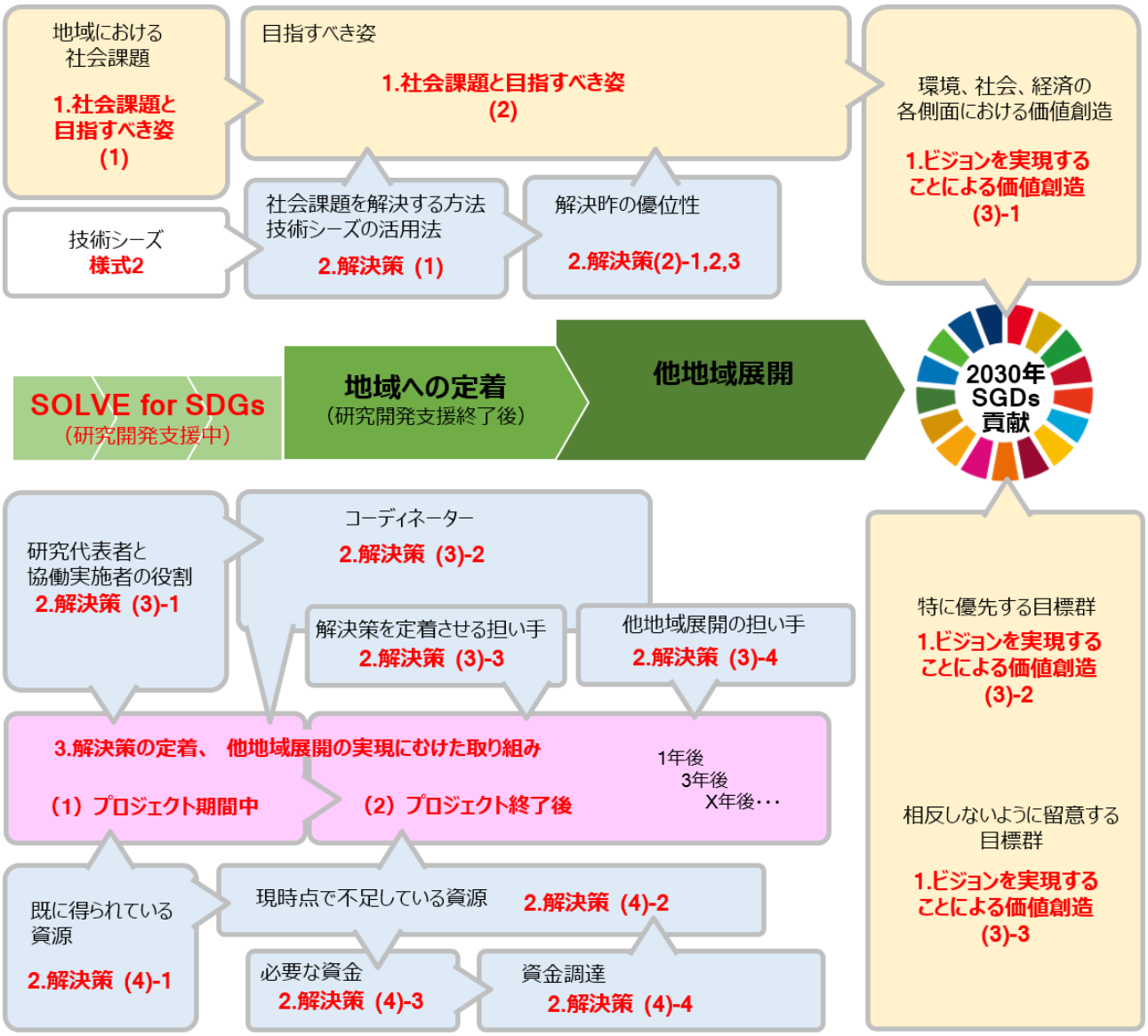


Figure: Outline of overall structure of business concept (scenario)

Business concept (scenario) (Please do not exceed 15 sheets in Form 6 as a whole)

The gray shaded area shows instructions. Please delete when submitting.

1. Social issues and the ideal that we should aim for (vision)

(1) Social issues in the region

Regarding the social issues in the area where R&D is implemented, please describe in detail **the cause and background of the social issues in the area, the bottleneck, and what should be addressed.** In addition, as the area where this program is implemented, in addition to the reason that it is the location of a university, etc., and that the initiative is being implemented in advance, please also describe **the reason that it is effective as "the area where the verification test is conducted" or "model area for expansion to other areas."**

(2) The ideal that we should aim for (vision)

Please describe in detail the unique vision of society as described by the "representatives of parties working on social issues (Collaborator)."

