

Guidelines for Handling Basic Policy for Management of the Impulsing Paradigm Change through Disruptive Technologies (ImPACT) Program

February 27, 2014

Council for Science and Technology Policy
Committee for Promotion of the ImPACT Program

This document prescribes the handling of policy for the selection of Program Managers (PM) and related matters in the Impulsing Paradigm Change through Disruptive Technologies (ImPACT) Program, as well as the handling of intellectual property rights, conflict of interest, and other such matters in accordance with the Basic Policy for Management of the ImPACT Program (decided by the Council for Science and Technology Policy on February 14, 2014).

I. Policy for the Selection of PM and Related Matters

1. Public Invitation of Applications for PM

(1) Requirements for PM Applicants

(i) Application should be made by one person.

(ii) The applicant should have the knowledge and capability of design, planning and management at a high level, in relation to industry-oriented R&D or commercialization of cutting-edge technology as a core.

(iii) The applicant to be employed by Japan Science and Technology Agency (JST) must be able to work full-time as a PM. Employment contracts with JST (including direct employment by JST and temporary transfer to JST) should be concluded within three months after the decision to approve the applicant by Council for Science and Technology Policy (CSTP).

(When the adjustment of an employment contract has special difficulty, the contract, under the approval by the Panel of Experts on ImPACT Program (hereafter the Panel), should be concluded within one year after the decision to approve the applicant.)

(iv) Based on the main point of ImPACT, fulltime work as PM is the principle as shown in the above paragraph 3). However, in the following two cases, the additional post can be accepted exceptionally after fully examining the necessity of additional post in the PM selection process

(a) In the case that the applicant who belongs to a university is engaged in business as a university teacher at the rate of an effort of 10% or less (R&D business of the following

(b) cannot be included here) with using the cross-appointment contract system (*).

(b) In the case that the applicant who belongs to a university or a public institution is

engaged in business as a researcher in charge of the commissioned R&D from JST at the rate of an effort of 10% or less, when doing part of an R&D program by the PM him/herself is judged as very effective in order to obtain a result.

(That is, in the case of the applicant who belongs to a university, the total rate of an effort in a university is 20% or less, even if it includes business as a university teacher.)

(*) In the case that the cross-appointment contract system is not yet introduced in the university, the applicant can participate as PM by an engagement agreement with JST as a transitional measure when satisfying both of the following two conditions.

- The university is expected to introduce the cross-appointment contract system.
- The applicant should conclude an employment contract with JST within one year after the decision to approve the applicant.

- (v) In the case that the permanent address of the PM is overseas when applying, the address should be promptly moved to Japan after the decision to approve the applicant, and the applicant must carry out the work as PM in a responsible manner over the entire period of the R&D program. The nationality of the PM will not be raised as an issue if such is recognized as truly necessary for the realization of changes in the state of industry and society envisioned in the indicated theme.

(2) Requirements for R&D program concept proposed by PM

(i) It should be a concept based on the theme which CSTP has determined.

(ii) If it is carried out, it should bring about change in the state of industry and society.

It should aim for the disruptive innovation which surprises not only Japan but also the world.

(It should not be on the extension of the existing R&D, but should be connected to the disruptive innovation.)

(iii) It should be capable of bringing together the highest level of R&D capabilities in Japan with a variety of different bodies of knowledge.

(3) Miscellaneous

The Director-General for Science, Technology and Innovation Policy of the Cabinet Office will create the Guidelines for Invitation of Application for PM and implement the public invitation of applications for PM in accordance with the Basic Policy for Management of the Program for Impulsing Paradigm Change through Disruptive Technologies (ImPACT) and the Guidelines for Handling the Basic Policy. Other detailed matters concerning the public invitation of applications for PM will be determined by the Director-General for Science, Technology and Innovation Policy of the Cabinet Office.

2. PM Selection

(1) Selection Procedure

(i) Review by the Panel of Experts

The Panel will review the content of submitted documents (including the appropriateness of the estimated cost of the R&D program). In that case, interviews with applicants are carried out if needed. Moreover, opinions of the applicants and their R&D program concepts may be heard from the related organization in public or private sector, and the opinions concerned may be considered as reference in the screening process.

The Panel will select about 20 to 30 PM candidates from among the applicants and report on them to the Committee for Promotion of ImPACT Program (hereafter the Committee).

