



# Overview of Cross-ministerial **S**trategic **I**nnovation Promotion **P**rogram (SIP)

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Director General for Science, Technology  
and Innovation Policy  
Cabinet Office



# Council for Science, Technology and Innovation (CSTI)

## 1. Functions

The CSTI is regarded as the “place of wisdom” to support the Prime Minister and his cabinet. It provides a comprehensive vision covering science and technology as a whole in Japan, and is responsible for planning and determining comprehensive and basic science and technology policies and for overall coordination at a position higher than individual ministries and agencies. CSTI was set up in the Cabinet Office as one of the policy councils on key policy fields in January 2001 under the Act for Establishment of the Cabinet Office (it was called the Council for Science and Technology Policy (CSTP) before May 18, 2014).

## 2. Roles

- 1) CSTI investigates and discusses the following matters in response to the inquiries from the Prime Minister or cabinet members:
- Basic policies for promoting science and technology in a comprehensive and planned manner.
  - Policies for the allocation of science and technology budgets and resources such as human resources, and other key issues for promoting science and technology.
  - Key issues on the comprehensive environmental improvement for promoting the creation of innovation through practical application of R&D outcomes.
- 2) Evaluation of nationally important R&D including large-scale R&D on science and technology.
- 3) Provision of advices to the Prime Minister, if required, without receiving an inquiry, specifically regarding a., b. and c. in 1).

## 3. Structure

Chaired by the Prime Minister, the council consists of 14 members including 1) Chief Cabinet Secretary, 2) Minister of State for STI Policy, 3) Ministers of related ministries (MIC, MOF, MEXT and METI) designated by the Prime Minister, 4) head of a relevant administrative office designated by the Prime Minister (President of SCJ), and 5) academic experts (7 persons) (3-year term (2-year term for those who took charge before May 18, 2014), could be reappointed).

## CSTI Expert Members (assigned by Prime Minister with the consent of both houses)



**Takahiro Ueyama**  
(Full-time member)

Former Prof. and VP of GRIPS

(3.6.'16 ~ 3.5.'19)  
(Since 3.6.'16)



**Yumiko Kajiwara**  
(Part-time member)

Managing Director, Fujitsu Ltd.

(3.1.'18 ~ 2.28.'21)  
(Since 3.1.'18)



**Motoko Kotani**  
(Part-time member)

Prof. of Tohoku University, Director of AIMR

(3.6.'16 ~ 3.5.'19)  
(Since 3.6.'16)



**Yoshimitu Kobayashi**  
(Part-time member)

Chairman, Mitsubishi Chemical HD., Chairman, JACE

(3.1.'18 ~ 2.28.'21)  
(Since 3.1.'18)



**Hiromichi Shinohara**  
(Part-time member)

Chairman of the Board, NTT

(3.6.'19 ~ 3.5.'22)  
(Since 3.6.'19)



**Kazuhito Hashimoto**  
(Part-time member)

President, National Institute for Materials Science

(3.1.'18 ~ 2.28.'21)  
(Since 3.1.'13)



**Seiichi Matsuo**  
(Part-time member)

President, Nagoya University

(3.1.'18 ~ 2.28.'21)  
(Since 3.1.'18)



**Juichi Yamagiwa**  
(Part-time member)

President, Science Council of Japan

(10.2.'17 ~ 9.30.'20)  
(Since 10.2.'17)

## [Head of related administrative agencies]

# Enhancement of the headquarters function of CSTI

## 1. Strategic formulation of overall governmental science and technology budget

CSTI will give guidance to ministries and agencies as early as the phase of estimating budgets request based on the revised “Action Plan for Important Measures of Science and Technology,” etc. This is a New Mechanism, whereby CSTI takes lead role in prioritized budget allocations for the whole government. (The Minister of state for Science and Technology policy holds the director-general level Science and Technology Budgeting Strategy Committee.)

## 2. Cross-ministerial Strategic Innovation Promotion Program (SIP)

CSTI allocates budgets beyond the framework of ministerial organizations and science and technology areas to promote overall efforts from basic study to the exit (practical application, commercialization).

