

Provisional translation

**Impulsing Paradigm Change  
through Disruptive Technologies  
(ImPACT)**

**Program Manager  
Application Guideline**

**March 2014  
Cabinet Office**

This is a provisional translation of the authentic document written in Japanese.

## Structure of the Guidelines for Invitation of Public Application

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## I. Overview of Program for Impulsing Paradigm Change through Disruptive Technologies (ImPACT)

### (1) Purpose

Japan is presently exposed to intense international competition and also faces serious socio-economic issues. In order to overcome these issues, it will be important to bring about major changes in the future state of industry and society in Japan. We are being called upon to take action to encourage attitudes and initiatives characterized by challenge, openness, and innovation. The Impulsing Paradigm Change through Disruptive Technologies (ImPACT) Program is one such concrete action, constituting "a new system that, if realized, will create disruptive innovation that brings about change in society" with the purpose of transforming mindsets of the research and development (R&D) community on-site, converting from introversion to the spirit of challenge, and from a go-it-alone orientation to open innovation.

The ultimate purpose of ImPACT is to realize "the world's most innovation-friendly country" and "a country abounding in the spirit of entrepreneurship." This cannot, of course, be achieved by the ImPACT program alone, so the aim is also to take successful cases produced by ImPACT and provide them as future models for action to be followed as Japan's various spheres and sectors pursue innovation.

### (2) Features of ImPACT (See <Reference 1>)

The features of the ImPACT program are as follows:

- (i) ImPACT is to encourage challenge whose probability of success is not necessarily high (*high-risk*) but which can be expected to have a major impact in the case of success (*high-impact*), and to foster an entrepreneurial climate. The aim, in other words, is to create the disruptive innovation that will bring about major changes in the state of industry and society and will also astonish the world if realized, and to promote high-risk and high-impact R&D.
- (ii) ImPACT will rigorously select program managers (PMs) who have promising, innovative ideas regarding themes determined by CSTP. This approach is characterized by significant delegation of authority to each PM, who then works with outstanding researchers to create innovation. In other words, the PM acts as a producer who casts researchers and brings together capabilities in design and management of R&D with Japan's

highest-level capabilities in R&D.

(3) Management of R&D Program Implementation by the PM (See <Reference 2>)

The invitation of public application for PM will proceed in accordance with these Guidelines for Invitation of Public Application and after undergoing the required review in the Committee for Promotion of ImPACT Program (hereafter the Committee) and the Panel of Experts on ImPACT Program (hereafter the Panel), the Council for Science and Technology Policy (CSTP) will decide on the PM. The management of R&D program implementation by the PM will then proceed as follows.

(i) The Japan Science and Technology Agency (JST) will hire PMs based on the decision of CSTP. The employment contract\* will be written so that, if CSTP decides to dismiss a PM, that decision can be carried out.

\* As will be explained later, there may be cases in which an engagement agreement is accepted instead of an employment contract as an exceptional transitional measure.

(ii) The PM will select the R&D institution(s), report it to the Panel, and seek confirmation. After it has been confirmed, the R&D institution will implement R&D under the PM's management. When an institution affiliated with the PM or located outside Japan is to be selected as the R&D institution, the PM will seek approval of the selection from the Committee.

(iii) The JST will conclude contracts with R&D institutions in accordance with the PM's policy. When this is done, the contracts will be written so that flexible revision of R&D plans can be made in accordance with the PM's policy. Management by the PM of the implementation of R&D will as a rule be carried out on the basis of commissioned R&D contract between JST and each R&D institution. In the case of R&D institutions located 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.

#### (4) Progress Management and Evaluation of the PM

##### (i) Progress Management

- The Panel will receive reports on the status of program progress from all the PMs at approximately half –year intervals. In order for the PM to implement progress management effectively, the Panel will also designate a number of Panel members to act as the 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.
- When the Panel and the coordinating Panel members receive progress status reports from a PM, or when they are asked for advice by a PM, 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, the PM should request the cooperation of the Committee in seeking institutional reform. 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.
- The Panel will take the substance of the report from the PM into consideration and may, if necessary, require the PM to make improvements. When demanding improvement, however, it will bear in mind the very feature of ImpACT program, which is to encourage high-risk, high-impact initiatives and to delegate the authority to the PM.
- When improvements demanded by the Panel are not carried out, or when it is judged that results (the changes in the state of industry and society that are envisioned in the indicated theme) cannot be expected, CSTP can decide, after the matter has been deliberated and examined in the Committee, to dismiss a PM.

##### (ii) Evaluation

- After the implementation period of R&D, CSTP will conduct an evaluation of the PM. This will be implemented primarily from the following perspectives.

(Evaluation of R&D program of which the PM conducted implementation management)

- Whether the program yielded prospects for bringing about changes in

the state of industry and society.

- Whether disruptive innovation instead of incremental innovation was brought about
- 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.

(Evaluation of the PM's own activities)

- Whether changes were made to R&D plans when the achievement of initially envisioned objectives became unlikely, whether advances were made or other actions taken in derivative R&D, and whether the PM's program management process was appropriate.
- 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.

