Evaluation of FY2015 Operating Results for Japan Aerospace Exploration Agency

October 2016
Prime Minister
Minister for Internal Affairs and Communications
Minister of Education, Culture, Sports, Science and Technology
Minister of Economy, Trade and Industry

Form 2-1-1　FY Evaluation / Overview of the Evaluation

1. Items related to the evaluation		
Agency	Japan Aerospace Exploration Agency	
FY for evaluation	FY evaluation	FY2015 (3rd term)
	Mid to long-term objective period	FY2013-FY2017

2. Items related to the assessor				
The Competent Minister		Prime Minister		
	Incorporated jurisdiction dept.	National Space Policy of the Cabinet Office	Dept. and person in charge	National Space Policy of the Cabinet Office, Counselor, Makito Takami
	Evaluation and inspection dept.	Policy Evaluation Public Relations Division, Minister's Secretariat	Dept. and person in charge	Policy Evaluation and Public Relations Division, Director, Masafumi Yokota
The Competent Minister		Minister of Internal Affairs and Communications		
	Incorporated jurisdiction dept	Global ICT Strategy Bureau	Dept. and person in charge	Space Communications Policy Division, Director, Nagahisa Oima, Director, Takao Nitta
	Evaluation and inspection dept.	Policy Evaluation Public Relations Division, Minister's Secretariat	Dept. and person in charge	Policy Evaluation and Public Relations Division, Director, Akira Kawai
The Competent Minister		Minister of Education, Culture, Sports, Science and Technology		
	Incorporated jurisdiction dept.	Research and Development Bureau	Dept. and person in charge	Space Development and Utilization Division, Director, Yoshinori Horiuchi
	Evaluation and inspection dept.	Science and Technology Policy Bureau	Dept. and person in charge	Planning and Evaluation Division, Director, Director, Naohisa Murakami
The Competent Minister		Minister of Economy, Trade and Industry		
	Incorporated jurisdiction dept.	Manufacturing Industries Bureau	Dept. and person in charge	Space Industry Office, Office Director, Masanori Tsuruda
	Evaluation and inspection dept.	Policy Evaluation Public Relations Division, Minister's Secretariat	Div. and person in charge	Policy Evaluation and Public Relations Division, Director, Tomoyoshi Yahagi

3. Items regarding implementation of the evaluation
June 2, 2016　Field visit by Sub-Committee members of Japan Aerospace Exploration Agency (JAXA) Subcommittee under the Ministry of Education, Culture, Sports, Science and Technology (JAXA Tsukuba Space Center)
June 9, 2016　Field visit by Sub-Committee members of JAXA under the Ministry of Education, Culture, Sports, Science and Technology (JAXA Chofu Aerospace Center)
June 29, 2016　Field visit by Sub-Committee members of JAXA under the Ministry of Education, Culture, Sports, Science and Technology (JAXA Sagamihara Campus)
July 4, 2016　Hearing about operating results of JAXA by the Ministry of Economy, Trade and Industry The coverage of the hearings: I. 3. Maintaining and enhancing the foundations of the space industry and scientific technology (part), I. 5 Cross-sectional matters
July 5, 2016　Joint hearing on the operating results of JAXA by the Ministry of Internal Affairs and Communication and the Ministry of Education, Culture, Sports, Science and Technology The coverage of hearings: I. 1. Ensuring space security, I. 2. Promotion of space use in the field of consumer affairs, I. 3. Maintaining and enhancing the foundations of the space industry and scientific technology (part), I. 4. Aeronautical technology, I. 5. Cross-sectional matters (* only MEXT for I. 4.)

July 6, 2016　Hearing about operating results of JAXA by the Ministry of Internal Affairs and Communication The coverage of hearings: II. Measures to be taken to achieve the goals concerning the efficiency of business operation, III-VII. Matters/budget concerning improvement of financial contents, VIII. 1. Facilities and equipment related issues, VIII. 2. Plans for personnel, VIII. 3. Safety and reliability related issues July 7, 2016　Hearing about operating results of JAXA by the Ministry of Education, Culture, Sports, Science and Technology The coverage of hearings: II. Measures to be taken to achieve the goals concerning the efficiency of business operation, III-VII. Matters/budget concerning improvement of financial contents, VIII. 1. Facilities and equipment related issues, VIII. 2. Plans for personnel, VIII. 3. Safety and reliability related issues July 19, 2016　Hearing in the Sub-Committee of JAXA under the Ministry of Internal Affairs and Communication July 20 2016　Hearing about operating results of JAXA by the Cabinet Office The coverage of hearings: I. 1. Ensuring space security, I. 2. Promotion of space use in the field of consumer affairs, I.3. Maintaining and enhancing the foundations of the space industry and scientific technology (part), □. 5. Cross-sectional matters July 21, 2016　Hearing in the Sub-Committee of JAXA under the Ministry of Education, Culture, Sports, Science and Technology July 25, 2016　Hearing in the Sub-Committee of JAXA under the Ministry of Economy, Trade and Industry July 28, 2016　Hearing in the National Research and Development Agency Council under the Ministry of Internal Affairs and Communication July 29, 2016　Hearing in the Sub-Committee of JAXA under the Cabinet Office August 2, 2016　Hearing in the National Research and Development Agency Council under the Ministry of Education, Culture, Sports, Science and Technology August 4, 2016　Hearing in the National Research and Development Agency Council under the Ministry of Economy, Trade and Industry