(ii) Deliberation and Examination by the Committee

The Committee will conduct deliberation and examination regarding PM candidates based on reports from the Panel. Also taking budget amounts into consideration, the Committee will select some 10 of the PM hiring candidates, prepare a PM hiring proposal, and report it to CSTP. (In the event that additional screening must be conducted before reaching a hiring decision, reports will be made in order as the additional screening is completed.) However, the number of hires will be handled flexibly in light of the actual content of candidate proposals.

(2) Selection Criteria

The main selection criteria are as following:

(i) PM Qualifications and Record of Performance

- The knowledge and capability of design, planning and management at a high level, in relation to industry-oriented R&D or commercialization of cutting-edge technology as a core.
- Specialized knowledge and understanding of the theme. Ability to grasp domestic and international needs as well as R&D trends.
- Ability to take a broad view of technology and market trends. Ability to conceptualize commercialization from multifaceted perspectives.
- Ability to communicate fully not only with researchers but with all concerned parties. Leadership ability for achieving goals.
- Ability to network with specialists in business, academia, and government as well as ability to collect technical information.
- Motivation to carry through with realization of high-impact innovation.
- Ability to give readily understandable explanation of the PM's own R&D concept to outsiders.

(ii) R&D Program Concept Proposed by PM

(a) Compatibility of the Concept with the Purport of ImPACT

- The concept of PM should be based on the theme determined by CSTP.
- The concept should bring about huge changes in the state of industry and society, if it is carried out. (It should return the profit to Japanese people widely.)
- The concept should take on high-risk, high-impact challenges that programs other than ImPACT are unable to address. (It should not be an extension of existing R&D, but should be connected to the disruptive innovation.)
- The concept should require the collaboration of different fields of knowledge beyond the existing fields. (It should not be limited to specific fields.)
- The concept should bring together the highest level of R&D capabilities in Japan with a variety of different fields of knowledge. (The R&D institutions proposed by PM applicant should be appropriate. Building the team of R&D institutions and gathering the key participants should be feasible.)

It is permissible to also include dual-use technology that is mutually applicable as industrial technology and as technology contributed to the safety and security of the Japanese people.

(ii) Appropriateness of the Contents of Concept

- The concept should be rationally explained as feasible, even though it is high-risk. (A rational scenario towards utilization and industrialization should be explained.)
- The implementation plan of the R&D program concept should be appropriate. (Appropriateness in terms of the estimated cost and of results expected within implementation time allowed.)
- The expected results proposed by PM should be verifiable.

(3) The Expected Number of PMs and the Budget Scale of each R&D Program

The expected number of PMs is a dozen or so. The expected budget scale of R&D program which each PM manages is about 3 billion to 5 billion yen. However, the number and scale depends upon the content of actual proposals. In addition, the budget scale of each R&D program shall be finalized after confirming the necessity of the budget for the actual implementation plan.

(4) Exclusion of Stakeholders

The member of the Committee and the Panel (hereafter the “member”) must check whether each applicant is his/her stakeholder. When stakeholders are included in the applicants, the member should not take part in the screening of the proposal from the stakeholder after declaring this to the secretary (Office of the Director-General for Science, Technology and Innovation Policy, Cabinet Office). The range of what is to be considered a stakeholder will be

determined by the Director-General for Science, Technology and Innovation Policy of the Cabinet Office.

(5) Confidentiality

The member must not leak the information obtained as member, including personal information and information from the screening, even after the result of the screening is open to public.

The member shall have the duty to manage the information obtained as a member, keeping it separate from other information, and with the due care of a prudent manager.

(6) Miscellaneous

Other detailed matters concerning PM selection, including review procedures involved in selection, will be determined by the Director-General for Science, Technology and Innovation Policy of the Cabinet Office.

3. PM Management of the Implementation of R&D Programs

(1) PM Employment and PM Support Systems

In hiring PMs, the JST will take into consideration decisions regarding PM employment made by CSTP. Employment contracts are to be drafted in a form that will allow execution of CSTP's decision to dismiss a PM, if such a decision is made.

When the JST establishes an internal organization to support the implementation of R&D program management in general, including PM's R&D activities, commercialization, and other such activities, the JST will report this to the Panel (This also applies to the modification of such an organization.)

The PM is to be able to make use of outside resources as necessary when creating a PM support structure.

(2) Selection of R&D Institutions

(i) Confirmation by the Panel

The PM will select R&D institutions, report selections to the Panel, and seek the Panel's confirmation. The Panel will base its confirmation primarily on the following considerations.

