(Form 1) R&D proposal “Small-start Type” called for in FY2017

|  |  |  |
| --- | --- | --- |
| Prioritized theme |  | |
| Title of R&D project |  | |
| R&D period  \*(1) = (2) + (3) | (1) total period: Month, 2017 – Month, Year ( years) | |
| (2) Feasibility study: Month, 2017- Month, Year ( years) | |
| (3) R&D project: Month, Year – Month, Year ( years) | |
| R&D Budget  \*(1) = (2) + (3)  Omit decimal point | (1) total R&D budget for whole period ( million yen) | |
| (2) total R&D budget for feasibilitystudy ( million yen) | |
| (3) total R&D budget for R&D project ( million yen) | |
|  |  | |
| Name of R&D Project Leader | Initial |  |
| Last | \*same as above if same Principal Investigator |
| Affiliated Institution, Department,  Title |  | |
| Effort for this FY | This fiscal year: % | |
| Conflicts of interest with PO  \*check | Conflict of interest with R&D supervisor (PO): □ Yes □ No  \*If “Yes”, describe contents in Form 3 “6. other” | |
| Researcher number | \*Enter the 8-digit “e-Rad” login ID number which is provided by registering researcher information on the The Cross-ministerial Research and Development Management System (e-Rad) | |
| Information on Principal Investigator | URL:  author ID:  \*URL if website (lab website, researchmap page) available for information on Project Leader, or ID if ORCHID ID, Researcher ID, or SCOPUS author ID is known | |

(Form 2) R&D Project Description

\*Delete guidelines in blue letters when completing this form.

\*Be sure to check the policies of the R&D supervisors for each area and prioritized themes, which are described in the application information. See “4.1.3, Selection Perspective” and “Chapter V, FY2017 Open Call Themes”.

1. POC to be achieved by this R&D project

\*Provide simple and clear descriptions of the POC to be reached by these R&D projects during the small-start-type research phase and the full-scale research phase.

2. Reasons for setting the particular POC

\*Take into account the following when describing why you set a particular POC as a goal:

- What are the social and industrial problems relating to the prioritized theme for which immediate actions should be made to determine a solution? Also provide how and why these problems were chosen.

- Values, i.e. social and economic impacts, that are believed to create both in Japan and overseas when these problems were solved (social implementation of technologies that allow the POC to be reached)

\*Prepare a separate compact summary of the contents of “1. POC to be reached by these R&D projects” and this description, not exceeding 300 words, and include this summary in the “research objective” section of “common provisions” on e-Rad.

3. Measures necessary for reaching POC

\*Clearly describe the background and any problems that may hinder you in reaching the stipulated POC. Describe necessary measures that will be taken toward realizing the POC during both the small-start-type research phase and the full-scale research phase. Also, describe the originality, inherent challenges, and effectiveness of your proposal.

\*If possible, describe ideas for developing the research results beyond the POC (business model, distribution to private firms) and their social implementation (optional). (These can be subjects approached during research into the small-start-type, even if they are not yet concrete ideas. In such a case, describe the preparatory situation using form 3.1).

\*In the case of a proposal relating to the “realization of a low carbon society, a global issue” area, quantitatively show the degree to which the technology projects to be approached will contribute to the realization of a low carbon society by approximately 2050.

*- Do not exceed two A4-size sheets (no exceptions) -*

(Form 3) R&D plan of Feasibility Study

\*Delete guidelines in blue letters when completing this form.

1. Preparatory situation at the beginning of full-scale research

\*Provide a concrete description of the following, including the preparatory situation for full-scale research and R&D trends in Japan and overseas.

- Evidence-based verification of social and industrial impacts, as well as social and industrial needs

- Technology issues and understanding of their difficulties and feasibility

- Your understanding of the problems relating to the social implementation of the proposal

- Details of the full-scale research plan (team to conduct research, budget, milestones)

- Details of activities to be taken, keeping in mind the development of research results (business model, passing research results to private firms, etc.)

2. Matters to be achieved in small-start-type research

\*On the basis of 1., clearly describe, within 300 words, matters to be achieved during the small-start-type research phase.

\*copy this description and paste it into the “research outline” section of e-Rad’s “common provisions.”

3. Contents of the execution of small-start-type research

4. Team to conduct small-start-type research

(1) Description of the R&D team

\*Provide a description of your research team.

(Make corrections as appropriate in order to ensure that your team is capable of fulfilling the concept and plan of the proposed small-start-type research. The illustration below is for reference.)