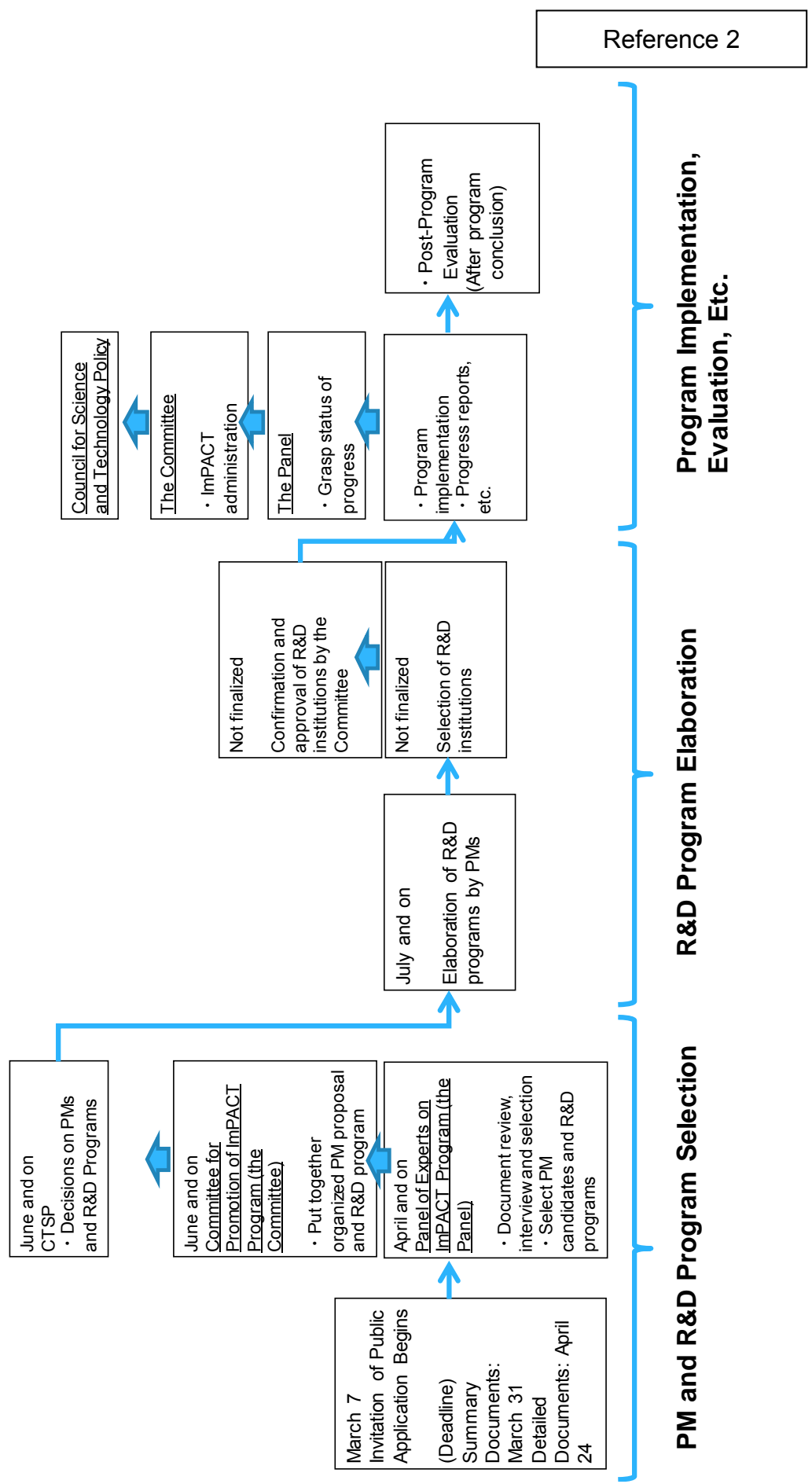
(5) Support of the PM, Etc., by the JST

JST will respond with certainty to the progress management on PMs implemented by CSTP, and will establish an appropriate structure with taking account of its position as an employer of PMs, a provider of assistance to PM activities, and a proper fund administrator.

## Features of the IMPACT Program

|                                               |                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. High Impact                                |                                                                                                                                                                                                                                                                                                                                              |
| Disruptive Innovation                         | It encourages challenge whose probability of success is not necessarily high (high-risk) but which can be expected to have a major impact in the case of success (high-impact), and fosters an entrepreneurial climate, based on themes defined by CSTP.                                                                                     |
| 2. Program Managers (PMs)                     |                                                                                                                                                                                                                                                                                                                                              |
| Significant Delegation of Authority to PMs    | CSTP rigorously selects PMs who have promising, innovative ideas, and delegates significant authority to them. The PMs act as producers who cast researchers while planning and managing implementation of R&D programs.                                                                                                                     |
| 3. Miscellaneous (Features of Administration) |                                                                                                                                                                                                                                                                                                                                              |
| Management by the Fund                        | <p>Multi-year fund is established in the JST, and R&amp;D and other costs are allocated from it.</p> <p>A high degree of freedom is given in the disposition of expense funds and changes in amounts.</p> <p>Costs can be carried over to the next fiscal year (this requires R&amp;D institutions to follow a procedures with the JST).</p> |
| PM Support System                             | <p>The JST establishes systems for the support of PMs.</p> <p>Under PM management, implementation of R&amp;D is managed smoothly by means of contracts between the JST and R&amp;D institutions.</p>                                                                                                                                         |

