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Ministry of Defense

Defense Programs and Budget of Japan

Overview of FY2018 Budget Request

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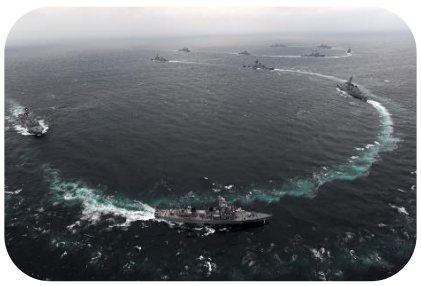
Overview of FY2018 Budget Request

– Contents –



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Concept of FY2018 Budget Request

1. Japan will steadily improve its defense capabilities in FY2018 as the final fiscal year of the "Medium Term Defense Program (FY2014-FY2018)" (approved by the Cabinet on December 17, 2013) based on the "National Defense Program Guidelines for FY2014 and beyond" (approved by the Cabinet on December 17, 2013) in order to develop the Dynamic Joint Defense Force.

2. Japan will build up its defense capabilities while focusing on the further enhancement of joint functions in order to seamlessly and dynamically fulfill its defense responsibilities, which include providing effective deterrence and response to a variety of security situations, supporting stability in the Asia-Pacific region, and also improving the global security environment. Japan will place particular emphasis on the following measures: intelligence, surveillance, and reconnaissance (ISR) capabilities; intelligence capabilities; transport capabilities; command, control, communication, intelligence (C3I) capabilities; response to attacks on remote islands; response to ballistic missile attacks; response to outer space and cyberspace threats; response to large-scale disasters, etc.; and international peace cooperation efforts, etc. At the same time, Japan will give consideration to ensuring technological superiority and maintaining defense production and the technological bases.

3. In light of the increasingly severe fiscal situations, Japan will further promote efforts to achieve greater efficiency and streamlining that is in harmony with other national policies through initiatives such as long-term contracts.

Ⅰ Defense-related expenditures

Overall defense-related expenditures

[Expenditures (classified into three categories)]

(Unit: ¥100 million)

	FY2017 Budget	YR/YR	FY2018 Budget Request	YR/YR
Defense-related expenditures	48,996 (51,251)	389[0.8] (710[1.4])	50,219 (52,551)	1,223[2.5] (1,300[2.5])
Personnel and provisions expenses	21,662	190[0.9]	21,763	101[0.5]
Material expenses	27,334 (29,589)	199[0.7] (520[1.8])	28,456 (30,788)	1,123[4.1] (1,199[4.1])
Obligatory outlay expenses	17,364 (18,767)	177[1.0] (390[2.1])	17,957 (19,416)	594[3.4] (649[3.5])
General material expenses (activity expenses)	9,970 (10,822)	22[0.2] (131[1.2])	10,499 (11,372)	529[5.3] (550[5.1])

(Note)

1. [ ]: growth rate (%)
2. Figures may not add up to the total due to rounding (the same hereinafter)
3. The upper figures in each cell do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft. The lower figures in parentheses indicate the expenses which include those above.
   The amount of the SACO-related expenses are:
   FY2017: ¥2.8 billion; FY2018: ¥2.8 billion (provisionally kept the same as the previous FY).
   The U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) are:
   FY2017: ¥201.1 billion; FY2018: ¥201.1 billion (provisionally kept the same as the previous FY)
   Expenses related to the introduction of new government aircraft are:
   FY2017: ¥21.6 billion; FY2018: ¥29.3 billion.
4. Exchange rate for FY2018 defense budget request: US$ = JPY110

[Future obligation concerning new contracts]

(Unit: ¥100 million)