(2) Project Leader’s Group (example)

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Principal Investigator | name of organization1) | title | effort2) |
| OO OO | OOuniversity  graduate school OOdepartment OOmajor | professor | 40% |
| Name of R&D  Participant3,4)) | affiliation (omit if same as above5 | title | |
| OO OO |  | professor | |
| OO OO |  | associate professor | |
| OO OO |  | lecturer | |
| XX XX | XX Co., Ltd., XX Institute | chief researche | |

1) If the organization you are currently affiliated with differs from the organization at which you propose to conduct the adopted research, describe the latter in the column relating to special matters and inform us of the reason you have chosen this institution.

2) In the “effort” column, enter the distribution percentages (%) for the time required for the research relative to 100%, which represents the total work hours (including not only research activities but also education and therapeutic activities) of researchers in a year.

3) Fully describe the roles to be played by the members of the research group.

4) Add necessary information concerning the researchers participating in R&D. A description such as “X researcher” is acceptable in cases where the names of researchers are not known at the time the proposal is submitted.

5) When multiple organizations are required to research a particular item, the addition of members from different organizations as participants in the R&D process is acceptable.

(2-1) Role of the group in relation to generating R&D ideas

(2-2) Special matters

\*Give details of situations (background, reasons, etc.) when work hours (effort) is necessary for completing special tasks (such as managers including the head of research departments or chairmen of academic associations in the process).

(3) Joint R&D Group A

* When joint research groups (joint research organizations) outside of the organization the Principal Investigator is affiliated with are required, describe each group separately.
* It is possible to include members of various research organizations affiliated with industries, universities, and the government in joint research groups.
* There is no limit to the number of joint research groups; however, forming an optimal team for pursuing the Principal Investigator’s research idea should be the priority.
* Add or delete tables depending on the number of research groups involved.
* It is not mandatory to add members of joint research groups to research teams.

**Joint R&D group A** (for example)

|  |  |  |  |
| --- | --- | --- | --- |
| name of main joint researcher | name of joint research organization1) | title | effort2) |
| OO OO | OOInstitute OODepartment OOteam | team leader | 10% |
| Researcher number6): 12345678  Research organization code7): 1234567890 | |
| Name of R&D Participant3,4) | affiliation (omit if same as above) | title | |
| OO OO |  | chief researcher | |
| OO OO |  | researcher | |
| Plan to employ two |  | special researcher | |
| XX XX | XX Co., Ltd. X Institute | chief researcher | |

1)-5) See previous pages.

6) Provide the eight-digit number of the main joint researcher, which was given upon registering researcher information on the R&D management system common to ministries (e-Rad).

7) Provide the codes for each affiliated research organization given by the R&D management system common to ministries (e-Rad).

(3-1) Role of groups in generating R&D ideas

(3-2) Special matters

\*Enter situations when and reasons measuring of work hours (effort) is necessary during special tasks (such as when managers, such as heads of research departments or chairmen of academic associations, are involved).

\*When adding an overseas research organization to a research team, see “(2) Requirements for a research team,” of application information, “2.2.5, Requirements for applications,” and then describe in this column the reason the inclusion of joint researchers affiliated with overseas research organizations is necessary.

(4) Other participating R&D organizations

|  |  |  |
| --- | --- | --- |
| Name of R&D  participant3,4) | affiliation | title |
| OO OO | OOInstitute OODepartment OOteam | chief researcher |
| OO OO |  | researcher |
| XX XX | XXCo.,Ltd. XXInstiture | chief researcher |

\*Private firms and universities that have not signed an R&D agreement with JST in regard to participation but that are collaborating and cooperating with research groups that have signed an R&D agreement with JST relating to participation

(4-1) Role of organizations participating in R&D ideas

(4-2) Special matters

\*When adding an overseas research organization to a research team, see “(2) Requirements for research teams” of application information “2.2.5, Requirements for application,” beforehand and describe the reason joint researchers affiliated with overseas research organizations are required.

5. The Principal Investigator’s management policies

(1) Policies for research promotion

\*Improvement, correction of proceedings, introduction of new findings and technologies, policies for developing results

(2) Policies for managing intellectual property

\*Policies for managing intellectual property should include the following:

- A basic idea of the Principal Investigator concerning how to build a management system and manage the intellectual property of the project.

- A basic description of how research results created by this research project will be grouped so that they are not considered to constitute intellectual property; in addition, a basic plan for deciding whether the results should be disclosed to the public.

- A basic plan concerning acquiring and maintaining or abandoning or transferring (including how to obtain funding) intellectual property rights during and after researching this project

6. Other

**(Common)**

\*Describe the current status of preparations and examinations as to the support measures and systems at major research organizations.