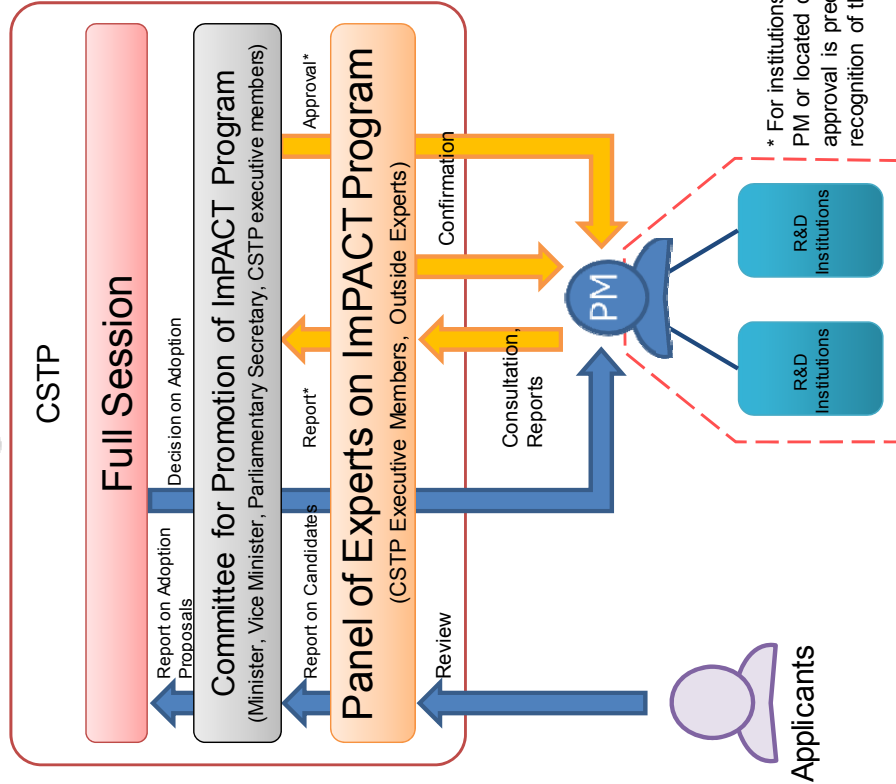
# ImPACT Program Flow



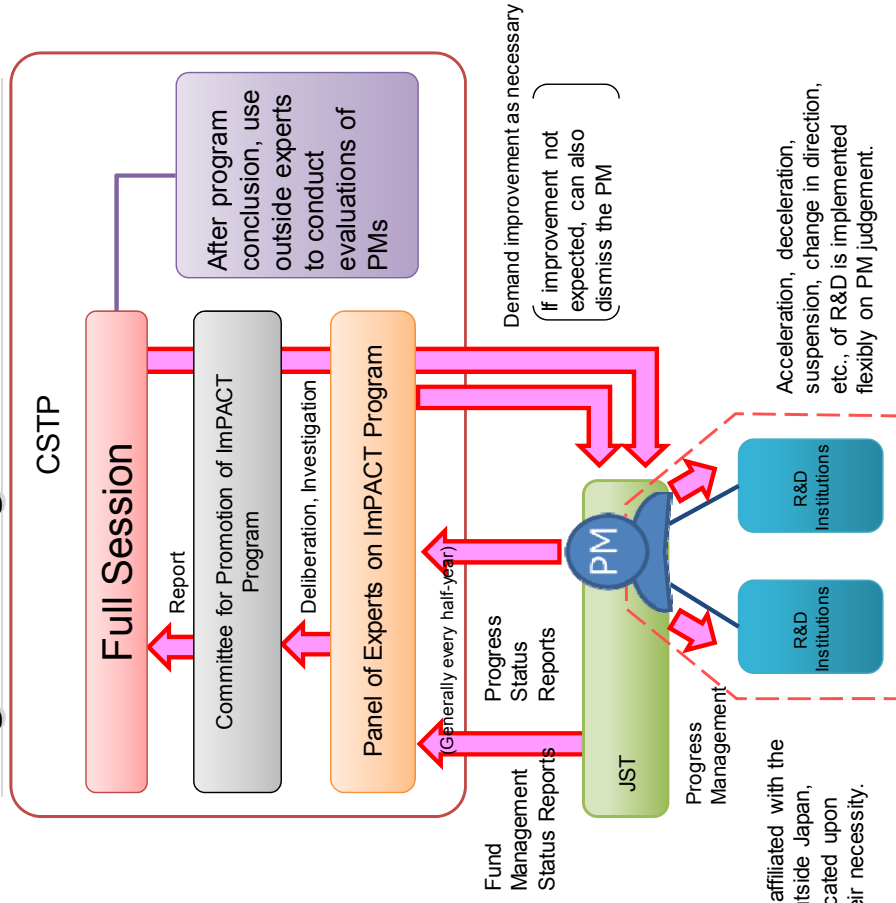
Reference 2



## PM Selection, Program Formation Procedures



## Program Management and Evaluation



## Implementation of R&D Programs

## Elaboration of R&D Programs

Reference 3

- ◆ PM is on principle a full-time position.
- ◆ When recognized as truly necessary, the nationality of the PM will not be raised as an issue.

## II. Themes Determined by CSTP

### (1) Perspectives in the Determination of Themes

In promoting the challenging R&D with high risk and high impact that will bring about major changes in the future state of industry or society in Japan, CSTP will determine themes from perspectives such as the following:

- (i) To bring quantum advances in competitiveness for Japanese industry and contribute greatly to a prosperous life for the people of Japan through innovation based on science and technology that bring about paradigm shifts by means of disruptive change
- (ii) To overcome the serious social issues faced in Japan by means of groundbreaking science and technology innovation that will overturn the conventional wisdom

The determination of themes will involve the widespread dissemination in society of the awareness of the issues by CSTP and an image of the social and economic impact that should be sought, as well as the disruptive innovation that is called for in realizing that impact. The significance of this is that, in the course of wide-ranging recruitment of the PMs, original and challenging ideas will be actively sought while at the same time the opportunities and the environment for bringing together the wide range of talented people and technologies that is necessary for the assembly of original and challenging ideas and the realization of disruptive innovation.

### (2) Themes Determined (See <Reference 4>)

- (i) Release from constraints on resources and innovation in “*monozukuri* (manufacturing)” capabilities  
(Japan-style value creation for the new century)
- (ii) Realization of an ecologically sound society and innovative energy conservation that changes lifestyles  
(Living in harmony with the world)
- (iii) Realization of a society of highly advanced functionality that surpasses the information networked society

(Smart community that links people with society)

(iv) Provide the world's most comfortable living environment in a society with a declining birthrate and aging population

(Realize healthy and comfortable lives for everybody)

(v) Control the impact and minimize the damage from hazards and natural disasters that are beyond human knowing

(Realize a resilience that is keenly felt by every individual Japanese)

**Theme 1. Release from constraints on resources and innovation in manufacturing capabilities**  
**“Japan-Style Value Creation for the New Century”**

**Awareness of Issues**

- Effective utilization of limited resources, highly advanced functionality without the use of expensive resources, and the use of substitute rare resources is difficult.
- There are no realistic methods for making use of unutilized and undiscovered maritime and other such resources.
- If there is no innovation in production technology, the production of high value-added products will rapidly become obsolete.
- The quality, constituents, and production volume of agriculture, forestry, and fishery production are difficult to regulate in response to changing weather conditions. And other such issues.

**Examples of Disruptive Innovation Called for**

**Envisioned Forms of Socioeconomic Impact**

Take air or some other such common resource, or sludge, waste, or other such valueless material, and, using only small amounts of energy and labor, convert or reform it into a useful resource, a high value-added material, or other such substance of value.

Not only is Japan freed from resource constraints, but Japan's presence in the world is enhanced as a new resource-rich nation.

Realize quantum improvement in performance as well as cost reduction (performance increase by a factor of 10 or more, cost decrease to one-tenth or less, etc.) by freely arranging elements to achieve advanced functionality, nano-sized manufacturing, or other such innovative production technologies.

Using technologies that other countries cannot emulate, achieve low-cost production of high value-added materials and high-precision processing, take a leading position in the world by strengthened production competitiveness, and sustain superiority over the long term.

Freely control the production of functional and medicinal components, allergens, and other such useful components of agriculture, forestry, and fishery products even in the natural environment.

Create new markets around a core of functional products in agriculture, forestry, fisheries, and so on (evidence-based dietary practices that change notions of the relationships between medicine, agriculture, manufacturing, and commerce, with medicine and food as agricultural products from the same source).

**Theme 2. Realization of an ecologically sound society and innovative energy conservation that changes lifestyles**  
**“Living in Harmony with the World”**

**Awareness of Issues**

- There are no effective methods of achieving large-scale energy conservation while also improving the quality of life (mobile infrastructure, lighting, heating and cooling, information appliances, etc.).
- There are no methods for drastically reducing the volume of waste, which is trending always upward. And other such issues.

**Examples of Disruptive Innovation Called for**

**Envisioned Forms of Socioeconomic Impact**

Realize innovative energy-saving lighting by means of new light-generating technology that reduces power consumption to 1% or less or that does not use electricity.

Street lighting that does not need electric power will achieve dramatic energy-saving impact while also enabling illumination at locations that lack sufficient electric power infrastructure, thus realizing a quantum improvement in social infrastructure as well as major reductions in electric power consumption.

Windows, walls, and other such structural elements capable of automatically regulating temperature in response to changes in the outdoor environment without using electric power, thus not only reducing utility bills for office buildings, residences, vehicles, greenhouses, and so on, but also reducing power outage risks.

The ability to make major reductions in electric power consumption while also maintaining comfortable living and working environments with respect to the major environmental changes (temperature, humidity, etc.) in the distinctive four seasons of Japan.

Achieve innovative ecologically-sound electronic devices that allow recycling or reuse of 99% or more of their parts at reasonable cost, and that also reduce power consumption to 1% or less.

Achieve an innovative energy-conserving and ecologically-sound society by innovations in the electronics technology that supports the increasingly advanced functionality of society as well as by freeing society from the constraints of rare resources and waste reduction.

### Theme 3. Realization of a society of highly advanced functionality that surpasses the information networked society “Smart Community that Links People with Society”

**Awareness of Issues**

Issues involved in making the transition to an information-based society and an increasingly sophisticated information society:

- The vast amounts of information available near-at-hand are not yet effectively utilized in the lives of the people or in the activities of the economy.
- The present telecommunications and information networking environment is subject to security vulnerabilities and is exposed to many risks.
- IT infrastructure in its present state will not be able to keep up with the explosive increases in information volume that are expected to occur in the times ahead. And other such issues.

|                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <b>Examples of Disruptive Innovation Called for</b> | <b>Envisioned Forms of Socioeconomic Impact</b> |
|-----------------------------------------------------|-------------------------------------------------|

Achieve a highly robust information security environment that cannot be deciphered even by supercomputer, and is in principle limitlessly undecipherable.

