

National Research and Development Agency Council

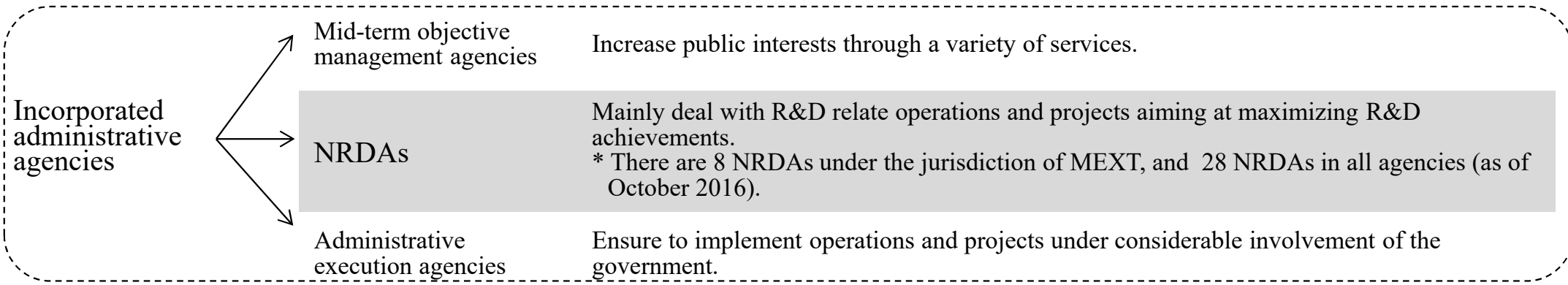
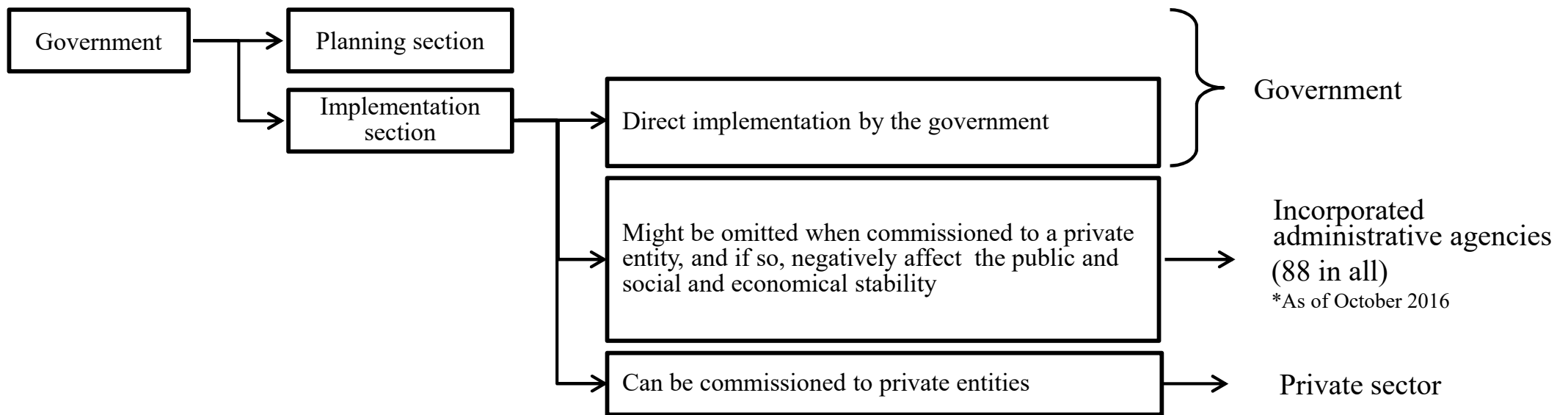
June 2017