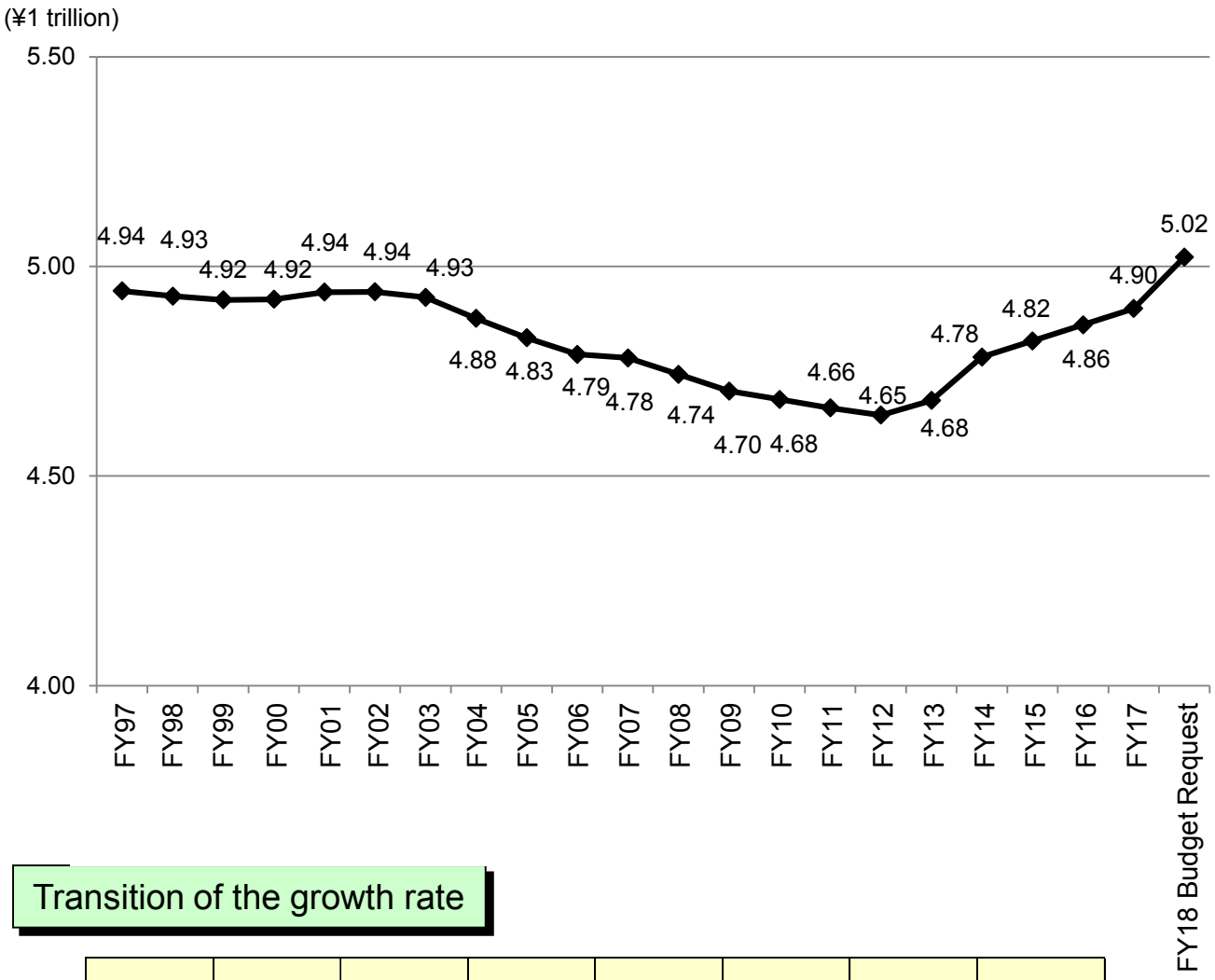
	FY2017 Budget	YR/YR	FY2018 Budget Request	YR/YR
Total	19,700 (21,299)	−1,100[−5.3] (−1,576[−6.9])	22,895 (24,552)	3,195[16.2] (3,254[15.3])
Conventional portion	19,147	−534[−2.7]	22,623	3,476[18.2]
Long-term contracts	554	−565[−50.5]	272	−281[−50.8]