4. Important items and others relating to the evaluation
In light of the “Basic Plan on Space Policy” (as determined by the National Space Policy of the Cabinet Office on January 9, 2015), the realignment of items under medium-term objectives and medium-term plan took place in March 2015 in line with the three policy goals set forth in the Basic Plan on Space Policy in March 2015.

Form 2-1-2　FY Evaluation / Overall Rating

1. Overall evaluation							
Rating*1 (S, A, B, C, D)	B: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievement, efforts and so on through its activities, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward "maximizing the achievements of research and development results" were recognized, and steady business operations have been also recognized.	(Reference) Overall rating situation for the past FY years compared with the same period during this FY *2					
			FY2013	FY2014	FY2015	FY2016	FY2017
		Quality improvement business	A	A	B		
		Efficiency of business operations	A				
		Improvement of financial conditions	A				
Reasons for rating	JAXA is working on diversified business operations, including advanced research and development to achieve the three goals: (1) ensuring space security, (2) promotion of space use in the field of consumer affairs, (3) maintaining and enhancing the foundations of the space industry and scientific technology, which are listed in the Basic Plan on Space Policy, newly formulated in January, 2015 In the "Subcommittee on Japan Aerospace Exploration Agency" under the Cabinet Office and the "National Research and Development Agency Council" under the Ministry of Internal Affairs and Communications, the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Economy, Trade and Industry, the work performance for FY2015, which falls on the third fiscal year of the period for JAXA's third medium-term objectives, was deliberated in accordance with social insight, scientific knowledge and international standard and others, based on the report for work performance submitted by JAXA, and advice was given. What should be mentioned specifically as a performance record for FY2015 is that ASTRO-H "Hitomi" caused a serious accident of losing the concerned satellite totally just after its launch. JAXA itself rates the project as "C," referring not only to individual items of space science and exploration, but also to items related to internal controls, governance enhancement, safety and reliability. The self-evaluation is considered to be reasonable. However, an eye should be kept on the noteworthy fact that individual scientific and exploration projects other than ASTRO-H "Hitomi" (Venus explorer "Akatsuki" and asteroid explorer "Hayabusa 2") have achieved significant outcomes in FY2015. On the other hand, JAXA is considered to have achieved remarkable outcomes in space transportation system, and aviation science and technology, such as the world's first and the world's highest level of research and development, and operation performance. The space transportation system maintains the world standard, as shown by the launch success rate of 97% for H-IIA/B rockets. Especially the success of launching a replenishment aircraft by the H-IIB rocket appealed the high reliability of Japan's rockets to the world, since the U.S. and Russia's rockets in charge of carrying supplies to the International Space Station (ISS) failed one after another, causing the ISS operation to become tense. The on-time launch rate of Japan's rockets also recorded 93% in the past 5 years, by far superior to the world standard. In addition, it demonstrates Japan's high technical strength and high level of operation of core rockets that the launch capability greatly improved by the development of advanced rocket technology led to a success of launch of commercial rockets, contribution to the order of satellite launch service which Japan received from UAE (United Arab Emirates). With regard to aviation science and technology, the drastic reduction of sonic boom, which is regarded as one of the issues standing against realizing private supersonic aircraft, was demonstrated, whereby Japan acquired low sonic boom aircraft design technology ahead of other countries. In this way, the agency created extremely high standard outcomes, such as making it possible to advance from the assessment index review phase to the noise certification standards development phase, i.e., to the stage closer to practical use, in the course of international standards development concerning the sonic boom of the United Nations Civil Aviation Organization (ICAO). Based on the above, comprehensively taking into account the business performance of JAXA in FY2015 in terms of the outcomes of corporate activities and its efforts, in light of the objectives, operations and medium-term objectives of a National Research and Development Agency, it is concluded that steady business operation was carried out, together with expectations of achieving the current and future outcomes toward the "maximization of National Research and Development Agency."						