## 3. Public/Private R&D Investment Strategic Expansion Program (PRISM)

The PRISM was set up in FY2018 with the aim of directing R&D measures of ministries and agencies to the “R&D investment target areas” in expectation of significant effects on the induction of private R&D investment for expanding public and private R&D investment and streamlining the efficiency of fiscal spending.

## 4. Moonshot R&D Program

Aiming at creating destructive innovation originating in Japan, challenging R&D (moonshot) is promoted based on audacious ideas which are not found in the extension of conventional technologies. With ambitious goals being set, innovative research outcomes will be discovered and developed by gathering wisdom and insight from all over the world while allowing failures.



# Program Outline

## < Features of SIP >

CSTI's top-down decision on programs, essential for society and critical for Japanese economy and industrial competitiveness, program directors (PDs) and budgets.

Cross-ministerial efforts through industry, academia and government cooperation.

Focused, end-to-end R&D from basic research to practical application and commercialization. Utilize results in reform of regulations and/or systems, special wards, government procurement, etc. Significant for international standardization.

Intellectual property management system facilitating strategic corporate use of R&D outcomes.

## < Budget >

32.5 billion yen was allocated as budget in FY2014 for Expenditure on Science, Technology and Innovation Promotion.\* (28 billion yen in FY2018 and FY2019).

\* 17.5 billion yen was allocated as adjusting expenses for medical R&D besides the above expenses.

# Program Structure

## < Implementation Structure >

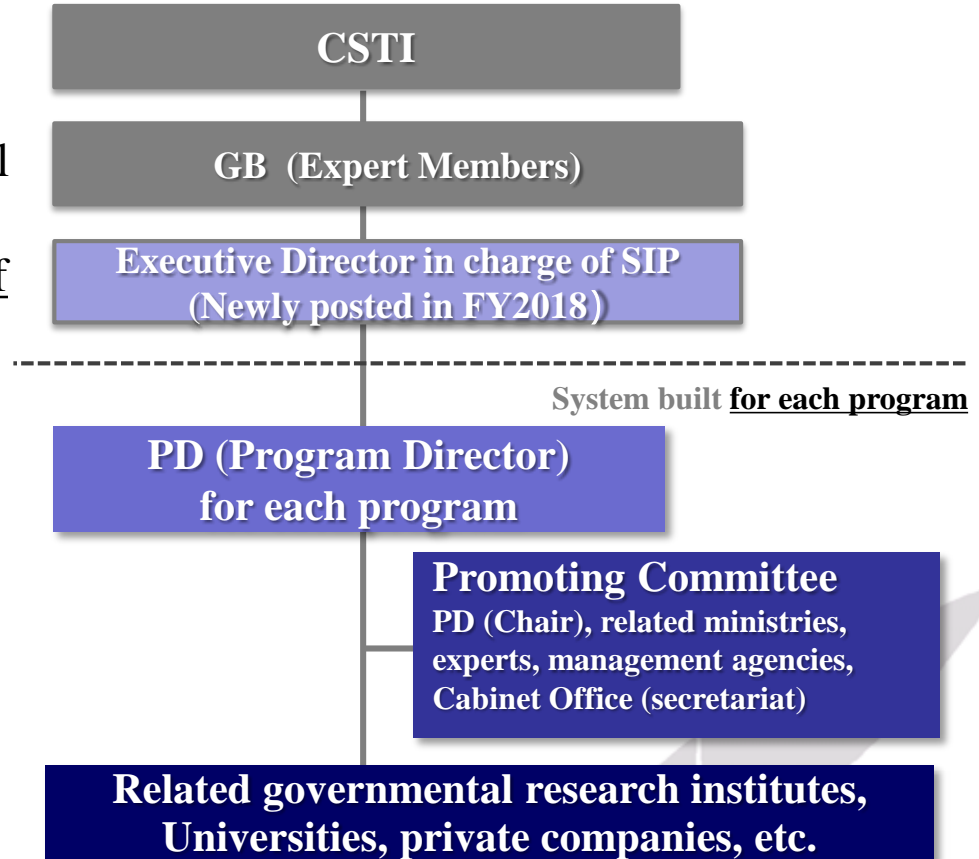
Select directors for each program (PD)

(assigned by Prime Minister with the consent of Governing Board(hereinafter referred to as GB)).