With advances in the conversion to fully electronic forms of personal information in ordinary households and other domestic contexts as well as in government and public systems, realize smart communities that are safe, secure, and convenient.

Using advances in information telecommunications technology itself that could not be realized by expansion of conventional infrastructure, make it possible for stable, high-speed information telecommunications like that available in urban areas to be provided even in suburbs, remote mountain areas, isolated islands, far underground, at sea, and in high-speed mobile bodies.

Achieve highly advanced functionality in society and advanced applications of knowledge in industry by the construction of a truly seamless IT environment.

Measure and transmit data on feelings of stress and of comfort that are not apparent from consumer tastes in products and services, from counseling, or from other such sources.

Significantly expand domestic consumer consumption by providing low-priced, attractive products that are what consumers actually want.

### Theme 4. Provide the world's most comfortable living environment in a society with a declining birthrate and aging population “Realize Healthy and Comfortable Lives for Everybody”

**Awareness of Issues**

- Health problems of elderly people, inconveniences of everyday life, and concerns about the healthy growth of children have not been resolved.
- There are no effective ways for people to be freed from the din of motor vehicles, railways, and so on, and to lead lives that bring them healing relief.
- There are no simple, convenient, effective ways for people to protect themselves from the toxins and hazardous substances (viruses, bacteria, explosives, substances impacting food safety, etc.) they find close at hand in their lives. And other such issues.

|                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <b>Examples of Disruptive Innovation Called for</b> | <b>Envisioned Forms of Socioeconomic Impact</b> |
|-----------------------------------------------------|-------------------------------------------------|

By means of total management of road traffic through the use of big data and other such means, achieve zero traffic accidents, dramatically relieve congestion, and realize on-demand shopping that can shorten home delivery time to minutes.

Concepts of transportation and physical distribution will change because of the realization of mobility infrastructure that is truly secure, safe, and convenient for children and elderly people.

Innovative interfaces that instantly reflect what the users intends in the equipment without the use of hands or voice, and operation-free systems that implement everything from everyday health management to near-at-hand care.

Realize secure, comfortable lives and expanded social activity for elderly and disabled people by the achievement of free communication tools that transcend language.

Provide free control of light, sound, heat, and other such factors that affect people's lives by blocking off the noise from motor vehicles, trains, and other such sources using sheets that let light through but block sound, and insulating homes, office buildings, and other such places from sound without blocking windows.

Realize a living environment that is the world's most comfortable and the most free from noise, tumult, feelings of psychological oppression, and other such negative factors, in the society with the world's most highly advanced functionality.

Taking lessons from the superior functionality of living organisms, detect and identify various trace toxins and hazardous substances that are found near at hand at once and non-destructively, non-invasively, at ultra-high speed, and with ultra-high sensitivity.

Realize a society in which the public at large can truly feel prosperous, safe, and secure by assuring safety in the home, in public places, and in other life spaces, and by providing a sense of security in people's dietary practices, wellbeing maintenance, and other such areas of their lives.

**Theme 5. Control the impact and minimize the damage from hazards and natural disasters that are beyond human knowing  
 “Realize a Resilience that is Keenly Felt by Every Individual Japanese”**

**Awareness of Issues**

- There is insufficient capability for prediction of natural phenomena, control of their effects, rapid search, rescue, and transportation when disasters occur, restoration of bridges, roads, and other such infrastructure, and assuring access in times of emergency, dealing with toxic substances, hazardous substances, and other such substances generated by disasters, accidents, or other such events by decontamination or preventing their spread, and other such readiness for dealing with natural disasters.
- There are impediments to advanced mobility in rainstorms, windstorms, nighttime, and other extreme environments, and to increasing the safety and speed of remote demolition of structures and other such heavy work. And other such issues.

| Examples of Disruptive Innovation Called for                                                                                                                                                                                                                                                                                                                                                                     | Envisioned Forms of Socioeconomic Impact                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Effectively utilize energy and minimize damage by means of technology for ultra-precise prediction of the impact of natural disasters and for localized weather forecasts that focus more finely than on the size of cities or towns using the dramatically increased capabilities of rockets and satellites (one-tenth the weight or less, observation capabilities increased by a factor of 10 or more, etc.). | Control the impact and make active use of the effects of natural disasters that are beyond human knowing by making ultra-precise predictions of natural disasters, minimizing their damage, making use of the enormous energy in natural disasters, and other such means.                                                                                                                       |
| Decontamination of toxic chemicals, bacteria, viruses, and other such hazards that have spread over wide areas by methods that are rapid, simple, and convenient, and that have no harmful effects on the human body.                                                                                                                                                                                            | Implement ultra early-stage decontamination to minimize the spread of infectious diseases that cause diarrhea, fever, and other such symptoms, using these and other such methods to achieve the rapid restoration of a secure, safe living environment.                                                                                                                                        |
| Placement of bridges and other such large structures without foundation work, rapidly, and regardless of location.                                                                                                                                                                                                                                                                                               | Realize a secure, safe society capable of dealing with a variety of disasters by such means as assuring the security of disaster victims by ultra-rapid restoration of infrastructure when disasters or emergencies occur.                                                                                                                                                                      |
| Observation and monitoring systems that can be used in bad weather, at night, or under other unfavorable conditions, and in rubble or in other such extremely confined spaces, and robots that autonomously and cooperatively conduct rapid search and rescue activities.                                                                                                                                        | Take steps such as greatly increasing the speed of rescue and relief operations, dramatically raising the rescue and relief success rate, and minimizing the highly dangerous work performed by human workers, to build truly safe social infrastructure while also realizing a prosperous society by such means as securing useful resources through autonomous maritime and seafloor surveys. |

### III. Invitation of application for program manager (PM)

#### 1. Requirements for application etc.

##### (1) Requirements for applicant

The applicant should satisfy all the following requirements.

- 1) Application should be made by one person, not by a group.
  - 2) 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.
  - 3) 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.)
  - 4) 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.
    - (i) 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 (ii) cannot be included here) with using the cross-appointment contract system (\*).
    - (ii) 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.

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

Reference table about the effort of PM

| Type of PM                              | R&D activity of ImPACT                                                                                                             | Effort for the PM activities | Effort for the non-PM activities |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------|
| Fulltime work<br>(Exclusive duty as PM) | PM does not do research by him/herself                                                                                             | 100%                         | X                                |
|                                         |                                                                                                                                    |                              | Having an additional post        |
| Above 80%                               | [In the case of an applicant who belongs to a university or public institute]<br><b>Under 10%</b><br>(As an ImPACT researcher)     |                              |                                  |
|                                         | [In the case of an applicant who belongs to a university]<br><b>Under 20%</b><br>(Teacher under 10% + ImPACT researcher under 10%) |                              |                                  |

[Note] Fulltime work as PM is the principle. The additional post can be accepted exceptionally.

5) 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

The R&D program concept proposed by the PM should satisfy all the following requirements.

In addition, based on the purport of ImPACT, the applicant should carefully consider that the proposed R&D program concept needs to be the back-casting type. In other words, the concept should start from the “exit” of this program, namely bringing about major changes in the state of industry and society.