2. Evaluation of the whole agency
○We believe that research and development and efforts towards utilization have generally advanced steadily, excluding "Hitomi," as indicated by the use of JEM, successful replenishment mission of HTV-5, progress of

actual use of “Daichi No.2,” etc. and progress of the mission of “Hayabtusa 2.” Among other things, it is acknowledged that particularly remarkable outcomes were achieved in the field of “space transportation system” and “aeronautical science and technology,” including the world's first and highest level of research and development and operational performance.

○We judge that the agency has steadily implemented the annual plan based on the medium-term plan, achieving outcomes that are considerably higher than the intended object as a whole. In the next fiscal year, we expect the agency to demonstrate its potential ability so that the agency can continue to produce outcomes far exceeding the target in the medium-term plan.

○The agency has not only produced significant outcomes in research and development related to rockets and satellites, manned space activities, space science and exploration, etc., but it has also become an organization which various ministries and organizations rely on in satellite remote sensing and satellite communication/broadcasting, etc. Now JAXA has been asked for specific cooperation/contribution internationally, especially in Asian countries, this being an indication that JAXA has improved in reliability.

○The agency has continued to make more efforts than before for informing not only space-related stakeholders but also the general public of the space and JAXA. Thanks to various efforts, those who had too little information to understand the universe have been able to learn it deeply. Nevertheless, it is a fact that either the universe or JAXA is still unfamiliar to the public, so the agency is asked to make further efforts.

○It is highly evaluated that JAXA made it possible to launch approximately 50% of geostationary satellites, while only about 7% was launched in the geostationary satellite market worldwide so far, by establishing H-IIA’s re-ignition technology (world's first), and greatly improving launch capability due to the development of advanced rocket technologies, such as achievement of the world’s top satellite impact level, thereby realizing the entry into the full-scale international market. In addition, particularly remarkable outcomes are acknowledged in “space transportation system,” such as contribution to the acceptance of order for satellite launching service from UAE based on advanced technology development, achievement of the world's top on-time rate and steady fulfillment of the fundamentally stable rocket operation, including 100% successful launching of H-IIB rocket.

○Based on the serious accident of losing the entire ASTRO-H “Hitomi,” further ingenuity and improvement are required in “space science/exploration.” Meanwhile, outstanding scientific achievements were produced by scientific satellites under operation, such as peer-reviewed papers for 298 academic journals including 51 highly cited papers. Furthermore, Venus explorer “Akatsuki” was put into the Venus orbit, this being Japan's first orbit launch into the orbit of solar system planets other than the earth, from which scientific discovery is expected that is extremely important for the elucidation of the mystery of Venusian atmosphere.

○It is also highly evaluated that, in “manned space activities,” the mission was completed successfully as scheduled in response to emergency requests from NASA under the circumstances that the success of Japanese HTV is indispensable because of the successive failures of U.S. and Russia’s supply machines. Furthermore, it deserves evaluating that the only one technology and high reliability of the International Space Station Japan Experiment Module (JEM) continues. On the other hand, though concluding a comprehensive paid contract with drug discovery research and development venture companies can be evaluated, concrete outcomes are yet to come. Taking into account the cost of about 40 billion yen per year and the performance in FY2015 together, it is considered that remarkable outcomes are realized

○The fact of demonstrating civil supersonic aircraft design technology to realize a low sonic boom first in the world is considered significant and deserves a great note. In addition, not only technical aspects but also the leading role Japan has fulfilled in formulating standards development of technology in international sonic boom is significant in terms of Japan’s international presence.

3. Issues to be solved and /or improved for each subject

○In FY2015 JAXA started as a National Research and Development Agency, and is required to implement the PDCA cycle to realize the maximization of R&D achievements. The annual evaluation corresponds to “C” in the PDCA cycle, but “C” is basically discussed with “A” as a set. Therefore, it is a subject for discussion to clarify the tasks and how to respond in the future, based on the evaluation. In the future self-evaluation report, we expect a description equivalent to “A” on tasks and future response to be improved for each evaluation item.