Please specifically describe **who or which organization will realize co-creatively a social image, in collaboration with which organization, in which area, for what kind of beneficiary, and by providing what.**

(3) Value creation by realizing the vision

(3) -1 Value creation in each aspect of environment, society and economy

Please describe the value created by realizing your vision from an environmental, social and economic perspective. This may overlap with the description given in "(2) The ideal that we should aim for (vision)."

In addition, please describe which of the 17 goals and 169 targets of the SDGs you will prioritize in your efforts to create value (from the perspective of simultaneously resolving multiple issues, in accordance with the purpose of the SDGs), and which of the 17 goals and 169 targets of the SDGs you will keep in mind in order to avoid conflicts.

	Value created	**SDG goals and**	**SDG goals and**

		targets to prioritize	targets to keep in mind to avoid conflicts
Environmental aspect	For example, energy saving, 3Rs (reduce, reuse, recycle), water and atmospheric environment, etc. are assumed.		
Social aspect	For example, disaster prevention, health, response to the declining birthrate and aging population, social solidarity, etc. are assumed.		
Economical aspect	For example, employment creation, new industry creation, reduction of social costs, etc. are assumed.		

(3) -2 Goals that have particular priority

Many of the 17 goals and 169 targets of the SDGs are interrelated, **and an integrated approach that combines goals and targets is needed**.

Based on the "SDGs goals and targets to prioritize" described in "(3)-1 Value creation in each aspect of environment, society and economy" above, please describe the group of goals that you will place particular priority on and make use of in order to realize your vision. You can use the target as well as the goal. In describing, please take into consideration the perspective of aiming for simultaneous resolution of multiple issues based on the purpose of the SDGs.

(3) -3 Goals to keep in mind to avoid conflicts

Based on the "SDGs goals and targets to keep in mind conflicts" described in "(3)-1 Value creation in each aspect of environment, society and economy" above, please describe the group of goals that for which you have concerns that realizing your vision may produce conflicts. Also, **please discuss**

measures to avoid conflicts (trade-offs) and describe the Proposer's ideas. You can use the target as well as the goal.

2. Solution

(1) How to solve social issues and how to utilize technology seeds

Please describe how you are working to achieve your vision. In addition, please describe how the technology seeds are utilized.

(2) Advantage of the solution

(2) -1 Advantage from the beneficiary side

Why should beneficiaries choose the proposer's solution, and not others? Please describe what is different from others. Please show the advantage in terms of solution effectiveness, not uniqueness of technology seeds.

(2) -2 Grounds for advantage

Please show the advantage over other initiatives. If there is a lack of grounds at this time, please state how you plan to show such advantage in the future.

(2) -3 Possibility of expansion

Please indicate that the content of the differentiation does not apply only to a specific area, but that it may be disseminated and expanded nationwide and even in other regions, including overseas, taking into account regional characteristics.

(3) Organizational structure for implementing and establishing solutions

(3) -1 Roles of Principal Investigator and Collaborators

How will the Principal Investigator and Collaborators share roles during and after the R&D project? What responsibilities do the Principal Investigator and Collaborators bear?

(3) -2 Coordinator

Please specify who will coordinate between stakeholders, including beneficiaries, and who will conduct coordination activity to contribute to the promotion of R&D during and after the R&D project. In principle, it is not assumed that the Principal Investigator or Collaborator will serve as Coordinator. However, it is permitted as an exception if it is optimal for the Principal Investigator or Collaborator to serve as Coordinator.

(3) -3 Party who establishes a solution

In the area where you are currently working, please specify a party who will establish the solution after the end of the R&D project period. In principle, it is not assumed that the Principal Investigator or Collaborator will serve as Coordinator. However, it is permitted as an exception if it is optimal for the Principal Investigator or Collaborator to serve as Coordinator.

(3) -4 Party who expands to other area

Please specify a party who will expand the solution to other areas during and after the end of the R&D project period. In principle, it is not assumed that the Principal Investigator or Collaborator will serve as Coordinator. However, it is permitted as an exception if it is optimal for the Principal Investigator or Collaborator to serve as Coordinator.