- Whether institutions are selected in accordance with the main purpose of the system.
- Whether institutions are selected in accordance with the R&D program concept proposed by the PM when hired.
- Whether the selection includes institutions connected with the PM or institutions outside Japan that require approval by the Committee.
- Whether institutions that are inappropriate for selection are included.

Confirmation will take into account the stated main purpose of the system, which is to promote

high-risk, high-impact initiatives and to grant the PM sweeping authority.

Following confirmation, the JST will exchange contracts with each research and development institution, and the research and development institutions will implement research and development under the management of the PM.

(ii) Approval by the Committee

When the PM seeks to select an organization connected with the PM or an organization outside Japan as an R&D institution, the PM must ask the Committee for its approval. The Committee will approve the selection if it recognizes that selection of the institution in question is truly necessary in terms of bringing about major changes in the state of industry and society indicated in the theme.

As to organizations outside Japan, it is conceivable that their agreement to the contract conditions with the JST might not be obtained in some cases, and if there is no prospect that the contract will be executed within one year after the approval of the Committee is obtained, then the approval is to be withdrawn.

The handling of institutions that are connected with a PM is prescribed in section III (Handling Conflicts of Interest).

(3) Management of the Implementation of R&D Programs

(i) Implementation Management Methods

The JST will conclude contracts with R&D institutions in accordance with the policy of the PM. When this is done, contracts will be written so that flexible revision of R&D plans can be made in accordance with the policy of the PM.

Management by the PM of R&D implementation will, as a rule, be carried out on the basis of commissioned R&D contracts between JST and each R&D institution.

In the case of R&D institutions outside Japan, however, projects will be managed so that intellectual property rights are used effectively in terms of enhancing Japan's industrial competitiveness. At the same time, the JST and the R&D institutions are to conclude contracts containing provisions related to these matters with a view to assuring that the outflow of technology or other such factors do not impede Japan's international competitiveness.

(ii) Implementation Period

The R&D program implementation period is as a rule to be three years or more and no more than five years. (Fiscal year 2014, however, will be calculated as one year no matter when R&D starts.) The multi-year use of R&D costs is possible during the whole R&D period. The R&D period in each R&D institution can be flexibly determined under the plan of the PM.

(iii) Covered Costs

Funding can be used for the following kinds of costs. Detailed determinations are to be made in

accordance with the fund operating policy specified by the Committee.

- Administrative costs intended to support PM personnel costs as well as PM management of R&D, commercialization, and other such activities
- Personnel costs of researchers and their assistants, supplies costs, the cost of hiring equipment for exclusive use, the cost of equipment and its running, convention costs such as an international symposium, and management costs, indirect costs, and other such research costs that can be used with a high degree of flexibility at R&D institutions selected by the PM

4. Progress Management of the PM

(i) Reports from the PM

As a measure for steady promotion of the ImPACT program, the Panel will receive reports on the status of program progress from all PMs at approximately half-year intervals. In order to implement PM progress management effectively, the Panel will also designate a number of Panel members to act as Coordinating Panel Members for each PM. The Coordinating Panel Members will receive reports on the status of progress from the PM they are coordinating for as needed.

(ii) Advice and Cooperation for the PM

When the Panel and Coordinating Members receive reports on the status of progress from the PM, or when they are asked for advice, they are to provide appropriate advice as necessary.

In the event that the PM finds it necessary, in the interest of practical application of R&D results, to seek regulatory reform or other such institutional reform, or effective application of government procurement, policy finance, or other such frameworks, then the PM is able to request the cooperation of the Committee in seeking institutional reform or effective application. If the Committee determines that the substance of the request for cooperation is valid, the committee will make approaches to the ministries, agencies, and organizations concerned and take other such steps as needed.

(iii) Requests for PM Improvement

The Panel will take the substance of the progress report from the PM into consideration and may, if necessary, require the PM to make improvements.

In requesting improvements, the Panel will bear in mind the main purpose of the system, which is to promote high-risk, high-impact initiatives and to grant the PM sweeping authority, and rather than demand improvement on detailed points, will act from a broader perspective as follows.

- In the event of concern that there will not be sufficient impact in achieving the changes in the state of industry and society indicated in the R&D program theme, constructive

- requests for improvement for more effective operation of the R&D program will be made.
- If there are any aspects that are inappropriate for a project of the Japanese government, corrections will be made.

(iv) Dismissal of a PM

Under the following kinds of circumstances, the Panel can hold deliberations and discussion and propose the dismissal of a PM to the Committee. The Committee will hold deliberations and discussion regarding dismissal of the PM based upon the proposal from the Panel, and will report the results to CSTP.