Science and Technology Policy Bureau

Ministry of Education, Culture, Sports, Science and Technology

National Research and Development Agency System

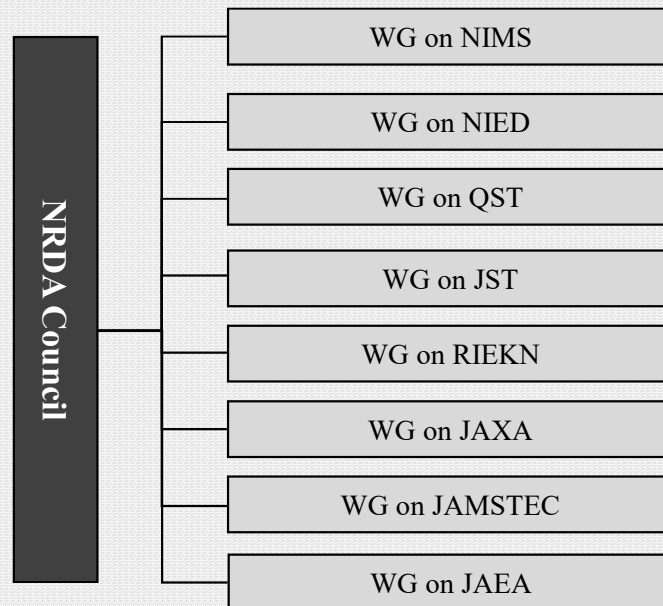
- Incorporated administrative agencies carry out business operations and projects that must be implemented to meet public needs but not necessarily by the government, and could be omitted when commissioned to the private entity.
- The need for handling R&D separately from other projects allocated to incorporated administrative agencies has been recognized due to its long-term nature, uncertainty, unpredictability and disciplinary as well as other characteristics, and in April 2015 incorporated administrative agencies which mainly handle R&D were classified as the national R&D agencies (NRDAs).
- NRDAs are given legislative measures differing from those for incorporated administrative agencies according to the R&D characteristics.



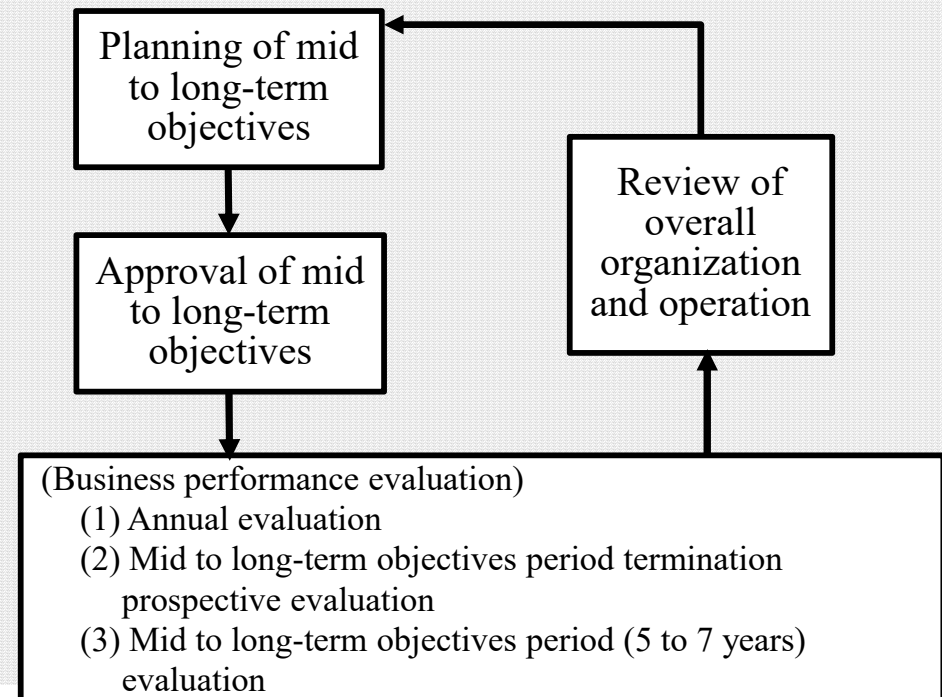
National Research and Development Agency Council

- The National Research and Development Agency Council was founded in the Ministry of Education, Culture, Sports, Science and Technology (MEXT) pursuant to the revision of the Act on General Rules for Incorporated Administrative Agencies (April 2015).
- Sub-committees (WGs) were established in the NRDA Council for discussing matters relating to eight NRDA's under the jurisdiction of MEXT.
- The NRDA Council gives advice to the competent minister concerning NRDA's based on scientific knowledge, including (1) planning of mid to long-term objectives, (2) business performance evaluation, and (3) review of overall organization and operation.
- A council system including foreign members was established according to international standards.