Moreover, it is permissible to also include dual-use technology that is mutually applicable as industrial technology and as technology contributing to the safety and security of the Japanese people.

1) It should be a concept based on the theme which Council for Science and Technology Policy (CSTP) has determined.

2) 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.)

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

4) It should be a concept which can explain its necessity, validity, and feasibility based on the scientific rationale.

(3) R&D period

The R&D period in the R&D institutions is more than three years but less than five years. (However, FY2014 will be calculated as one year no matter when R&D starts.) The multi-year use of R&D expenses 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.

(4) R&D cost

The maximum (estimated amount) of the total direct expense is determined for each R&D institution, and JST will distribute the money from the ImPACT Fund within the limitation.

The details of R&D costs will be determined when finalizing the implementation

plan of R&D program after being chosen as PM. Thus, the R&D cost proposed by an applicant in the application stage can be a rough estimation.

JST will distribute the money with high flexibility to R&D institutions based on the commissioned R&D contract between JST and the R&D institutions. It can be used for the personnel expenses of researchers and their assistants, supplies expenses, 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, etc.

- 1) Goods expenses: The cost of purchasing fixtures, consumables, etc., cost of the purchase of installation and apparatus for the R&D facility mainly used for R&D
- 2) Traveling expenses: Overseas and domestic business trip expenses of researchers, research assistants, etc.
- 3) Personnel expenses: Hiring expenses of researchers, research assistants, etc., reward to the research collaborators, etc.
- 4) Others: Other costs for carrying out the R&D task.
- 5) Management cost: Up to 10% of the sum total of the above-mentioned expenses.

## 2. Selection Method

### (1) Selection procedure

- CSTP makes a decision to approve the PM after screening by the *Committee for Promotion of ImPACT Program* (hereafter the Committee) and the Panel. 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. Furthermore, the public comments on the general way of promotion of ImPACT are collected, and the comments are considered as reference in the screening process.
- Those who are chosen to be employed as PMs should conclude an employment agreement with JST promptly, should elaborate the R&D program concept proposed in the application and complete the R&D program within about three months. (Concerning the detail of elaboration, refer to “IV (2) Elaboration of R&D Program”.) The R&D activity should begin after the Panel has confirmed the completed R&D program. When the PM intends to select a

PM-related organization or an organization outside Japan as an R&D institution, the R&D activity should begin after the approval by the Promotion Committee.

## (2) Selection Criteria

The main selection criteria are as following:

### 1) 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.

### 2) R&D Program Concept Proposed by PM

#### (i) 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).

(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) Official announcement

The following contents about the application state, selection process and

selection result will be released to the ImPACT website in the Cabinet Office and CSTP. However, personal information and trade secrets and other information which are not suitable to announce to the public will not be released.

1) Application state

- The number of applicants (for each theme)

2) Selection process

- The member of CSTP, the Committee and the Panel of Experts on ImPACT Program. The summary record of proceedings of selection process.

3) Selection result

- The number of successful and unsuccessful applicants (for each theme).
- The following information on the successful applicants.
  - The name, the current affiliated institution and position of the successful applicants.
  - The outline of the R&D program concept proposed by the successful applicants.
  - The reason for selection.
- The following information on the unsuccessful applicants (who were candidates for interview as chosen by the expert committee).
  - The application filing number.
  - The reason for being not being selected.

(7) Notes

It is forbidden for applicants to perform any action which affects selection to the members of CSTP, the Committee and the Panel during the entire period of selection (from the time when the application guideline becomes open to the time when the selection result is announced). When the action concerned occurs, the name of those who performed the action concerned is publicly released, and the application related to the action concerned can be classified as unsuccessful depending upon the situation. This rule also applies to cases when the applicant uses a third party to carry out the action.

3. Application Methods

(1) Procedure of application

Applications for PM are made by submitting documents (paper document). Application documents can only be submitted by sending them to the below address. (Hand delivery is not accepted.) A method of sending that leaves a record of delivery (registered postal mail, door-to-door delivery service, etc.) is to be used, and only applications that arrive by the submission due date are considered valid. The front of the envelope should be marked "ImPACT・PM Application Documents" in red.

<Address for Application Documents>

Office of Funding Program for World-Leading Innovative R&D on Science and Technology,  
 Science, Technology and Innovation Policy Bureau, Cabinet Office  
 Central Government Building No. 4, 8 F  
 3-1-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8970  
 Tel: +81-3-3581-1143, +81-3-3581-5525

Care is required, since some documents for submission have different due dates.

(2) Schedule of application and selection

The selection is conducted through document screening and interviews. (In addition to PM applicants, those who submitted the letter of recommendation to PM applicants may be also interviewed.)

The schedule of selection is shown in the following table. However, the schedule may be changed without advance notice.

In the case that it is hard to judge whether to approve the applicant or not even after the interview, it may be necessary to clarify and revise the R&D program concept, and an additional screening may be conducted within three months (in principle) after the interview. In this case, the timing of approval may differ from those applicants approved without the additional interview.

|                                                             |                                                                                                        |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Beginning of acceptance of the summary application document | 17 March 2014                                                                                          |
| Deadline of acceptance of the summary application           | Documents received until noon of 31 March 2014 are accepted. (Deadline should be strictly adhered to.) |

|                                                                                                               |                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| document<br>(Application is accepted for printed documents.)                                                  | Necessary documents: Form 1.                                                                                                                    |
| Deadline of acceptance of the detailed application document<br>(Application is accepted by printed document.) | Document received until noon of 24 April 2014 is accepted. (Deadline should be strictly adhered to.)<br>Necessary documents: Form 2 and Form 3. |
| Period of document screening                                                                                  | Until the middle of May 2014                                                                                                                    |
| Request to attend the interview<br>(Only for candidates passing the document screening)                       | Middle of May 2014<br><Refer to note 1>                                                                                                         |
| Expected date of the interview                                                                                | Around the late of May 2014                                                                                                                     |
| Announcement of the results of selection<br>(For all applicants)                                              | After June 2014<br><Refer to note 2>                                                                                                            |
| Employment                                                                                                    | After June 2014                                                                                                                                 |

<Note 1> The expected date of the interview is planned to be announced on the website of the Cabinet Office. The applicants should prepare to attend the interview held in Tokyo on that date, although the request to attend the interview for candidates passing the document screening is expected to be done soon before the date of interview.

<Note 2> In the case that it is hard to judge whether to approve or not even after the interview, additional screening may continue after the interview.

### (3) Documents to Submit

- The PM Applicant is to create the documents for (1) and (2) below, and submit them by the due dates given in the previous paragraph.
- Documents to submit may be printed in either monochrome or in color, but should be printed so that the contents are legible in monochrome photocopies. Documents should be printed on one side and the pages fastened with paperclips (no staples to be used).
- <Form 1>, <Form 2>, and <Form 3> should all be submitted with one original and three copies each .

1) Items to be submitted by the due date for outline documents (March 31, 2014)  
(\*To be submitted as paper documents.)

(i) Basic information on PM applicant and overview of R&D program concept

proposed by PM applicant <Form 1>

- These should total no more than five pages (one page for Form 1-1, no more than two pages each for Form 1-2 and Form 1-3).