- (a) When improvements demanded by the Panel are not carried out. (When improvements requested by the Coordinating Members from the Panel are not carried out and the Coordinating Members judge that it would be appropriate to dismiss the PM, the Coordinating Members can propose the dismissal of the PM to the Panel.)
- (b) When it is judged that results (changes in the state of industry or society that are indicated in the theme or themes) cannot be expected.

5. Evaluation of the PM

CSTP implements evaluation of the PM after the R&D have been completed. That implementation, while taking the main purpose of the system into account, will primarily take a perspective like one of the following. Details concerning evaluation will be specified separately by the Committee.

(i) Evaluation of R&D Program Implementation Management by the PM

- Whether the program yielded prospects for bringing about changes in the state of industry and society
- Whether the program yielded prospects for bringing about disruptive innovation instead of gradual change
- Whether high-risk, high-impact challenges were taken on
- Whether it brought together the highest level of R&D capabilities in Japan with a variety of different bodies of knowledge

(ii) Evaluation of the PM's Own Activities

- Whether the PM's program management process was appropriate, with changes made to R&D plans when the achievement of initially envisioned objectives became unlikely, with advances made in derivative R&D, or plans, adjustments, or other actions taken for the commercialization of results
- When results were not obtained in accordance with objectives, whether the reasons for this were analyzed appropriately, and whether profitable lessons were learned regarding the future state of PM activities in Japan

6. Miscellaneous

The Committee will follow up on the results of this program as a whole by implementing follow-up evaluation after a certain period of time has passed following the conclusion of R&D and by other such actions. Details concerning follow-up will be determined by the Director-General for Science, Technology and Innovation Policy of the Cabinet Office.

II. Handling of Intellectual Property Rights

1. Basic Policy

Intellectual property rights that have been acquired will be administered according to the following policy in order to realize the R&D program concept proposed by the PM and to create disruptive innovations that will bring about major change in the state of industry or society.

- (i) Applying Article 19 of the Industrial Technology Enhancement Act, intellectual property rights will as a rule belong to the contracted R&D institution or to the researcher or other such party who belongs to that institution.
- (ii) The program places emphasis on making use of intellectual property rights so as to maximize the social and economic evaluation (outcome) of results obtained from R&D programs. While the primary focus is placed on implementation of those rights by contracted R&D institutions, joint utilization by R&D institutions that are participating in R&D programs (hereafter, participating R&D institutions) will be allowed when necessary.

2. Specific Management Methods

(1) Operational System

- (i) Participating R&D institutions are to conclude contracts with JST regarding intellectual property rights management policy. The contracts should cover methods for implementation of intellectual property rights, the transfer of intellectual property rights, confidentiality, the handling of intellectual property rights that involve parties other than participating R&D institutions, the handling of intellectual property rights that participating R&D institutions owned before they participated in a R&D program, and other such matters.
- (ii) A forum will be established (hereafter referred to as the Intellectual Property Administration Conference (Provisional)) for consultation and determination of matters necessary to the administration of intellectual property rights, including licensing conditions, for each R&D program. The Intellectual Property Administration Conference (Provisional) will include the PM, some or all of the participating R&D institutions, and the JST. Outside experts can be added as necessary.

(2) Implementation of Intellectual Property Rights

- (i) The implementation of intellectual property rights by a venture business that is started up by a R&D institution that owns such rights or by researchers or other such parties who belong to the R&D institution is expected to promote the commercialization of those rights.
- (ii) If it is judged that implementation according to item (i) above will not conspicuously hamper implementation, then in order to maximize the social and economic evaluation (outcome) of results obtained from a R&D program, joint utilization with participating R&D institutions is to be allowed. This presupposes agreement on implementation fees and other implementation conditions in the Intellectual Property Administration Conference (Provisional).
- (iii) In consideration of the public benefit produced by virtue of being a national government project, it is to be allowed to license intellectual property rights to parties other than participating R&D institutions under implementation conditions determined by the Intellectual Property Administration Conference (Provisional) while taking into account the advantages of implementation in accordance with items (i) and (ii) above.

(3) Transfer of Intellectual Property Rights

The transfer (sale, merger, etc.) of intellectual property rights acquired through a R&D program requires approval by the JST. The JST is to approve the transfer when it can be confirmed that the outflow of technology or other such factors do not impede Japan's international competitiveness and that the rights and obligations relating to the intellectual property are passed on with the transfer. In deciding on its approval, the JST will seek the views of the PM in advance and will also report to the Promotion Committee in the event that its valuable judgement regarding the transfer of intellectual property rights is required from that committee. When necessary, the Committee is to be able to judge whether or not approval is to be granted and instruct the JST accordingly.