\*Describe the contents of conflicts of interests with R&D supervisors, if any. Check (2) of “4.1.2 Selection methods” for a definition of conflicts of interests.

**(by Prioritized Themes)**

\*If there are any other special matters specified by a prioritized theme, describe them here.

(Form 4) R&D Budget

\*Delete guidelines in blue letters when completing this form.

\*During the small-start-type phase, different prioritized themes may have different research periods. Be sure to check the R&D supervisor’s policies relating to the area in question by consulting the application information contained within “Chapter V, Prioritized themes and technology themes for which proposals are sought” when completing this form.

\*Enter an annual research-expense plan for each expense item and for each research group.

\*More detailed research expense plans are requested for selection interviews.

\*Research expenses may be reviewed upon adoption or during the research period, depending on the budgeting situation of the entire program, the management of the research area by the R&D supervisor, or the project-evaluation situation.

\*Propose a necessary, adequate, and optimum team composition for realizing the Principal Investigator’s research idea. A joint research group is essential for realizing a research idea and would greatly contribute to achieving a research objective.

* Research expense plan by expense account (for an entire team)

\*Research expense accounts and their uses are as follows:

- Facility and equipment: purchases of facilities and equipment

- Supply: purchases of supplies

- Travel: travel expenses for the Principal Investigator and researchers

- Personnel and gratitude: personnel costs of researchers, engineers, research aids, and RA(\*), as well as for providing tokens of gratitude

\*See application information “4.2.7(1), Concerning improving the treatment of students in doctoral courses (the latter stage)” for RA (research assistant).

\*This table for “Realization of a Super Smart Society (Society 5.0)” area, “Realization of a Sustainable Society” area, “Realization of the most Safe and Secure Society in the world” area.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Feasibility Study** | | | | **Full-scale Research** |
|  | **1st year**  (2017 Oct. -2018 Mar.) | **2nd year**  (2018 Apr. -2019 Mar.) | **3rd year**  (2019 Apr.-2020 Mar.) | **total**  (million yen) | **FY 20XX -FY 20XX** |
| **Equipment expense** |  |  |  |  |  |
| **Supplies expense** |  |  |  |  |
| **Travel expense** |  |  |  |  |
| **Personnel expense, gratitude**  **(number of researchers)** | ( ) | ( ) | ( ) |  |
| **Other** |  |  |  |  |
| **Direct expense** |  |  |  |  |  |
| **Indirect expense** |  |  |  |  |  |
| **Total** (million yen) |  |  |  |  |  |

\*This table for “Realization of a Low Carbon Society, a global issue” area.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1st year**  (2017 Oct. -2018 Mar.) | **2nd year**  (2018 Apr. -2019 Mar.) | **3rd year**  (2019 Apr.-2020 Mar.) | **4th year**  (2020 Apr.-2021 Mar.) | **Last year**  (2021 Apr.-2022 Mar.) | **total**  (million yen) |
| **Equipment expense** |  |  |  |  |  |  |
| **Supplies expense** |  |  |  |  |  |  |
| **Travel expense** |  |  |  |  |  |  |
| **Personnel expense, gratitude**  **(number of researchers)** | ( ) | ( ) | ( ) |  | ( ) |  |
| **Other** |  |  |  |  |  |  |
| **Direct expense** |  |  |  |  |  |  |
| **Indirect expense** |  |  |  |  |  |  |
| **Total** (million yen) |  |  |  |  |  |  |

* Special matters

\*Stipulate optimum budget and ratio for each account.

\*If applicable, describe the reasons personnel expenses exceed 50% of the total research expenses or supply expenses and travel expenses exceed 30% of the total research expenses.

* R&D Budget plan by group

\*Propose a necessary, adequate, and optimum team composition for realizing the Principal Investigator’s research ideas. A joint research group is essential for realizing a research idea and can greatly contribute to achieving a research objective.