PDs break through ministerial silos, managing programs from a cross-ministerial perspective. The promoting committee chaired by the relevant PD and composed of related ministries, etc. was therefore set up.

The GB consisting of CSTI expert members is held as necessary to provide evaluation and advice for all programs.

The executive director was posted to support the GB (from FY2018).



# 2nd Term of SIP: Commencement and Budget

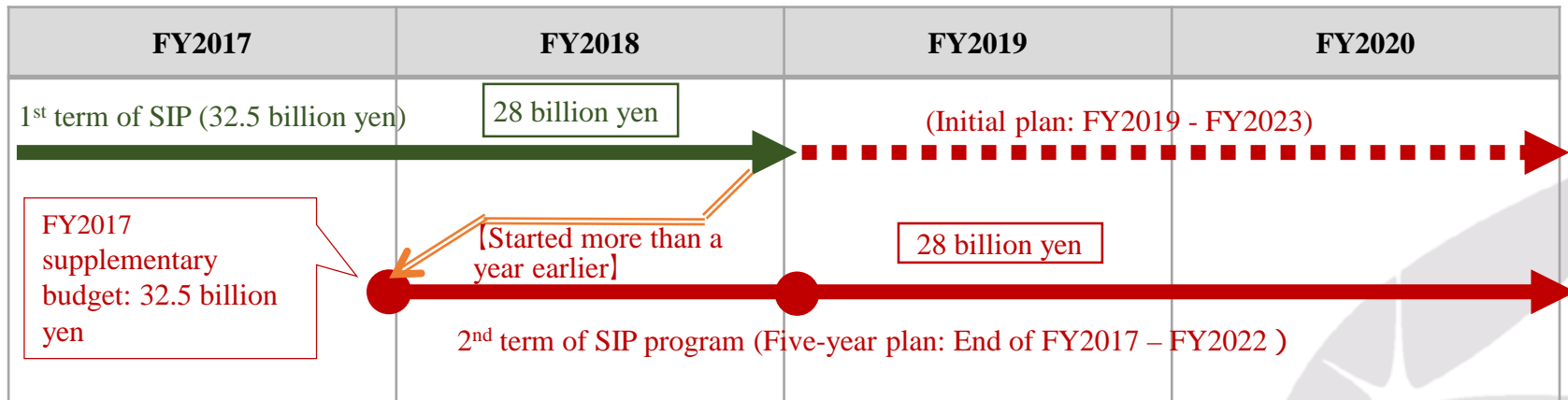
## < Commencement >

Commenced in FY2018 ahead of schedule.

Outstanding features including the promotion of cross-ministerial, industry-academia-government cooperation, clarification of exit strategy, and rigorous management, etc.  
Enhancement of international standardization and efforts for structural reform (e.g. start-ups support)

## < Budget >

32.5 billion yen was allocated as supplementary budget in FY2017 for Expenditure on Science, Technology and Innovation Promotion. 28 billion yen was allocated for FY2019.



\* 1st term of SIP program for “Cyber-security for Critical Infrastructure” will be continued up to FY2019.

# 2nd Term of SIP: Programs and Program Directors



## **Big-data and AI-enabled Cyberspace Technologies** **Yuichiro Anzai Senior Advisor and Director of Center for Science Information Analysis, JSPS**

For the purpose of maintaining and strengthening international competitiveness of technologies in this field, develop the world most-advanced human interaction technology (sensing/cognitive technologies) by incorporating linguistic and non-linguistic information in virtual space to establish a data collaborative platform and collaborations with AI, and put it into social implementation.



## **Intelligent Knowledge Processing Infrastructure Integrating Physical and Virtual Domains** **Hideyuki Saso Senior Fellow, Fujitsu Laboratories Ltd.**

For the purpose of maintaining and strengthening international competitiveness of technologies in this field, develop the world most-advanced basic technology allowing high-functioning sensing, highly effective data processing and a strong collaboration with cyber side, and put it into social implementation.



## **Cyber Physical Security for IoT Society** **Atsuhiro Goto President, Institute of Information Security**

In addition to strengthening the collaborations with western countries, develop the world most-advanced "Cyber Physical Security Measures Base" capable of being utilized for protecting supply chains as a whole, including small and medium-sized enterprises for securing various IoT devices and establishing safety and security of the whole of society towards realizing a secured Society 5.0.