○The damage caused by the accident of ASTRO-H “Hitomi” is large, which relates to the range of business operation carried out in FY2016, but it can be evaluated that the agency promptly investigated the causes to work out a reform plan of the project promotion system. The agency should devise measures to eliminate artificial mistakes in the process from planning, designing and manufacturing to post-launch operation without making a trade-off between scientific exploration and securing of safety, and then dare to take on a scientific challenge. Also, the agency is asked to make positive use of the problems pointed out in the Sub-Committee report on abnormal events of ASTRO-H “Hitomi” as learning lessons.

○Human resource development is an important mission of JAXA, and the agency is asked to continue working hard on this matter. By expanding such efforts too much, however, the agency should refrain from increasing the burden on core researchers and excessively squeezing the resources originally intended for the promotion of academic research and projects.

○As for ASTRO-H “Hitomi,” it was shown that there was a problem in project management at ISAS, and the review of the management system is under way based on the prompt analysis of the cause. With regard to the review of the project management method at ISAS, it is reported that the agency is going to try newer management methods than SLIM while reviewing projects under development and operation, but it is necessary to conduct PDCA on the new management method. As far as the new project management methods are concerned, a review is conducted mainly on the project management structure, shared roles and responsibilities with companies, and quality control and review at ISAS, but it is concerned that the thorough management will cause a significant cost increase. To make the efficient and reliable performance of projects, it is considered necessary to build a management system according to the project scale, and therefore a follow up on efforts aimed at both building a fundamental management concept and ensuring the efficiency, reliability and quality of projects is considered to be necessary.

○”Measures for strengthening industrial base and science/technology base that support individual projects” and “Comprehensive efforts to expand use” are rated as B, but industrial promotion is an important task as positioned as a pillar in the Basic Plan on Space Policy. Accordingly, it is expected that JAXA will be able to earn A and S grades by setting specific goals for industrialization and creating mechanisms for an internal

evaluation system to encourage motivating efforts as the entire organization including the research and development departments towards achieving the goals.

4. Other items	
Main opinions of the National Research and Development Agency Council	○It is particularly noticeable that H-□A was able to enter the full-fledged international market due to its advanced features, leading to increased demand for bidding from overseas customers, and acceptance of order for the launch from UAE, and the creation of special outcome is expected in the future as well. Thus the rating of "S" is appropriate for "space transportation system." ○As far as "Space science and exploration project" is concerned, the creation of remarkable scientific outcomes is acknowledged in items other than ASTRO-H "Hitomi" (for ASTRO-H "Hitomi," there are outcomes achieved based on the Perseus Clusters before its mission loss), and therefore the evaluation is rated high on that point. ○The result of the low sonic boom design concept demonstration project (D-SEND) is to solve the problem of low sonic boom, which is one of the big bottlenecks for practical application of supersonic aircraft, and it is considered to be a significant achievement that Japan acquired the low sonic boom aircraft design technology, for which flight is proven, being able to lead the world in the supersonic aircraft design. ○Disclosure of the accident assessment of ASTRO-H "Hitomi" is highly evaluated by other industrial sectors as well, and we believe it will contribute to the improvement of safety and reliability of Japanese industry. ○The agency is proceeding with space use by widely expanding business operation to a great extent, including newly established exploration innovation hub, start of the first large-scale project jointly with JICA, and cooperation with the Ministry of Land, Infrastructure and Transport and the Ministry of Defense, etc. On the other hand, it is necessary to keep an eye more carefully not only on the short term use of resources but also on their distribution within the organization, including for future-oriented research and technology development. ○Given that ASTRO-H "Hitomi" as well as other science missions are having trouble, it is necessary to develop a new mechanism to improve the efforts as an organization, thereby making it possible for researchers who make things, operate, and use data to attain achievements. ○It is an important point leading to the future whether or not countermeasures are taken accurately by grasping the problem causing the failure of ASTRO-H "Hitomi." In particular, the process is judged as taking place properly that clarifies the mechanism of how trouble occurs and its cause, but it should proceed with caution while taking advantage of the progressiveness and flexibility featuring the mission of ISAS. In light of the fact that authority and operations concentrate on a small number of project managers of ISAS, it is necessary to aggressively and steadily foster such managers for the next-generation, thereby making the layer of project managers thick. ○We think it is important that management should prevent any trouble as well as deal with it when it actually occurs. Appropriate measures were taken against the trouble of ASTRO-H "Hitomi" that lost its mission. For "Hayabusa" and "Akatsuki" developed by ISAS, the mission loss was avoided but, if viewed differently, it may be said that troubles occurred often. From these troubles, it is not possible to directly predict a mission loss of ASTRO-H "Hitomi," but it needs to be verified from the management aspect whether or not the problem was overlooked as one of various troubles that occurred recently in ISAS projects, including "Hayabusa" and "Akatsuki." ○While reorganizing the organization and establishing "First Space Technology Division," the agency is working on reforms to diversify the operational content for expansion of space use. Given that budget and personnel are limited, however, there is a need to verify what kind of effect and outcome these reforms are producing. ○In "maximization of R&D achievements," it is recognized as important not only to conduct research and development of new technologies and acquire knowledge, but also to return the outcomes to the betterment of people's lives through actual utilization and social implementation. In case of the latter, however, the contribution of JAXA is difficult to learn since there are many things provided by private businesses and JAXA does not directly commercialize them. Accordingly, it is necessary to consider "branding" that makes the contribution of JAXA clearer and "visible."
Auditor's special comments	No special matters to note