(Note)

1. [ ]: growth rate (%)
2. The upper figures in each cell do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft. The lower number in parentheses indicates the expenses which include those above.
   The amount of the SACO-related expenses are:
   FY2017: ¥1.8 billion; FY2018: ¥1.8 billion (provisionally kept the same as the previous FY)
   The U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) are:
   FY2017: ¥157.8 billion; FY2018: ¥157.8 billion (provisionally kept the same as the previous FY)
   Expenses related to the introduction of new government aircraft are:
   FY2017: ¥0.2 billion; FY2018: ¥6.1 billion.
3. The FY2018 budget request includes expenses of a PFI contract of ¥44 billion related to the maintenance and operation of the X-band satellite communication system.
4. Details of long-term contract in
   FY2017: Helicopter (CH-47JA) X 6 aircraft, ¥44.5 billion; Performance Based Logistics (PBL) of Transport aircraft (C-130R), ¥10.9 billion
   FY2018: PBL of maintenance parts for the F110 engine (for fighter aircraft (F-2))

Changes in defense-related expenditures

Changes in total amount



Transition of the growth rate

FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004
2.0	-0.3	-0.2	0.0	0.3	0.0	-0.3	-1.0

FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012
-1.0	-0.8	-0.2	-0.8	-0.8	-0.4	-0.4	-0.4

FY2013	FY2014	FY2015	FY2016	FY2017	FY18 Budget Request
0.8	2.2	0.8	0.8	0.8	2.5

Notes: 1. The above figures are on an expenditure base.
2. The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.

Notes 1 : Numbers in the text represent expenses, excluding non-recurring costs, which are required for the production of equipment, unless otherwise specified.
2 : Numbers in the text are on a contract basis, unless otherwise specified.
3 : Blue text indicates new programs.

II Effective deterrence and response to various situations

In order to provide effective deterrence and respond to a variety of security situations, Japan will build up necessary defense capabilities to ensure security of the seas and airspace surrounding Japan, respond to attacks on remote islands, respond to ballistic missile attacks, respond to outer space and cyberspace threats, respond to large-scale disasters, and strengthen intelligence capabilities.

1 Ensuring security of seas and airspace surrounding Japan

Strengthen intelligence, warning and surveillance capabilities in the seas and airspace surrounding Japan, in order to carry out continuous surveillance across wide areas and detect various warning signs at an early time

○ Capability improvement for fixed-wing patrol aircraft (P-3C) (¥100 million)
Implement upgrade necessary to improve capabilities of radars in order to improve the detection/discernment capabilities of fixed-wing patrol aircraft (P-3C)


Fixed-wing patrol aircraft (P-3C)

○ Life extension of fixed-wing patrol aircraft (P-3C) (3 aircraft: ¥1.2 billion)
Implement life extension measures for P-3C to maintain the number of fixed-wing patrol aircraft

○ Life extension of patrol helicopters (5 helicopters: ¥6.7 billion)
Implement life extension measures for three SH-60Ks and two SH-60Js to maintain the number of patrol helicopters


Patrol helicopter (SH-60K)

○ Life extension of imagery intelligence gathering aircraft (OP-3C)
(1 aircraft: ¥300 million)
Implement life extension measures for one OP-3C aircraft in order to maintain the number of imagery intelligence gathering aircraft


Imagery intelligence gathering aircraft (OP-3C)

○ Construction of new class ship(2 ships: ¥96.4 billion)
Construct a new class ship(3,900 tons) which is equipped with enhanced multi-task capabilities, including the anti-mine warfare function that has until now been performed by ocean mine sweepers, and which has a reduced body size, in order to expand the fleet strength to 54 ships.
[Number of ships to be introduced by the 2018 budget request/number of ships to be introduced during the period of the Medium Term Defense Program: 5 ships/5 ships]