## **SIP Automated Driving for Universal Services (SIP-adus)** **Seigo Kuzumaki Fellow, Toyota Motor Corporation, Advanced R&D and Engineering Company**

For joining as a main player in the intensified global competition over automated driving technologies, develop the world most-advanced core technology (collecting and distributing road traffic information including signal and probe data) as a cooperative area among automobile manufacturers, for establishing a platform to realize automated driving on general public road (level 3), and put it into social implementation.



## **"Materials Integration" for revolutionary design system of structural materials**

### **Yoshinao Mishima Professor Emeritus, Tokyo Institute of Technology, Former Chairman, NEDO, Executive Director, TSC**

To maintain and develop the strength of Japan in materials development with the aim of significantly reducing costs and development periods, develop materials integration for inverse design, which can propose optimized materials, processes and structures for required performances, and for social implementations, leading to the development of super high performance structural materials while establishing reliability evaluation techniques.



## **Photonics and Quantum Technology for Society 5.0** **Naoto Nishida Fellow, Toshiba Corporation**

To further improve international competitiveness of our strength in photonics and quantum technology, which is most important basic technology for realizing Society 5.0, develop the world-advanced processing (laser), information processing (photoelectron) and communication (quantum cryptography) utilizing photonics and quantum technology, and put them into social implementation.



## **Technologies for smart bio-industry and agriculture** **Noriaki Kobayashi Kirin Holdings Co. Ltd. Senior Executive Officer**

With the aim of sustainable growth of Japan's bio economy, demonstrate the food value chain models utilizing the "bio and digital" features in the value chain of the food industry, ranging from food production/distribution to recycling focusing on agriculture, for achieving export expansion of agricultural/processed products, strengthening production site (improvement of productivity and labor load reduction) and reducing environmental load that including the "venous industry" such as container and packaging recycling as the target.



## **Energy systems for IoE Society** **Takao Kashiwagi Professor Emeritus, Tokyo Tech, Project Leader, AES**

For the purpose of realizing social implementation of IoE in the era of Society 5.0, provide a conceptual design on energy system that contributes to optimization of energy supply and demand while conducting development of common basic technology (power electronics) and R&D for practical application (wireless power transfer system). In addition, carry out system development and standardization for social implementation.

# 2nd Term of SIP: Programs and Program Directors



## Enhancement of National Resilience against Natural Disasters

**Muneo Hori** Director-General, Value-Added-Information Generation, JAMSTEC

To minimize disaster-related damages throughout the country, develop a mechanism to share disaster-related information and build support systems available for escape guiding systems, municipalities and residents using satellites, AI and big data, and put it into social implementation.



## Innovative AI Hospital System

**Yusuke Nakamura** Director Cancer Precision Medicine Center, Japanese Foundation for Cancer Research

Develop a system called the "AI Hospital" using AI, IoT and big data to provide advanced and leading-edge medical services and improve effectiveness in hospitals (drastically reducing the burden of doctors and nurses), and put it into social implementation.



## Smart Logistics Service

**Yorimasa Tanaka** Yamato Managing Officer, Yamato Holdings Co., Ltd

To dramatically improve productivity in the whole supply chain and compete in global markets, develop an optimized production/logistics system using a full range of relevant data from production and, distribution to selling and consumption, and put it into social implementation.



## Innovative Technology for Exploration of Deep Sea Resources

**Syouichi Ishii** Advisor to Board of Directors, JAPEX

With the aim of utilizing abundant marine mineral resources in Japan's EEZ, establish and demonstrate the technology for deep sea resource surveys at a depth of more than 2,000 m ahead of the world to further reinforce and improve Japan's survey technology and increase productivity in this field, and put it into social implementation.



## Cyber-security for Critical Infrastructure

**Atsuhiko Goto** President, Institute of Information Security

Conduct R&D on operation monitoring, and analysis technologies including authenticity/integrity verification technologies for control/communication devices, which will contribute to strengthening international competitiveness of the important infrastructure sector and stable management of the Tokyo 2020 Olympic and Paralympic Games. (End in FY2019)