\*This table for “Realization of a Super Smart Society (Society 5.0)” area, “Realization of a Sustainable Society” area, “Realization of the most Safe and Secure Society in the world” area.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Feasibility study** | | | |
|  | **1st year**  (2017 Oct -2018 Mar.) | **2nd year**  (2018 Apr. -2019 Mar.) | **3rd year**  (2019 Apr.-2020 Mar.) | **Total**  (million yen) |
| **Principal Investigator Group**  OO university |  |  |  |  |
| **Joint research G-a**  XX university |  |  |  |  |
| **Joint research G-b**  XX university |  |  |  |  |
| **Direct costs** |  |  |  |  |
| **Indirect costs** |  |  |  |  |
| **Total** (million yen) |  |  |  |  |

\*This table for “Realization of a Super Smart Society (Society 5.0)” area, “Realization of a Sustainable Society” area, “Realization of the most Safe and Secure Society in the world” area.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1st year**  (2017 Oct -2018 Mar.) | **2nd year**  (2018 Apr. -2019 Mar.) | **3rd year**  (2019 Apr.-2020 Mar.) | **4th year**  (2020 Apr.-2021 Mar.) | **Last year**  (2021 Apr.-2022 Mar.) | **Total**  (million yen) |
| **Principal Investigator G**  OO university |  |  |  |  |  |  |
| **Joint research G-a**  XX university |  |  |  |  |  |  |
| **Joint research G-b**  XX university |  |  |  |  |  |  |
| **Direct costs** |  |  |  |  |  |  |
| **Indirect costs** |  |  |  |  |  |  |
| **Total** (million yen) |  |  |  |  |  |  |

* Major facilities to be utilized (name of instrument, installation site)
* Major facilities planned for purchase ( more than JPY5,000,000 for every order, name of instrument, approximate cost)

(example)

Group A:

XXXXXXXXX 15,000 K yen (1,000 yen)

XXXXXXXXX 5,000 K yen

XXXXXXXXX 10,000 K yen

Group B:

XXXXXXXXX 7,000 K yen

XXXXXXXXX 10,000 K yen

(Form 5) R&D Project Applicant (Project Leader)

\*Delete guidelines in blue letters when completing this form.

* Basic information on the Principal Investigator (PL)

|  |  |  |  |
| --- | --- | --- | --- |
| (phonetic)  Name |  | | |
| Nationality/  gender |  | birth date (A.D.) |  |
| Affiliation, title |  | |  |
| Academic history  (after graduation from college) | academic history：  (Filling-in example)  OOyear OOuniversity OOdepartment graduation  OOyear HOOyear OOgraduate school OOdepartment master’s course  OOmajor  OOyear OOgraduate school OOdepartment doctoral course OOmajor  OOyear Ph.D. (OOmajor) (OOuniversity) | | |
| Research history  (main history and research contents) | job history：  (Filling-in example)  OOyear-OOyear OOCo.,Ltd OOR&Ddepartment (development of OOOO)  OOyear-OOyear OOuniversity special associate professor (research on OOOO)  OOyear-OOyeat OOCo., Ltd OOdepartment (in charge of OO) | | |
| Other special matters | (voluntary description on social contributions, international activities) | | |

* List of achievements by the Principal Investigator (PL)

\*Describe up to 20 previous achievements, such as published papers and books, related to this R&D project in chronological order, starting with the most recent.

\*Follow the instructions below concerning items on papers to be described (the same applies to authored books):

\*You may choose the order of the items freely.

\*Put a “●” mark before the title of a paper if the paper is cited in form 3.

**<Project Leader>**

(example)

* Author(s)(all authors), Title, Journal/Book, Volume, Page numbers and Published year

**<Lead Joint Researcher A>**

(example)

* Author(s)(all authors), Title, Journal/Book, Volume, Page numbers and Published year

**< Lead Joint Researcher B>**

(example)

* Author(s)(all authors), Title, Journal/Book, Volume, Page numbers and Published year

(Form 6) Information on Other Supports

\*Delete guidelines in blue letters when completing this form.

\*If the Principal Investigator and Lead Joint Researchers are receiving, applying for, or planning to apply for alternative funding systems or other research subsidies (including from private foundations or overseas organizations), describe the research title, research period, role, amount of research expenses received, and efforts made thus far for each of system or subsidy. Also, see application information “6.3, Measures to address unreasonable duplication and excessive concentration.”

\*If a description is found to be false, an adopted proposal may be cancelled later.

\*If, during the selection process for this research proposal, a description in this form requires alteration because the research subsidies applied or planned to be applied for, as mentioned above, have been altered, correct this form and send a notification e-mail to the contact details provided at the end of these application requirements.

\*Copies of the application documents and plans submitted to other systems may be requested during the selection interview.