FY2018 new class ship(3,900t class) (image)

○ Life extension of destroyers
(life extension work for 2 ships and parts procurement for 7 ships: ¥3.4 billion)
Implement life extension measures for Asagiri-class (6 ships), Abukuma-class (2 ships), and Kongo-class (1 ship) to maintain the number of destroyers

○ Construction of a submarine (1 vessel: ¥71.5 billion)
Construct a submarine with higher detection and other capabilities in order to conduct intelligence-gathering and surveillance activities in an effective manner in the seas surrounding Japan with a submarine fleet of 22 vessels (construction of the second of the FY2017 submarines (3,000 tons)
[Number of submarines to be introduced by the 2018 budget request/number of submarines to be introduced during the period of the Medium Term Defense Program: 5 submarines/5 submarines]

FY2018 submarine (3,000t class) (image)

○ Life extension of submarines (life extension work for 4 vessels and parts procurement for 5 vessels: ¥4.6 billion)
Implement life extension measures for Oyashio-class submarines in order to maintain the submarine fleet size

Oyashio-class submarine (2,700t class)

○ Acquisition of the standard missile SM-6 (¥2.1 billion)
Acquire a test version of the standard missile SM-6 that has enhanced capabilities compared with existing missiles in preparation for installation on AEGIS destroyers

○ Acquisition of new airborne early-warning aircraft (E-2D) (2 aircraft: ¥49.1 billion)
Acquire new airborne early-warning aircraft in order to strengthen the warning and surveillance capabilities in airspace surrounding Japan, including over the southwestern region.
[Number of aircraft to be introduced by the 2018 budget request/number of aircraft to be introduced during the period of the Medium Term Defense Program: 4 aircraft/4 aircraft]

New airborne early-warning aircraft (E-2D) (picture of the same aircraft type)

○ Improvement in capability of Airborne Warning And Control System (AWACS) (E-767) (1 aircraft: ¥8.3 billion)
Implement aircraft modifications necessary for conversion of central computing devices and installation of electronic warfare support equipment in order to improve the warning and surveillance capabilities of the existing E-767

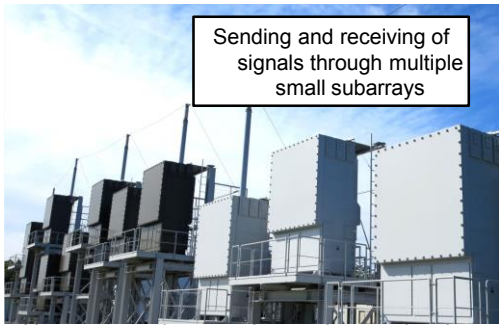
Airborne Warning And Control System (AWACS) (E-767)

○ Acquisition of Unmanned Aerial Vehicles (RQ-4B Global Hawk) (¥14.4 billion)
- Allocate expenses for the assembly of one UAV (RQ-4B Global Hawk) in order to enhance persistent wide-area surveillance capability
- Strengthen preparation and readiness for the introduction of UAVs

* Separately allocate ¥5.0 billion for other related expenses (development of necessary facilities, etc.)
The FY2015 and FY2016 budgets were used to acquire aircraft components (for 3 vehicles) and ground element for remote control operation.
Allocate expenses for the assembly of one UAV in FY2017 budget.
[Number of UAVs to be introduced by the 2018 budget request/ number of UAVs to be introduced during the period of the Medium Term Defense Program: 2 vehicles/3 vehicles]

Unmanned Aerial Vehicles (RQ-4B Global Hawk) (picture of the same vehicle type)

○ Development of next-generation warning and control radar equipment (¥19.6 billion)
Develop next-generation warning and control radar equipment which possesses sufficient detection and tracking capabilities to respond to future airborne threats and ballistic missiles and which are superior in resiliency and economic efficiency



Next-generation warning and control radar equipment (pictured here is a research prototype)