(ii) Self-addressed reply envelope (with postage stamps affixed)

- The Cabinet Office will send the PM applicant a confirmation of document arrival and a notice of screening results by postal mail. Therefore applicants should submit two rectangular No. 3 envelopes with their own name, mailing address, and postal code number written on them and 82 yen of postage stamps affixed.

2) Items to be submitted by the due date for detailed screening (April 24, 2014)

(\*To be submitted as documents (paper documents).)

(i) Basic Information on PM Applicant and Overview of R&D Program Concept proposed by PM Applicant <Form 2>

- These should total no more than 10 pages (the length of individual entries is discretionary).
- The attachment of reference materials will not be forbidden, but they should be kept strictly to a necessary minimum.

(ii) Recommendations from multiple persons (to be chosen in a strictly selective manner) attesting that the applicant has the knowledge and the capability of design, planning and management at the high level, in relation to the industry-oriented R&D activities or to the commercialization of the cutting-edge technology as a core. <Form 3>

- In the course of the screening, it is possible that recommenders will be interviewed, called on the telephone, or otherwise contacted for investigation. Applicants should therefore submit letters of recommendation from the persons who will cooperate with such investigation.
- Recommenders are not limited to the persons of Japanese nationality. Letters of recommendation may also be submitted in English.

(iii) Self-addressed reply envelope (with postage stamps affixed)

- The Cabinet Office will send PM applicants a confirmation of document arrival by postal mail. Therefore applicants should submit one rectangular No. 3 envelope with their own name, mailing address, and postal code number written on them and 82 yen of postage stamps affixed.



3) In the screening process, applicants may be required to submit the additional information by the secretariat.

(4) Points to Note

1) In the event that the secretariat has questions about the application content and related matters during the selection process, applicants may be asked to submit additional information material.

2) In the event that there are defects in the attached documents submitted, or in cases when documents submitted include matters involving violations of law or violations of public order and morality, or in cases that are contrary to forms prescribed in this application guideline, the application may not be accepted as a formal one.

4. Caveats, Etc.

(1) Management of R&D Costs, Etc.

The PM, the R&D institution, and the JST are to pay attention to the following points in managing R&D costs.

1) Measures regarding improper use of expense funds, etc.

In the event that improper use of expense funds is found in ImPACT, repayment of all or a portion of the expense funds will be sought, and those who engaged in improper use, etc., will have their participation in the program restricted for a set period of time. The period of restriction was be in accordance with the "Guidelines on the Proper Implementation of Competitive Funding " (agreement of the liaison meeting of related offices and ministries on competitive funding, revised October 17, 2012).

The substance of the improper use in question will also be provided to the parties in charge of major research organizations, including other government agencies. This may sometimes result in restrictions on applications to and participation in other research organizations.

2) Measures regarding improper acts in R&D activities

In the event that improper acts (forgery, falsification, plagiarism) are found in ImPACT R&D activities, the repayment of all or a portion of funds allocated to the R&D institution that was involved in improper acts will be demanded. In addition, that institution's participation in the ImPACT program will be restricted for a certain period of time. The period of restriction will be in accordance with

the "Guidelines on the Proper Implementation of Competitive Funding " (agreement of the liaison meeting of related offices and ministries on competitive funding, revised October 17, 2012).

Furthermore, the substance of the improper acts in question will be provided to the parties in charge of major research organizations, including government agencies. This may sometimes result in restrictions on applications to and participation in other research funding.

3) Measures regarding parties whose applications to or participation in other research funding have been restricted

With regard to parties whose applications to or participation in other research funding that are under the jurisdiction of the national government or independent administrative institutions have been restricted due to their improper use of research funds or improper acts in R&D activities, then during that period of restriction, their applications to and participation in the ImPACT program will be restricted.

4) Handling in cases of violation of relevant laws and ordinances, etc.

In the event that false content has been placed in application documents, and if R&D has been conducted in violation of relevant laws, ordinances, guidelines, etc., then the hiring of the PM and the allocation of R&D funds to the R&D program that the PM manages implementation of may be cancelled.

(2) Cases when continuation of R&D programs becomes difficult

If the following events occur, the determination regarding continuation of the R&D program will be made by the Council for Science and Technology Policy.

- 1) In the event of the death of the PM, or a ruling for commencement of guardianship has been brought against the PM
- 2) In the event that the PM has engaged in improper use of R&D funds or improper acts relating to R&D activities
- 3) In the event that other considerable reason arises to make continuation of R&D difficult

#### IV. Regarding Promotion of PM R&D Programs After a PM is Appointed

##### (1) The Responsibility of the PM

The PM bears overall responsibility for his/her R&D program, including planning, drafting proposals, and implementation.

The PM is responsible in particular for making reports and so on concerning the status of progress to the Panel. The Panel will take the substance of the report from the PM into consideration and may, if necessary, require the PM to make improvements.

##### (2) Elaboration of R&D Program

After appointment, the PM will act on the basis of the R&D Program concept proposed at the time of application for the selection of R&D institutions, the allocation of roles among R&D institutions, the planning of research implementation by individual R&D institutions, the planning of R&D fund allocations, and other such actions for elaborating and finalizing the R&D program in its ultimate form. During that process, it is anticipated that the PM will hold workshops, symposiums, idea contests, and other such events in order to incorporate views from every sector and to deepen the R&D program.

As to R&D funds, they will be administered by the Fund for Innovative New Technology Research and Development, which was established in the JST, in accordance with policy, guidelines, and so on relating to the administration of the Fund decided by the Promotion Committee.

##### (3) Selection of the Research Implementing Organization

When, in the course of elaborating the R&D program, the PM has used invitation of application, nomination, or other such appropriate method to select research implementing organizations in accordance with the purport of ImPACT to bring together Japan's top-level R&D capabilities with a variety of different knowledge, then, when confirmation from the Panel has been obtained, the PM will be able to form contracts between the JST and individual R&D institutions and to obtain their participation in the R&D program.

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. 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.

(4) PM Evaluation, Progress Management, Etc.

Pursuant to the Basic Policy for Management of the Program for Impulsing Paradigm Change through Disruptive Technologies (CSTP, February 14, 2014), the Guidelines for Handling Basic Policy for Management of the Program for Impulsing Paradigm Change through Disruptive Technologies (Committee for Promotion of ImPACT Program, February 27, 2014), and other such authorities, evaluation and progress management of the PM are to be performed by CSTP, the Committee and the Panel.

In the event that improvements demanded by the Panel are not carried out, or 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, CSTP can decide, after the matter has been deliberated and examined in the Committee, to dismiss a PM.

At the same time, the PM is able to seek the advice of the Panel. When its advice is sought by the PM, the Panel is 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.

(5) JST Support for the PM

The JST will provide the following support to make management of R&D program implementation by the PM more effective and efficient.

- (a) Formulation of strategic R&D policy by the assignment of specialized staff, management of R&D implementation, operations to assist the PM in connection

with deployment of R&D results, etc. (surveys of trends in technology, surveys of status of progress in R&D institutions, public relations, etc.)