*1 S: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward "maximization of R&D achievements" under the conditions of appropriate, effective and efficient operations are recognized.

A: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business

achievements, efforts and so on through its activities, the creation of considerable achievements, anticipated creation of achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective and efficient operations are recognized.

B: Based on the National Research and Development Agency’s aims, business, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievement, efforts and others, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward “maximization of R&D achievements” were recognized, and steady business operations have been also recognized.

C: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, the creation of achievements, further drastic efforts and improvements toward “maximization of R&D achievements” or “the appropriate, effective and efficient operations” are anticipated.

D: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, special efforts and improvements including a fundamental drastic review, toward “maximization of R&D achievements” or “the appropriate, effective and efficient operations” are required.

【Other than administrative work and projects regarding research and development (After II)】

S: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized quantitatively and qualitatively in the mid to long-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned mid to long-term values (or planned FY value), and remarkable performance is also recognized qualitatively.

A: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized in the mid to long-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned mid to long-term values (or planned FY value).

B: Performance exceeding the intended objectives is recognized in the mid to long-term plan (in terms of quantitative indicators, 100% or more but less than 120% vis-à-vis planned mid to long-term values (or planned FY value).

C: Performance falls below the intended objectives in the mid to long-term plan, requiring improved performance (in terms of quantitative indicators, 80% or more but less than 100% vis-à-vis planned mid to long-term values (or planned FY value).

D: Performance falls below the intended objectives in the mid to long-term plan, requiring drastic improvement of business including its abolishment (in terms of quantitative indicators, less than 80% vis-à-vis planned mid to long-term values (or planned FY value), or it is recognized that the competent Minister is required to make an order for improving business operation or taking other necessary measures).

*2 Evaluations up to FY 2013 were not made as they fall under the jurisdiction of the evaluation committee for incorporated administrative agency under MEXT, since evaluation was made at each step for the major items on a step by step basis, and this evaluation shall be described in reference to evaluations of the previous period.

Mid to long-term objectives (Mid to long-term plan)	FY Ratings*					No. of document each item	Remarks
	FY2013	FY2014	FY2015	FY2016	FY2017		
I. Measures to be taken for achieving the objectives concerning the improvement of the service to the nation and the quality of the operations							
1. Ensuring space security	-	-	-	-	-	-	-
(1) Positioning satellites	A	B	B	-	-	I-1-1	-
(2) Remote sensing satellites	S	S	B	-	-	I-1-2	-
(3) Satellite communication/satellite broadcasting	A	B	B	-	-	I-1-3	-
(4) Space transportation systems	S	A	S	-	-	I-1-4	-
(5) Other efforts	-	-	B	-	-	I-1-5	-
2. Promotion of space use in the field of consumer affairs	-	-	-	-	-	-	-
(1) Positioning satellites	A	B	B	-	-	I-2-1	-
(2) Remote sensing satellites	S	S	A	-	-	I-2-2	-
(3) Satellite communication/satellite broadcasting	A	B	B	-	-	I-2-3	-
(4) Other efforts	-	-	B	-	-	I-2-4	-
3. Maintaining and enhancing the foundations of the space industry and scientific technology	-	-	-	-	-	-	-
(1) Space transportation systems	S	A	S	-	-	I-3-1	-
(2) Space science/exploration	A	A	C	-	-	I-3-2	-
(3) Manned space	S	B	A	-	-	I-3-3	-
(4) Space solar power	A	B	B	-	-	I-3-4	-
(5) Measures for strengthening industrial base and science/technology base that support individual projects	-	-	B	-	-	I-3-5	-
4. Aeronautical science and technology	-	-	S	-	-	I-4	-
(1) Research and development focused on	B	A		-	-		-