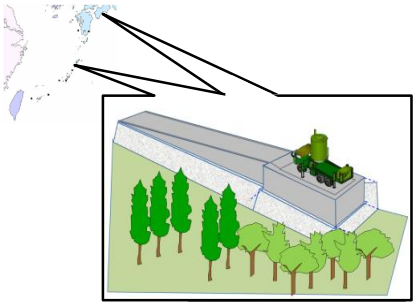
2 Respond to attacks on remote islands

In order to respond to attacks on remote islands, the MOD will develop continuous surveillance capabilities, ensure and maintain air superiority and maritime supremacy, enhance rapid deployment and response capabilities such as transportation and amphibious operation capabilities, and strengthen the infrastructure for C3I capabilities.

(1) Develop continuous surveillance capabilities

○ Acquisition of new airborne early-warning aircraft (E-2D) (repost)

○ Establishment of foundation for deploying mobile warning and control radar in the southwestern region (¥100 million)
Maintain seamless warning and surveillance posture by establishing foundation for deploying mobile warning and control radar in Amami-Oshima (Kagoshima Prefecture) and Tosa-Shimizu (Kochi Prefecture)


Establishment of deployment foundation for mobile warning and control units (image)

○ Conversion of fixed warning and control radar (FPS-7) and addition of functions for BMD response (¥13.3 billion)
- Acquire fixed warning and control radar (FPS-7) to install on Wakkanai (Hokkaido Prefecture)
- Allocate cost of building facilities necessary to install FPS-7 in Wakkanai (Hokkaido Prefecture) and Unishima Island (Nagasaki Prefecture)


Fixed warning and control radar (FPS-7)

○ Capability Improvement of Airborne Warning And Control System (AWACS) (E-767) (repost)

○ Acquisition of Unmanned Aerial Vehicles (RQ-4B Global Hawk) (repost)

(2) Ensure and maintain air superiority

○ Acquisition of fighter aircraft (F-35A) (6 fighters: ¥88.1 billion)
* ¥29.9 billion is allocated separately for other related expenses (ground support equipment, etc.)
[Number of fighters to be introduced by the 2018 budget request/number of fighters to be introduced during the period of the Medium Term Defense Program: 28 fighters/28 fighters]


Fighter aircraft (F-35A)

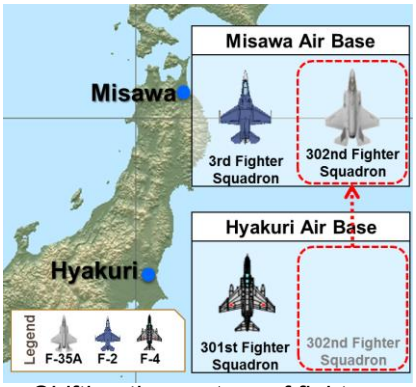
○ Upgrade of fighter aircraft (¥800 million)
Upgrade capabilities of existing fighters to adapt to the modernization of the aerial combat capabilities of neighboring countries and to appropriately carry out air defense missions.
- Improvement in air-to-air combat capability of fighter aircraft (F-2) (2 fighters)
- Upgrade of fighter aircraft (F-2) by equipping JDCS (F)* (2 fighters)

* JDCS (F): Japan Self Defense Force Digital Communication System (Fighter)


F-2 fighter aircraft

○ Shifting the posture of fighter squadrons, etc.

- Shift the posture of fighter squadrons to develop readiness for ensuring air superiority, including strengthening the defense posture in the southwestern region
- Retire a squadron of F-4 fighter aircraft at Hyakuri Air Base and establish a new squadron of F-35A fighter aircraft at Misawa Air Base in line with the replacement of the F-4 with the F-35A



Shifting the posture of fighter squadrons, etc.