- (b) Support for public relation and outreach activities in common with this project (holding symposiums, creating catalogs and handbooks, creating websites, etc.)
- (c) Administrative support for conclusion of commissioned research contracts, procurement of supplies, business trip arrangements, etc.
- (d) Facilitation of PM activities by conflict of interest management, security export control, and other such compliance activities
- (e) Provision of a working environment
- (f) Other necessary support

#### (6) Others

PM employment conditions are, as a rule, to be as follows, and after the determination regarding PM adoption has been made, the JST and the PM are to enter into an employment contract.

- Work location: Tokyo
- Term of appointment: Until conclusion of the R&D program (until March 31, 2019, at the longest)
- Compensation: Annual salary system. The norm is to be approximately 20 million yen per year, the figure to be decided taking individual circumstances into account. Social Insurance under the laws of Japan to be provided.
- Type of contract: Single year contract. Contract to be renewed each fiscal year.

<Contact for Secretary and Inquiries>

Office of Funding Program for World-Leading Innovative R&D on Science and  
Technology,

Science, Technology and Innovation Policy Bureau, Cabinet Office

Central Government Building No. 4, 8 F

3-1-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8970

Tel: +81-3-3581-1143, +81-3-3581-5525 Fax: +81-3-3581-9790

Website: <http://www8.cao.go.jp/cstp/sentan/kakushintekikenkyu/pmkoubo.html>

<http://www8.cao.go.jp/cstp/english/index.html>

(Forms and documents to be submitted can also be downloaded from the  
website)

N.B. No reply can be made to any inquiries about the progress in selection of  
individual proposals or other such matters.

N.B. Q&A (in Japanese) concerning this public invitation of application is slated  
to be made available at the Cabinet Office website noted above. Please refer to  
it as necessary.

# Program for Impulsing Paradigm Change through Disruptive Technologies (ImPACT)

## Forms and Documents to be Submitted by Applicant for Program Manager (PM)

### <Points to Note>

- Enter information that is current as of the time of submission.
- As a rule, use 10-point font sizes, with MS Gothic for Japanese language text and Century for English. Use single spacing.
- The use of bold and underlined text styles and drawings is allowed only in items marked respectively as "\*Text decoration permitted" and "\*Drawings permitted" The character color is to be black throughout, with the exception of characters used in drawings.
- The vertical width in tables may be changed as necessary, but alteration of the horizontal width is not permitted.
- Form 1-1 is to be on one page. Form 1-2 and Form 1-3 are each to be on no more than two pages. Where entry length for items is not specified, it is discretionary.
- Form 2 is to have no more than 10 pages in total. The entry length for each item is discretionary.
- Form 3 entry lengths are discretionary.
- No amendment of documents will be permitted after the deadline has passed. (However, amendment of the summaries of detailed documents will be permitted.)

Reference No.: \_\_\_\_\_

Form 1-1

Overview of R&D Program Concept (Summary of Form 1-2 and Form 1-3)

|                                                                     |                                                                                          |                                            |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------|
| PM Applicant                                                        |                                                                                          |                                            |
| R&D Program Title                                                   |                                                                                          |                                            |
| Name of Applicable Theme                                            |                                                                                          |                                            |
| Overview of R&D Program Concept                                     |                                                                                          |                                            |
| Background                                                          | Key Points of Disruptive Innovation<br>(Limits reached by conventional technology, etc.) | Anticipated Impact on Industry and Society |
| <p>(Please illustrate the overview of R&amp;D program concept.)</p> |                                                                                          |                                            |
| Expected Risks and Difficulty of Achievement                        | Measures to Overcome Difficulty (Hypothesis of Success)                                  |                                            |
| R&D Program Concept Deployment Framework                            |                                                                                          |                                            |

N.B. Form 1-1 is not to exceed one page in length.



Basic Information on PM Applicant

| Basic Information on PM Applicant                                                                                                                                                                |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Name                                                                                                                                                                                             |  |
| Nationality                                                                                                                                                                                      |  |
| Affiliated Institution and Position                                                                                                                                                              |  |
| Address or Domicile                                                                                                                                                                              |  |
| Profile                                                                                                                                                                                          |  |
| Academic History (Since University Graduation)                                                                                                                                                   |  |
| Employment History (Main Employment and Work Description)                                                                                                                                        |  |
| History of Other Noteworthy Activity (Social Contribution, International Activity, Other Such Noteworthy Activity Related to this Project May be Entered at Applicant's Discretion)              |  |
| PM Qualifications and Record of Performance                                                                                                                                                      |  |
| <p>&lt;Main Experience and Record of Performance in Management of Industry-Oriented R&amp;D or Commercialization of Cutting-Edge Technology as a Core.&gt;</p> <p>*Text decoration permitted</p> |  |

N.B. Form 1-2 is not to exceed two pages in length.

<Reason Why the Applicant Should be Considered Suitable as the PM Sought for this Project>  
\*Text decoration permitted

About the Recommender

Necessity of PM to have an additional post  
(\*To be completed only if having an additional post is desired by PM applicant.)

Subsidy from another funding system is provided or not (\*Complete this only if an additional post is desired by PM applicant in order to conduct a portion of the R&D by PM his/herself)

N.B. Form 1-3 is not to exceed two pages in length.

Form 1-3

Overview of R&D Program Concept

|                                                                              |
|------------------------------------------------------------------------------|
| R&D Program Title                                                            |
|                                                                              |
| Corresponding Theme                                                          |
|                                                                              |
| Keywords                                                                     |
|                                                                              |
| Overview of R&D Program                                                      |
|                                                                              |
| Contribution to the Theme (Major change in the state of industry or society) |
| *Text decoration permitted                                                   |

|                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|
| Compatibility of the concept with the purport of ImPACT (1) (High impact)                                 |
| *Text decoration permitted                                                                                |
| Compatibility of the concept with the purport of ImPACT (2)<br>(Bringing together R&D capabilities, etc.) |
| *Text decoration permitted<br>*Drawings permitted                                                         |
| Present State Analysis, Difficulty, Measures to Overcome Difficulty                                       |
| *Text decoration permitted<br>*Drawings permitted                                                         |
| Criteria for Determining Success at Program Conclusion                                                    |
|                                                                                                           |

\* Form 2 is not to exceed 10 pages in length.

|        |
|--------|
| Form 2 |
|--------|

1. Basic Information on PM Applicant

| Basic Information on PM Applicant                                                                                                                                                                |                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Name                                                                                                                                                                                             |                                  |
| Nationality                                                                                                                                                                                      |                                  |
| Affiliated Institution and Position                                                                                                                                                              |                                  |
| Address or Domicile                                                                                                                                                                              |                                  |
| Contact Information                                                                                                                                                                              | Tel: _____ E-mail address: _____ |
| Profile                                                                                                                                                                                          |                                  |
| Academic History (Since University Graduation)                                                                                                                                                   |                                  |
| Employment History (Main Employment and Work Description)                                                                                                                                        |                                  |
| History of Other Noteworthy Activity (Social Contribution, International Activity, Other Such Noteworthy Activity Related to this Project May be Entered at Applicant's Discretion)              |                                  |
| PM Qualifications and Record of Performance (1)<br>(Main Experience and Record of Performance in Management of Industry-Oriented R&D or Commercialization of Cutting-Edge Technology as a Core.) |                                  |
| *Text decoration permitted                                                                                                                                                                       |                                  |