Mid to long-term objectives (Mid to long-term plan)	FY Ratings*					No. of document each item	Remarks
	FY2013	FY2014	FY2015	FY2016	FY2017		
II. Measures to be taken for achieving the objectives concerning the improvement of efficiency of the administration of the operationseasures for improving business efficiency							
1. Enhancement of internal controls and governance	-	-	C	-	-	II-1	-
(1) Security of information	A	B		-	-		-
(2) Project management	A	B		-	-		-
(3) Appropriateness of contract	A	B		-	-		-
2. Flexible and efficient organization management	A	B	B	-	-	II-2	-
3. Streamlining and efficiency of operations	-	-	B	-	-	II-3	-
(1) Streamlining and efficiency of operational expenses	A	B		-	-		-
(2) Streamlining and efficiency of personnel expenses	A	B		-	-		-
4. Application of information technology	S	B	B	-	-	II-4	-
III. Budget (Including personnel expenses)/ income and expenditure plan, and funding plan	A	-	B	-	-	III	Evaluation is made in III. Items regarding improvements in financial related matters.
VI. Limit amount of short-term borrowing	-	-		-	-		
V. If the agency has any unnecessary property or any property that is expected to be unnecessary property, a plan for disposal of such property	-	-		-	-		
VI. If the agency intends to transfer or provide as collateral any important property other than the property provided for	-	-		-	-		

environment and safety							
(2) Promotion of usage of aviation aeronautical science and technology	A	B		-	-		-
(3) Contribution to strengthening technology base and industrial competitiveness	-	-		-	-		-
5. Cross-sectional matters	-	-	-	-	-	-	-
(1) Comprehensive efforts to expand use	A	B	B	-	-	I-5-1	-
(2) Strengthening of research analysis and strategic planning functions	A	B	B	-	-	I-5-2	-
(3) Development of fundamental facilities/equipment	A	B	B	-	-	I-5-3	-
(4) Comprehensive enhancement of domestic human resource base, promotion of public understanding	A	A	A	-	-	I-5-4	-
(5) Realization/enhancement of rule of law in outer space	A	A	A	-	-	I-5-5	-
(6) Strengthening of international space cooperation	A	A	A	-	-	I-5-6	-
(7) Promotional activities to meet country infrastructure needs overseas	A	B	A	-	-	I-5-7	-
(8) Information disclosure and public relations	A	A	A	-	-	I-5-8	-
(9) Business assessment	A	B	B	-	-	I-5-9	-

in the preceding item, a plan therefor;							
VII. Purpose of using accumulated profit	-	-		-	-		
VIII. Other matters concerning the administration of the operations specified by ordinance of the competent ministry							
1. Facilities and equipment related issues	A	B	B	-	-	VIII-1	-
2. Plans for personnel	A	B	A	-	-	VIII-2	-
3. Safety and reliability related issues	A	B	C	-	-	VIII-3	-

* For items that are set to “high” level of importance, a “circle” shall be marked next to each comment.
For items that are set to “high” level of difficulty, each comment shall be underlined.

* Evaluations up to FY 2013 were made based on “the basic guideline regarding business results evaluation for Incorporated Administrative Agency under MEXT’s jurisdiction” (The evaluation committee for incorporated administrative agency under MEXT’s jurisdiction on March 22, 2002).
Evaluations in and after FY2014 were made based on each ministry’s evaluation standards. The details are as follows.

*2 In accordance with the revision of the Basic Plan on Space Policy in January 2015, each item such as the medium-term goal that was subject to the old Basic Plan on Space Policy was revised in line with the three goals of the new Basic Plan at the end of FY2015.

Ratings up to FY2013	Ratings after FY2014
S: Outstanding achievements are fulfilled. (Without providing a cross-cutting objective standard for the agency in advance, S is rated according to the characteristics of the agency’s business operations.) A: Achievements are in line with the plan for medium-term, or beyond, or are steadily being implemented	【Administrative and projects related to research and development (I)】 S: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business