(3) -5 Positive participation by young and/or female researchers (as needed)

Since the beneficiaries of solving social issues are diverse, it is expected that various implementers such as young and/or female researchers also participate as R&D project implementers, and identify bottlenecks and consider solutions in line with social conditions. In this proposal, if there are any ideas for the active participation of young and/or female researchers/implementers from the viewpoint of diversity and human resource development, please describe such.

(4) Resources for implementing solutions

(4) -1 Resources already obtained

Please describe what kind of resources you have already obtained and their utilization. As examples of resources, human resources, implementation systems, facilities, equipment, activity funds, intellectual property and information, etc. are assumed.

(4) -2 Resources currently in short supply

Please describe what resources are in short supply and which you want to obtain, and how to utilize them.

(4) -3 Required funds

Please describe the funds required to establish the solution in the area you are currently working on, including the breakdown. An approximate value is acceptable.

(4) -4 Financing

Please describe how and from whom you expect to raise funds during and after the R&D project

period in order to ensure that your solution becomes established in the area where you are currently working.

3. Efforts to establish solutions and realize expansion to other areas (ultimate goal)

・It is expected that, by implementing the project plan created by the Principal Investigator and the Collaborator in the solution creation phase, the solution will become established and spread to other areas after the project period is over. Describe in detail how you will reach this stage and what you expect to achieve by following the process.

（1） Initiatives during project period

・Please describe in detail **what and to what extent you will achieve by the end of the R&D project** in the solution creation phase.

・Specifically, please describe **what will be implemented, by what organization, with the cooperation of which organizations, at which sites, for which beneficiaries, and how**.

・**If you are able to set quantitative targets, please provide them where possible**.

(2) Initiatives after the end of project period

・Please describe in detail **what measures you will take to ensure that, after the completion of the R&D project in the solution creation phase, your solution will become established and expand to other areas.**

・Specifically, please describe **what will be implemented, by who, by what organization, with the cooperation of which organizations, at which sites, for which beneficiaries, how it will be implemented, what kind of social institutionalization you would like to achieve, and what will be done by when**.

First year following the end of the R&D project
① Initiatives
XXXXXXXXXXXXXXXXXXXXX
② What can be expected from the above initiatives
XXXXXXXXXXXXXXXXXXXXX

Third year following the end of the R&D project
① Initiatives
XXXXXXXXXXXXXXXXXXXXX

② What can be expected from the above initiatives

XXXXXXXXXXXXXXXXXXXXX

●th year following the end of R&D project

① Initiatives

XXXXXXXXXXXXXXXXXXXXX

② What can be expected from the above initiatives

XXXXXXXXXXXXXXXXXXXXX

Chapter 10 References

(Related websites)

■United Nations Information Centre

2030 Agenda

https://www.unic.or.jp/activities/economic_social_development/sustainable_development/2030agenda/

■Japan Business Federation

https://www.keidanrensdgs.com/

■Ministry of Education, Culture, Sports, Science and Technology (MEXT)

http://www.mext.go.jp/b_menu/shingi/gijyutu/gijyutu2/092/houkoku/1410641.htm

http://www.mext.go.jp/a_menu/kagaku/kokusai/sdgs/1408737.htm

http://www.mext.go.jp/a_menu/kagaku/kokusai/sdgs/1408738.htm

■JST

Science, Technology and Innovation (STI) for implementing the SDGs

https://www.jst.go.jp/sdgs/actionplan/index.html

【Inquiries】

Questions concerning the call for R&D proposal are accepted by e-mail.

boshusolve@jst.go.jp

The latest information will be posted on the following RISTEX Website.

https://www.jst.go.jp/ristex/proposal/

https://www.jst.go.jp/ristex/solve/index.html

Research Institute of Science and Technology for Society (RISTEX)

Japan Science and Technology Agency (JST)

Address: Science Plaza, 5-3 Yonbancho, Chiyoda-ku, Tokyo 102-8666, Japan

Tel :　RISTEX: 03-5214-0133

“Science and Society” Promotion Dept.: 03-5214-7493

(Office hours: 10:00～12:00・13:00～17:00／Excepted on Saturdays, Sundays, and holidays)

【Questions concerning the Cross-ministerial R&D Management System (e-Rad)】

e-Rad helpdesk: 0570-066-877 (Navi Dial)

Office hours: 9:00～18:00

※Excepted on Saturdays, Sundays, holidays and the year-end and new-year period