(4) Handling Institutions Outside Japan

In the event that approval is received from the Committee for an institution outside Japan to participate as a R&D institution, that institution is to participate on the understanding that a share of 50% or more of the intellectual property rights acquired through the implementation of ImPACT research is to be assigned to the JST. The licensing of intellectual property rights is to take place subject to consultation between the two parties.

(5) Costs Relating to Intellectual Property Rights

- (i) Payment of costs relating to applications for intellectual property rights, their review, and the

maintenance of such rights (hereafter referred to as intellectual property rights costs) as R&D program costs (direct costs) is to be allowed during the R&D program implementation period.

(ii) After the conclusion of the R&D program, intellectual property rights costs are to be borne by the intellectual property rights owners.

(6) Miscellaneous

(i) All concerned parties that participate in a R&D program are to implement thoroughgoing information control with a clearly formulated open-close strategy.

(ii) Intellectual property rights in a joint invention by multiple participating R&D institutions are to be shared by those participating R&D institutions, and the percentage shares are to be determined by the Intellectual Property Administration Conference (Provisional) with reference to the views of those participating R&D institutions.

(iii) The handling of intellectual property rights in cases when parties other than the participating R&D institutions are involved (including cases of subcontracting) is to be determined in the Intellectual Property Administration Conference.

(iv) Intellectual property rights that belonged to a participating R&D institution before that institution participated in a R&D program (background intellectual property) may become necessary for the execution of a R&D program, for the practical utilization of the results of an R&D program, or for other such purposes. In such cases, the owner is to license those rights, with the agreement of the Intellectual Property Administration Conference (Provisional) as a precondition.

(v) In the case of contracts specified in section 2(1)(i), above, contract provisions concerning the handling of intellectual property rights and other such matters are to remain in effect for the period in which intellectual property rights continue in force, even if participating R&D institutions withdraw from participation in the project.

(vi) In cases when agreement is not reached in the Intellectual Property Administration Conference (Provisional), the parties are to comply with the decision of the PM during the R&D program implementation period. After the conclusion of the R&D program, they are to comply with the decision of the JST, which will be arrived at while taking the views of the PM and the participating R&D institutions into consideration.

III. Handling Conflicts of Interest

1. Basic Policy

Given the purpose of ImpACT, which is to realize the R&D program concept proposed by the PM and to create disruptive innovations that will bring about major change in the state of industry or society, the interests of the PM and the participating R&D institutions are to be

judged according to uniform criteria. In effect, relationships that interfere with Japan's top-level R&D capability or with the aggregation of various kinds of knowledge are not appropriate. A conflict of interest between a PM and an institution connected with that PM is therefore to be judged properly in light of such considerations as the necessity, reasonableness, and appropriateness of the relationship in question.

2. Scope of "Institutions that are Connected with a PM"

"Institutions that are connected with a PM" refers to R&D institutions for which any of the following relationships are applicable to the researcher in charge at the institution.

- (i) Cases in which the PMs themselves are the researchers in charge.
- (ii) Relationships of PMs with relatives or personal relationships of similar closeness.
- (iii) A person who is affiliated with the university, independent administrative institution, or other such research institution from which the PM is conducting side business or from which the PM has been sent on loan. Also, a person affiliated with the same business enterprise as the PM.
- (iv) A person who is working closely on joint research with the PM. Also, a person who has worked closely on joint research with the PM within the past five years.
- (v) A person who has in the past been in a close teacher-student relationship or in a direct employment relationship with the PM for a total of 10 or more years.
- (vi) Other such cases that the Promotion Committee judges to constitute a stakeholder relationship.

3. Operating Policy

(1) Selection of R & D Institutions and Allocation of Funds

When an institution that is connected with a PM is selected as an R&D institution, or when a change is being made in the allocation of R&D funds, the Committee's approval is required. The Committee will grant its approval if it recognizes the matter as truly necessary in order to realize the changes in the state of industry and society indicated in the theme.

(2) Preventing Conflict of Interest Problems

The JST should develop a system for consulting as needed with PMs who are uncertain about their judgement regarding conflicts of interest during the R&D program implementation period. The system could consist, for instance, of a committee of outside experts, and it would prevent problems before they occur.

(3) Miscellaneous

When making use of the JST conflict of interest management mechanism with regard to other

matters would be appropriate, that mechanism can be used.