toward a medium-term objective, or beyond (achievement rate for the medium-term objective should be over 100% in a given FY.). B: In some ways the plan is not being implemented in line with medium-term objectives, however, the plan may be achieved by means of ideas and efforts (achievement rate for the medium-term objective should be 70% to 100%.). C: The implementation of the plan is behind the medium-term objective, therefore, improvement of business is necessary in order to realize the achievement of the medium-term objective (achievement rate for the medium-term objective in a given FY is less than 70%.). F: The Evaluation Committee needs to warn an agency concerning the improvement of its business management and others (Without providing an objective standard in advance, F is rated as a result of judgement that a warning concerning business improvement is necessary.)	achievements, efforts and so on through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective, and efficient operations are recognized. A: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, the creation of considerable achievements, anticipated creation of achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective, and efficient operations are recognized. B: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievement, efforts and so on through its activities, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward “maximization of R&D achievements” were recognized, and steady business operations have been also recognized. C: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, the creation of achievements, further drastic efforts and improvements toward “maximization of R&D achievements” or the “appropriate, effective, and efficient operations” are anticipated. D: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts through its activities, special efforts and improvements including a fundamental drastic review, toward “maximization of R&D achievements” or the “appropriate, effective, and efficient operations” are required. 【Other than administrative work and projects regarding research and development (After II)】 S: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized quantitatively and qualitatively in the mid to long-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned mid to long-term values (or planned FY value), and remarkable performance is also recognized qualitatively. A: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized in the mid to long-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned mid to long-term values (or planned FY value). B: Performance exceeding the intended objectives is recognized in the mid to long-term plan (in terms of quantitative indicators, 100% or more but less than 120% vis-à-vis planned mid to long-term values (or planned FY value). C: Performance falls below the intended objectives in the mid to long-term plan, requiring improved performance (in terms of quantitative indicators, 80% or more but less than 100% vis-à-vis planned mid to long-term values (or planned FY value). D: Performance falls below the intended objectives in the mid to long-term plan, requiring drastic improvement of business including its abolishment (in terms of quantitative indicators, less than 80% vis-à-vis planned mid to long-term values (or planned FY value), or it is recognized that the competent Minister is required to make an order for improving business operation or taking other necessary measures).

Form 2-1-3 FY Evaluation / Ratings Summary Table by Each Item

Mid to long-term objectives (Mid to long-term plan)	FY Ratings*					No. of document each item	Remarks
	FY2013	FY2014	FY2015	FY2016	FY2017		
I. Measures to be taken for achieving the objectives concerning the improvement of the service to the nation and the quality of the operations							
1. Social infrastructure for growth of space usage and autonomy	-	-	-	-	-	-	-
(1) Positioning satellites	A	B	-	-	-	-	-
(2) Remote sensing satellites	S	S	-	-	-	-	-
(3) Satellite communication/satellite broadcasting	A	B	-	-	-	-	-
(4) Space transportation systems	S	A	-	-	-	-	
2. Pursuit of the possibility of future development and utilization of space	-	-	-	-	-	-	-
(1) Space science and space exploration exportation program	A	A	-	-	-	-	-
(2) Manned space programHuman space activity program system	S	B	-	-	-	-	-
(3) Space solar power research and development program	A	B	-	-	-	-	-
3. Aeronautical science and technology	-	-	-	-	-	-	-
(1) Research and development focused on environment and safety	B	A	-	-	-	-	-
(2) Promotion of usage of aviation aeronautical science and technology	A	B	-	-	-	-	-
4. Cross-sectional matters	-	-	-	-	-	-	-
(1) Comprehensive efforts to expand use	A	B	-	-	-	-	-

Mid to long-term objectives (Mid to long-term plan)	FY Ratings*					No. of document each item	Remarks
	FY2013	FY2014	FY2015	FY2016	FY2017		
II. Measures to be taken for achieving the objectives concerning the improvement of efficiency of the administration of the operationseasures for improving business efficiency							
1. Enhancement of internal controls and governance	-	-	-	-	-	-	-
(1) Security of information	A	B	-	-	-	-	-
(2) Project management	A	B	-	-	-	-	-
(3) Appropriateness of contract	A	B	-	-	-	-	-
2. Flexible and efficient organization management	A	B	-	-	-	-	-
3. Streamlining and efficiency of operations	-	-	-	-	-	-	-
(1) Streamlining and efficiency of operational expenses	A	B	-	-	-	-	-
(2) Streamlining and efficiency of personnel expenses	A	B	-	-	-	-	-
4. Application of information technology	S	B	-	-	-	-	-
III. Budget (Including personnel expenses)/ income and expenditure plan, and funding plan	A	-		-	-	-	Evaluation is made in 3. Streamlining and efficiency of operations.
IV. Limit amount of short-term borrowing	-	-	-	-	-	-	No pertinent item for evaluation
V. If the agency has any unnecessary property or any property that is expected to be unnecessary property, a plan for disposal of such property	-	-	-	-	-	-	No pertinent item for evaluation
VI. If the agency intends to transfer or provide as collateral any important property other than the property provided for in the	-	-	-	-	-	-	No pertinent item for evaluation