(example)

**Project leader: XX XX (name)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name of program | Situation | name of research projects  (name of representative) | research  period | role  (representative/ shared role) | received  R&Dexpense  (1) (whole period)  (2) (FY2018)  (3) (FY2017)  (4) (FY2016) | effort  (%) |
| JST-Mirai R&D  Program (this  Proposal) | applied |  |  | representative |  |  |
| Science research subsidy, base research (S) | received | ◊◊ creation by xx  (OOOO) | 2015. Apr. -2019 Mar. | representative | (1) 100 M yen  (2) 50 M yen  (3) 25 M yen  (4) 5 M yen | 20 |
| JST strategic Research promotion  CREST | applied | ◊◊ upgraded function by xx  (OOOO) | 2017 Oct.-2023 Mar. | shared role | (1) 140 M yen  (2) 35 M yen  (3) 8 M yen  (4) - |  |
|  |  |  |  |  |  |  |

\*List, in descending order of the amounts received (over the entire period), subsidies received or expected to be received. Then, describe subsidies applied for and those that you plan to apply for, if applicable.

\*If a subsidy is being received or you expect to receive it, enter “received.” Enter “applied” if you have applied for but not yet received a subsidy or if you plan to apply for a subsidy.

\*Describe representative or shared duties under “role.”

\*Describe the amount (direct expenses) to be received by the research representative her/himself under “research expenses received by the research representative.”

\*Describe the distribution ratio of the time required to perform the research relative to 100%, which represents total annual work hours (including not only time for research activities but also educational and therapeutic activities) under “effort” [as defined at the Comprehensive Science, Technology, and Innovation Convention]. Only account for efforts expended or planned to be expended on the presumption that a proposal is adopted by JST-Mirai program, not efforts made in regard to proposals submitted to other research organizations, such as those applied to or those planned to be applied to. The total efforts made during the small-start-type phase and efforts made toward subsidies being received should not exceed 100%.

\*Add or delete lines as necessary.

(example)

**Lead Joint Reseacher a: XX XX (name)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name of program | Situation | name of research projects  (name of representative) | research  period | role  (representative/ shared role) | received  R&Dexpense  (1) (whole period)  (2) (FY2018)  (3) (FY2017)  (4) (FY2016) | effort  (%) |
| JST-Mirai R&D  Program (this  Proposal) | applied |  |  | shared |  |  |
| Science research subsidy, base research (S) | received | ◊◊ creation by xx  (OOOO) | 2015. Apr. -2019 Mar. | representative | (1) 100 M yen  (2) 50 M yen  (3) 25 M yen  (4) 5 M yen | 20 |
| JST strategic Research promotion  CREST | applied | ◊◊ upgraded function by xx  (OOOO) | 2017 Oct.-2023 Mar. | shared role | (1) 140 M yen  (2) 35 M yen  (3) 8 M yen  (4) - |  |
|  |  |  |  |  |  |  |

(example)

**Lead Joint Reseacher b: XX XX (name)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name of program | Situation | name of research projects  (name of representative) | research  period | role  (representative/ shared role) | received  R&Dexpense  (1) (whole period)  (2) (FY2018)  (3) (FY2017)  (4) (FY2016) | effort  (%) |
| JST-Mirai R&D  Program (this  Proposal) | applied |  |  | shared |  |  |
| Science research subsidy, base research (S) | received | ◊◊ creation by xx  (OOOO) | 2015. Apr. -2019 Mar. | representative | (1) 100 M yen  (2) 50 M yen  (3) 25 M yen  (4) 5 M yen | 20 |
| JST strategic Research promotion  CREST | applied | ◊◊ upgraded function by xx  (OOOO) | 2017 Oct.-2023 Mar. | shared role | (1) 140 M yen  (2) 35 M yen  (3) 8 M yen  (4) - |  |
|  |  |  |  |  |  |  |

(Form 7)  
Protection of Human Rights and Compliance with Laws and Regulations

\*Delete guidelines in blue letters when completing this form

\*Describe the measures and actions that you will take if your research involves compliance with the related laws and regulations (e.g. research requiring the consent and the cooperation of the other party when implementing the research plan, research requiring consideration for the handling of personal information and research requiring efforts regarding bioethics and safety measures).

\*This applies to surveys, research, experiments which require an approval procedure in an ethics committee inside and outside the research institution, such as for example questionnaire surveys in which personal information is involved, interview surveys, the use of provided samples, analysis study of the human genome, recombinant DNA experiments, experiments on animals, etc.

\*Please indicate where this is not applicable.

(Form 8) References

\*Delete guidelines in blue letters when completing this form.

\*Provide the names of two (2) individuals who have good knowledge of your Research Project (non-Japanese person(s) are acceptable). Provide names of the reference person, institution and contact information (phone numbers and e-mail address). The evaluators (JST and R&D Supervisor) may contact them regarding the R&D proposal during the screening process.

\*Providing this reference information is not mandatory.