PM Qualifications and Record of Performance (2)  
(Reason Why the Applicant Should be Considered Suitable as the PM Sought for this Project)

\*Text decoration permitted

Necessity of PM to have an additional post  
(\*To be completed only if having an additional post is desired by PM applicant)

Subsidy from another funding system is provided or not (\*Complete this only if an additional post is desired by PM applicant in order to conduct a portion of the R&D by PM his/herself)

Plans for Return to Japan (\*To be completed only if the PM applicant is domiciled outside Japan at the time of application)

## 2. R&D Program Concept

### (1) Basic Items

|                                                                              |
|------------------------------------------------------------------------------|
| R&D Program Title                                                            |
|                                                                              |
| Corresponding Themes                                                         |
|                                                                              |
| Keywords                                                                     |
|                                                                              |
| Overview of R&D Program                                                      |
|                                                                              |
| Contribution to the Theme (Major change in the state of industry or society) |
| *Text decoration permitted                                                   |
|                                                                              |
| Compatibility of the concept with the purport of ImPACT (1) (High impact)    |
| *Text decoration permitted                                                   |
|                                                                              |

|                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|
|                                                                                                           |
| Compatibility of the concept with the purport of ImPACT (2)<br>(Bringing together R&D capabilities, etc.) |
| *Text decoration permitted<br>*Drawings permitted                                                         |
|                                                                                                           |
| Present State Analysis, Difficulty, Measures to Overcome Difficulty                                       |
| *Text decoration permitted<br>*Drawings permitted                                                         |
|                                                                                                           |
| Criteria for Determining Success at Program Conclusion                                                    |
|                                                                                                           |





R&D Implementation System

\*Text decoration permitted  
 \*Drawings permitted

Main R&D Institution Roles, Necessary Expenses, Etc.

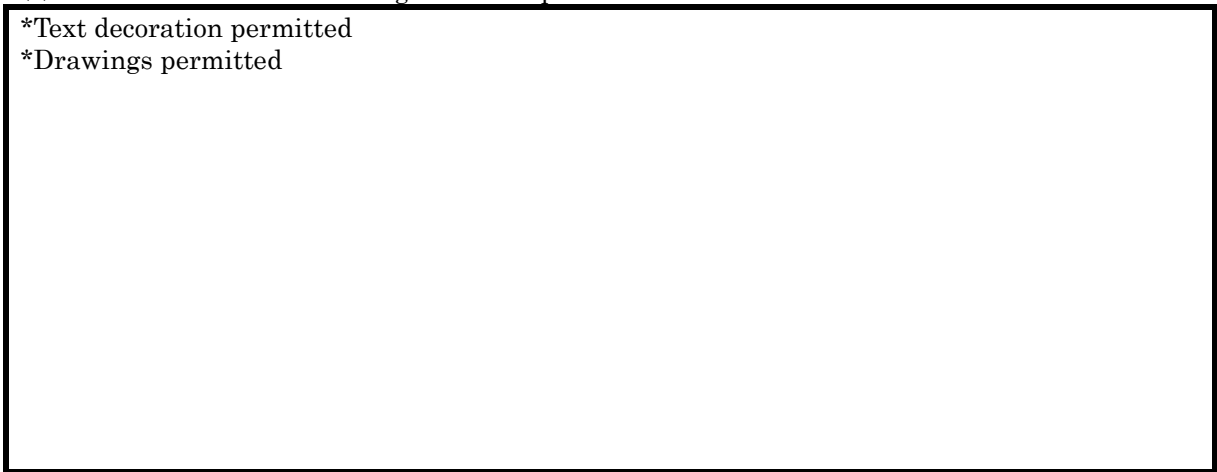
| R&D Institution | Person in Charge | Role in R&D Program Concept | Estimate of Expenses (100 million yen) | Vested Interest (Yes or No) |
|-----------------|------------------|-----------------------------|----------------------------------------|-----------------------------|
|                 |                  |                             |                                        | Yes or No                   |
|                 |                  |                             |                                        | Yes or No                   |
|                 |                  |                             |                                        | Yes or No                   |

(3) Main Changed Items from Summary Information Materials (Form 1-3)



(4) Plans Involved in R&D Program Concept Elaboration

\*Text decoration permitted  
\*Drawings permitted



**3. Information Regarding Main R&D Institution Scheduled to Participate in R&D Program**

- \* Write this concerning the main R&D institution that is definitely expected to participate in the R&D program proposed by the PM applicant. (It is permissible for there to be participating institutions other than the one stated here. However, it is desirable that all main institutions that can be considered important in judging the validity of the R&D program concept be included here. In the event that an institution stated here does not actually participate in the program, then it may be that the approval of the Panel of Experts on ImPACT Program (hereafter the Panel), which is sought as part of the R&D institution selection process, will not be obtained.)
- \* When there is more than one main institution scheduled to participate, copy this format and complete one for each institution.

**(1) Main R&D Institution Scheduled to Participate**

|                                                              |  |
|--------------------------------------------------------------|--|
| Name of Institution                                          |  |
| Name of Participating Department                             |  |
| Overview of Institution and Department                       |  |
| Record of Performance and Role                               |  |
| Remarks (Only if Applicable)                                 |  |
| Institution Connected with PM Applicant (Only if Applicable) |  |
| Institution Located Outside Japan (Only if Applicable)       |  |

**(2) Basic Information on R&D Person in Charge (One Person) Scheduled to Participate in the Program at the Institution in (1) Above**

|                                                    |                                                                                              |
|----------------------------------------------------|----------------------------------------------------------------------------------------------|
| (Name written in Japanese kana characters)<br>Name |                                                                                              |
| Affiliated Institution and Position                |                                                                                              |
| Profile                                            |                                                                                              |
| Connection with Current R&D                        |                                                                                              |
| Effort on Program (1)                              | (Time spent on program R&D activities as percentage of total work time) %                    |
| Effort on Program (2)                              | (Time spent on program R&D activities as percentage of total time spent on R&D activities) % |

4. Contact Information and Other Matters

|                                                      |                                                                               |
|------------------------------------------------------|-------------------------------------------------------------------------------|
| Contact Information<br>Relevant to Present<br>Matter | Location:<br>Postal Code:<br><br>Tel:<br>Fax:<br>E-mail:<br>Person in Charge: |
| Remarks                                              |                                                                               |

### Recommendation (English)

|                                                                                                                                                                                                                                                                                                                      |                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Recommendation for Mr./Ms.                                                                                                                                                                                                                                                                                           |                                                  |
| Title:                                                                                                                                                                                                                                                                                                               |                                                  |
| <p>(1) Reason he/she has the ability of planning and management on the business-oriented R&amp;D activities or on the business activities based on cutting-edge technology.</p> <p>(2) Other remarks, if necessary.</p> <p>※You can use your own format with including the information presented in this format.</p> |                                                  |
| Your Name                                                                                                                                                                                                                                                                                                            |                                                  |
| Title                                                                                                                                                                                                                                                                                                                |                                                  |
| Contact Information                                                                                                                                                                                                                                                                                                  | (TEL)<br>(FAX)<br>(e-mail)<br>(Person in charge) |