(2) Contribution to strengthening technology base and industrial competitiveness	A	B	-	-	-	-	-
(3) Contribution to foreign and security policy and international cooperation using the spaceuniverse	A	A	-	-	-	-	-
(4) Promotional activities to meet country infrastructure needs overseas	A	B	-	-	-	-	-
(5) Strengthening of research analysis and information collection to contribute to the formulation of effective space policy	A	B	-	-	-	-	-
(6) Nurturing human resources	A	A	-	-	-	-	-
(7) Consideration for the environment with a view to sustainable development and utilization of space Sustainable environment for space development	A	B	-	-	-	-	-
(8) Information disclosure and public relations	A	A	-	-	-	-	-
(9) Business assessment	A	B	-	-	-	-	-
	-	-	-	-	-	-	-

preceding item, a plan therefor;							
VII. Purpose of using accumulated profit	-	-	-	-	-	-	No pertinent item for evaluation
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
VIII. Other matters concerning the administration of the operations specified by ordinance of the competent ministry							
1. Facilities and equipment related issues	A	B	-	-	-	-	-
2. Plans for personnel	A	B	-	-	-	-	-
3. Safety and reliability related issues	A	B	-	-	-	-	-
							-
							-

* For items that are set to “high” level of importance, a “circle” shall be marked next to each comment.
For items that are set to “high” level of difficulty, each comment shall be underlined.

* Evaluations up to FY 2013 were made based on “the basic guideline regarding business results evaluation for Incorporated Administrative Agency under MEXT’s jurisdiction” (The evaluation committee for incorporated administrative agency under MEXT’s jurisdiction on March 22, 2002).
Evaluations in and after FY2014 were made based on each ministry’s evaluation standards.The details are as follows.

Ratings up to FY2013	Ratings after FY2014
S: Outstanding achievements are fulfilled. (Without providing a cross-cutting objective standard for the agency in advance, S is rated according to the characteristics of the agency’s business operations.) A: Achievements are in line with the plan for medium-term, or beyond, or are steadily being implemented toward a medium-term objective, or beyond (achievement rate for the medium-term objective should be over 100% in a given FY.). B: In some ways the plan is not being implemented in line with medium-term-objectives, however, the plan may be achieved by means of ideas and efforts (achievement rate for the medium-term objective should be 70% to 100%.). C: The implementation of the plan is behind the medium-term objective, therefore, improvement of business is necessary in order to realize the achievement of the medium-term objective (achievement rate for the medium-term objective in a given FY is less than 70%.). F: The Evaluation Committee needs to warn an agency concerning the improvement of its business	【Administrative and projects related to research and development (I)】 S: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward “maximization of R&D achievements” under the conditions of proper, effective, and efficient business operations are recognized. A: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, the creation of considerable achievements, anticipated creation of achievements in the future and so on toward “maximization of R&D achievements” under the conditions of proper, effective, and efficient business operations are recognized. B: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so

management and others (Without providing an objective standard in advance, F is rated as a result of judgement that a warning concerning business improvement is necessary.)	on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievement, efforts and so on through its activities, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward "maximizing the achievements of research and development results" were recognized, and steady business operations have been also recognized. C: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, the creation of achievements, further drastic efforts and improvements toward "maximization of R&D achievements" or the "proper, effective, and efficient business operations" are anticipated. D: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts through its activities, special efforts and improvements including a fundamental drastic review, toward "maximization of R&D achievements" or the "proper, effective, and efficient business operations" are required. 【Other than administrative work and projects regarding research and development (After II)】 S: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized quantitatively and qualitatively in the mid to long-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned mid to long-term values (or planned FY value), and remarkable performance is also recognized qualitatively. A: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized in the mid to long-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned mid to long-term values (or planned FY value). B: Performance exceeding the intended objectives is recognized in the mid to long-term plan (in terms of quantitative indicators, 100% or more but less than 120% vis-à-vis planned mid to long-term values (or planned FY value). C: Performance falls below the intended objectives in the mid to long-term plan, requiring improved performance (in terms of quantitative indicators, 80% or more but less than 100% vis-à-vis planned mid to long-term values (or planned FY value). D: Performance falls below the intended objectives in the mid to long-term plan, requiring drastic improvement of business including its abolishment (in terms of quantitative indicators, less than 80% vis-à-vis planned mid to long-term values (or planned FY value), or it is recognized that the competent Minister is required to make an order for improving business operation or taking other necessary measures).