○ Acquisition of new aerial refueling and transport aircraft (KC-46A) (1 aircraft: ¥27.7 billion)

Acquire new aerial refueling and transport aircraft (KC-46A) that will allow fighter squadrons, etc. to continuously execute various operations in the airspace surrounding Japan

[Number of aircraft to be introduced by the 2018 budget request/number of aircraft to be introduced during the period of the Medium Term Defense Program: 2 aircraft/3 aircraft]

New aerial refueling and transport aircraft (KC-46A) (image)

○ Additional installment of aerial refueling functions to transport aircraft (C-130H) (1 set: ¥900 million)

Implement modification of transport aircraft (C-130H) to add the aerial refueling function in order to ensure adequate scope and time for search and rescue activities by rescue helicopters (UH-60J) when responding to attacks on remote islands, etc.

Transport aircraft with aerial refueling function (KC-130H)

○ Acquisition of Type-03 middle-range surface-to-air missile (modified) (1 set: ¥18.2 billion)

Acquire the Type-03 medium-range surface-to-air Missile (modified) with enhanced capability to respond to low-altitude and high-speed targets in order to strengthen air defense capability in operational regions, including the southwestern region.

[Number of sets to be introduced by the 2018 budget request/number of sets to be introduced during the period of the Medium Term Defense Program: 4 sets/5 sets]

Type-03 middle-range surface-to-air missile (modified) (prototype)

○ Acquisition of Type-11 short-range surface-to-air missile (1 set: ¥3.6 billion)

Acquire the Type-11 short-range surface-to-air missile, which is capable of responding to various airborne threats, in order to strengthen the capability to provide air defense for rapid deployment units, etc.

Type-11 short-range surface-to-air missile

(3) Ensure and maintain maritime supremacy

- ○ Capability improvement for fixed-wing patrol aircraft (P-3C) (repost)
- ○ Life extension of fixed-wing patrol aircraft (P-3C) (repost)
- ○ Life extension of patrol helicopters (repost)
- ○ Life extension of imagery intelligence gathering aircraft (OP-3C) (repost)
- ○ Building of a new class ship (repost)
- ○ Life extension of destroyers (life extension work for 2 ships and parts procurement for 7 ships) (repost)
- ○ Construction of a submarine (repost)
- ○ Life extension of submarines (life extension work for 4 vessels and parts procurement for 5 vessels) (repost)
- ○ Acquisition of standard missile SM-6 (repost)
- ○ Acquisition of Type-12 surface-to-ship missile (1 set: ¥12.9 billion)
  [Number of sets to be introduced by the 2018 budget request/number of sets to be introduced during the period of the Medium Term Defense Program: 7 sets/9 sets]


Type-12 surface-to-ship missile

(4) Enhance rapid deployment and response capabilities

- ○ Upgrade of MSDF Osumi-class LST (¥900 million)
  - Upgrade the Osumi-class LST in order to enhance various transport capabilities related to amphibious operations and the headquarters function
  - Implement upgrades necessary for strengthening the opening/closing mechanism of the stern gate which amphibious vehicles pass through and the LST's water pouring/discharging function


MSDF Osumi-class LST

- ○ Acquisition of transport aircraft (C-2) (2 aircraft: ¥45.0 billion)
  In view of the decreasing number of the current transport aircraft (C-1), acquire transport aircraft (C-2) with enhanced cruising range, payload, etc. that contribute to large-scale deployments
  [Number of aircraft to be introduced by the 2018 budget request/number of aircraft to be introduced during the period of the Medium Term Defense Program: 7 aircraft/10 aircraft]


Transport aircraft (C-2)

- ○ Acquisition of Type-16 mobile combat vehicles
  (16 vehicles: ¥12.1 billion)
  Strengthen rapid deployment capabilities of the basic operational units (rapid deployment divisions and rapid deployment brigades) by deploying Type-16 mobile combat vehicles suited for transportation by aircraft and other means
  [Number of vehicles to be introduced by the 2018 budget request/number of vehicles to be introduced during the period of the Medium Term Defense Program: 85 vehicles/99 vehicles]