Composition of NRDA Council



Objective-evaluation cycle



Schedule of NRDA Council (Image)

	Minister of MEXT	Council	3 WGs (End of mid-term period in FY 2017: RIKEN, JAXA) (End of mid-term period in FY 2018: JAMSTEC)	5 WGs (Other: NIMS, NIED, QST, JST, JAEA)
2017 May		Council (1) Launch (operation of council)		
End of June	Submission of self-evaluation from NRDA			
July			WG (1) - (3) Business performance evaluation, review of organization and operation <small>(Note) Planned No. of WG sessions</small>	WG (1) - (2) Business performance evaluation
Early August	<ul style="list-style-type: none"> Decision of business performance evaluation Decision of review of organization and operation <p>MIC committee: Inspection of only objectives period prospective evaluation results</p>	Council (2) Business performance evaluation, review of organization and operation		
Middle of December		Council (3) New mid to long-term objectives (draft)	WG (4) New mid to long-term objectives (draft)	Change mid to long-term objectives as required.
2018 Middle of January	<ul style="list-style-type: none"> Decision of new mid to long-term objectives plan <p>Checked by MIC committee</p>	Council (4) New mid to long-term objectives (draft)		
End of February	<ul style="list-style-type: none"> Decision of new mid to long-term objectives ⇒ From minister to NRDA <p>Checked by MIC committee</p>			
By end of March	<ul style="list-style-type: none"> Approval of new mid to long-term objectives 			

Procedure of Discussion (Image)

(Business performance evaluation)

(1) Annual evaluation (2) Mid to long-term objectives period termination prospective evaluation (3) Mid to long-term objectives period evaluation

1. Advance distribution

- Materials including self-evaluation and supplemental explanation submitted by the agency are distributed to the committee members in advance.



2. Sub-committee (WG)

- (1) Briefing according to the self-evaluation submitted by the agency
 - (2) Discussion about the evaluation draft proposed by MEXT based on the self-evaluation of the agency
 - (3) Summary of opinions about the evaluation draft
- * Discussion should include issues potentially common to NRDA's (e.g. operation of systems).



3. Council

- (1) Presentation of above summary of opinions by the chair of relevant WGs
- (2) Decision of the opinion of the council for the business performance evaluation



4. Decision by the Minister of MEXT

- Decision of the business performance evaluation for NRDA's based on the opinion of the council

* The actual procedure of discussion will be decided by the council and sub-committees.

Procedure of Discussion (Image)

(Review of clerical and administrative work/mid to long-term objectives/mid to long-term plan)

* RIKEN and JAXA in FY 2017, and only JAMSTEC in FY 2018

1. Preparation of a draft by NRDA/MEXT

- The following drafts are prepared by NRDA and MEXT with sufficient communication:
 - Review of clerical and administrative work (draft): Prepared by MEXT
 - Mid to long-term objectives (draft): Prepared by MEXT
 - Mid to long-term plan (draft): Prepared by relevant NRDA (approved by MEXT)

2. Sub-committee (WG)

- Briefing on the above draft by the relevant NRDA/MEXT, and preparation of the summary of opinions

3. Council

- Presentation of the above summary of opinions by the chair of relevant WGs
- Decision of the opinion of the council for these drafts

4. Decision by the Minister of MEXT, etc.

- Decision of the review, etc. (approval for the mid to long-term plan) for NRDA based on the opinion of the council

* The actual procedure of discussion will be decided by the council and sub-committees.

Standards for Evaluation of NRDA under the Jurisdiction of MEXT

(The Standards for Evaluation of Incorporated Administrative Agencies under the Jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology (decided by the Minister of MEXT on June 30, 2015))

- Evaluation consists of five grades of rating, i.e., S, A, B, C and D (B as a standard rating).
- Five grades of rating for the R&D related business performance and projects are defined below.

Taking account of the overall activities of agencies, including results of activities and efforts of agencies as well as various reasons, the grades of rating are defined as follows in relation to the maximization of R&D achievements under the proper, effective and efficient operation **based on the purposes, services and mid to long-term objectives** of NRDA:

S	<p>Creation of <u>particularly outstanding achievements</u> or <u>potential for the creation of special achievements in the future</u> is identified.</p> <ul style="list-style-type: none"> •In terms of the evaluation criteria for the “scientific significance of achievements or activities (e.g. originality, innovativeness, pioneering nature or expandability)”, those which have especially notable significance, for example, “world’s first achievement or achievement that overrides existing concepts” and “resulting in a breakthrough or innovation in the field,” or “achievement of the highest global standards.” •In terms of the evaluation criteria for the “contribution to the revitalization or advance of industrial and economical activities,” those which make especially excellent contributions, for example, to “great advance towards commercialization with clear roadmap for practical application of world’s first achievement in the field.” •In terms of the evaluation criteria for the “contribution to the creation of social values (e.g., safe and secure society),” those which are considered to make especially excellent contributions, for example, to “new insights resulting from R&D to be reflected in the standards, policies and initiatives of the government and public agencies, especially contributing to the improvement of social life.” •In terms of the evaluation criteria for the “management and human resources development,” those which make especially excellent contributions, for example, to “outstanding research results by a newly established collaboration involving domestic and foreign universities, incorporations, and private entities, etc.” or “the implementation of an initiative accelerating the development of a large number of capable researchers and engineers and promotion of their participation to R&D in fields which are politically important but suffer a shortage of manpower.”
A	<p>Creation of <u>outstanding achievements</u> or <u>potential for the creation of achievements in the future</u> is identified.</p> <p>(Insufficient for rating S, but there are an appreciable extent of significance, achievements and contribution in finding outcome)</p>
B (Standard)	<p>Creation of <u>achievements</u> or <u>potential for the creation of achievements in the future</u> is identified, and <u>business operation is sure and steady.</u></p>
C	<p><u>Further</u> innovations and improvements are to be expected.</p>
D	<p><u>Extensive</u> innovations and improvements, including <u>radical revision</u>, are required.</p>

Examples of Evaluation of NRDA under the Jurisdiction of MEXT (NIMS)

Evaluation of business performance in FY2015
Annual evaluation, record of evaluation by item, evaluation by competent ministers (excerpts)

S

I. 1.1.11) Advanced Key Technologies Field
Numerous world's first or best **particularly outstanding achievements** have been obtained in the fields of measurement technology, etc. which are commonly required for proceeding material R&D, and this contributes to establishing a world's leading, advanced key technology infrastructure essential for solving issues in the material study in Japan and abroad, and creating science, technology and innovation. Further efforts for maximizing these achievements are expected through the clarification of applications of achievements obtained and equipment developed so far, and dissemination and distribution of the results.

[Major research outcomes]

(1) In the development and application of advanced material measurement technology, 1) the world's highest magnetic field (1,030 MHz) was achieved in a solid NMR system using high-temperature superconductor discovered by NIMS, and the a measurement technology center was founded in collaboration with a domestic manufacturer which competes with a corporation having the world's largest share for the development in this field, and 2) manufacturing process for LaB6 single-crystal nanowire, which is assumed to maintain its high performance over 40 years and expected to be used as the electron source of electron microscopes, etc., has been successfully developed, allowing a stable supply of far brighter electron sources (more than 100 times the conventional levels).

(2) In the R&D of new material design and simulation techniques, practical problems in computing the architecture optimization and energy eigenvalue of 200 thousand atomic systems, achieved by the previous fiscal year using a calculation technique (the first principles order-N DFT program CONQUEST) which may clarify the complex structure and phenomena of actual materials and devices with a high degree of accuracy.

(3) In the material development technology using organic molecular networks, rigid carbon filters, which are expected to be applied to industrial filters, were successfully developed, allowing the minimization of film thickness, high pressure resistance and improvement in the percolation rate of water (a large increase in desalination performance), and there is hope for mass production.

A

I. 1.1.12) Nanoscale material field
Outstanding achievements, which are pioneering in this field, have been obtained, including the development of infrared detector elements with world-leading wavelength resolution and bio-adhesive having a closure and adhesion effect of ore than 10 times the articles on the market, and the formulation of a nationwide alliance for the Membrane-type Surface Stress Sensor (MSS), and their potential applications have also been indicative. In addition, the number of the world top 1% papers and the number of cited papers are also high. It is highly desired to obtain excellent results in the future while actively using the other equipment in the other fields in NIMS, fostering young researchers, clarifying visions in the development from basic technology to application, and allocating resources in prioritized areas. Also desired are the dissemination of data including lectures and the number of papers by domestic and overseas authors, formulation of new fields based on the NIMS papers, and collaboration with other organizations.

B
(Standard)

I. 3.2 Development of researcher and engineers and improvements in their qualification
The development of researchers and engineers, and improvements in their qualification **have been steadily promoted**. This includes long-term overseas deployment of staff members under the age retirement system, dispatch of lecturers to universities, planned employment and training of engineers, and acceptance of young researchers more than the targeted number. Ways to hand down technology and engineer's activities may be discussed in the future.