Type-16 mobile combat vehicles

○ Preparation for the establishment of new air transport units

- Acquisition of tilt-rotor aircraft (V-22) (4 aircraft: ¥45.7 billion)
  In view of enhancing unit deployment capabilities in amphibious operations, acquire tilt-rotor aircraft (V-22) that complement and strengthen the transport capabilities of transport helicopters (CH-47JA), including cruising speed and range
- Expenses related to the acquisition of spare parts, etc. (¥51.4 billion)

[Number of aircraft to be introduced by the 2018 budget request/number of aircraft to be introduced during the period of the Medium Term Defense Program: 17 aircraft/17 aircraft]

- Development of base facilities for tilt-rotor aircraft (V-22) (facilities related to Saga Airport) (¥1.4 billion)

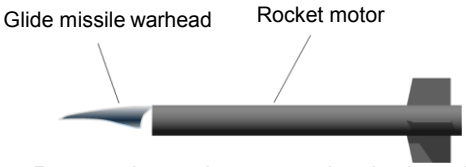
Tilt-rotor aircraft (V-22) (picture of the same aircraft type)

○ Development of facilities related to the Amphibious Rapid Deployment Brigade (Ainoura, etc.) (¥400 million)

○ Development for an area security unit in the southwestern region (¥55.2 billion)
Develop an office building and other facilities related to the deployment of area security units, etc. in Amami-Oshima and Miyako-jima and allocate expenses for acquisition of land in Ishigaki Island in order to improve the initial response readiness in the defense of remote islands

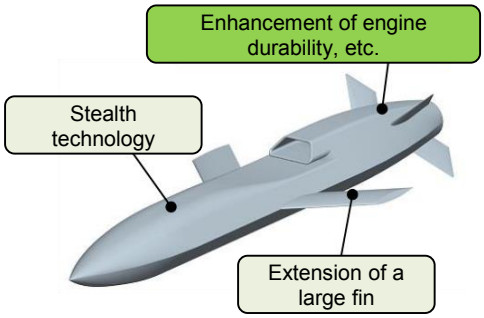
Key facilities associated with unit deployment (image)

○ Research on element technologies of a high-velocity glide missile intended for the defense of remote islands (¥10 billion)
Conduct research on element technologies of a high-velocity glide missile intended for the defense of remote islands which is capable of gliding at high velocity and hitting a target, in order to enable island-to-island firing.



Research on element technologies of a high-velocity glide missile intended for the defense of remote islands (image)

○ Research on element technologies of a new anti-ship missile intended for the defense of remote islands (¥7.7 billion)
Conduct research on element technologies of a new anti-ship missile intended for the defense of remote islands in order to improve the range and survivability of existing anti-ship missiles in light of the increasing range of missiles possessed by foreign countries so that such foreign missiles can be countered from outside their range.



Research on element technologies of a new anti-ship missile intended for the defense of remote islands (image)

○ Bilateral field training exercise with U.S. Marine Corps in the U.S., etc.
Send GSDF units to Iron Fist (the sea area near by Camp Pendleton, California, U.S.) and RIMPAC (Marine Corps Air Station Kaneohe Bay, Hawaii, U.S.), and exercise to improve tactical and combat capabilities necessary for operations in island area as well as interoperability with the U.S. Marine Corps

Iron Fist

○ Joint anti-ship firing training
Conduct a joint anti-ship firing training with surface-to-ship missiles of the GSDF, coordinating with the MSDF and the U.S. Forces' artillery units, in order to enhance response capabilities to enemy ships

○ Conduct a joint amphibious operation exercise
Conduct a joint amphibious operation exercise with the U.S. Forces in order to enhance the SDF's joint-operation capabilities and bilateral response capabilities for the response to attacks on island areas

Joint amphibious operation exercise (image)

○ Enhancement of readiness for joint transportation using PFI ships
Enhance the readiness for joint transportation by improving the operational effectiveness of PFI ships through the implementation of an exercise using such ships to transport units and equipment and verification of port entry

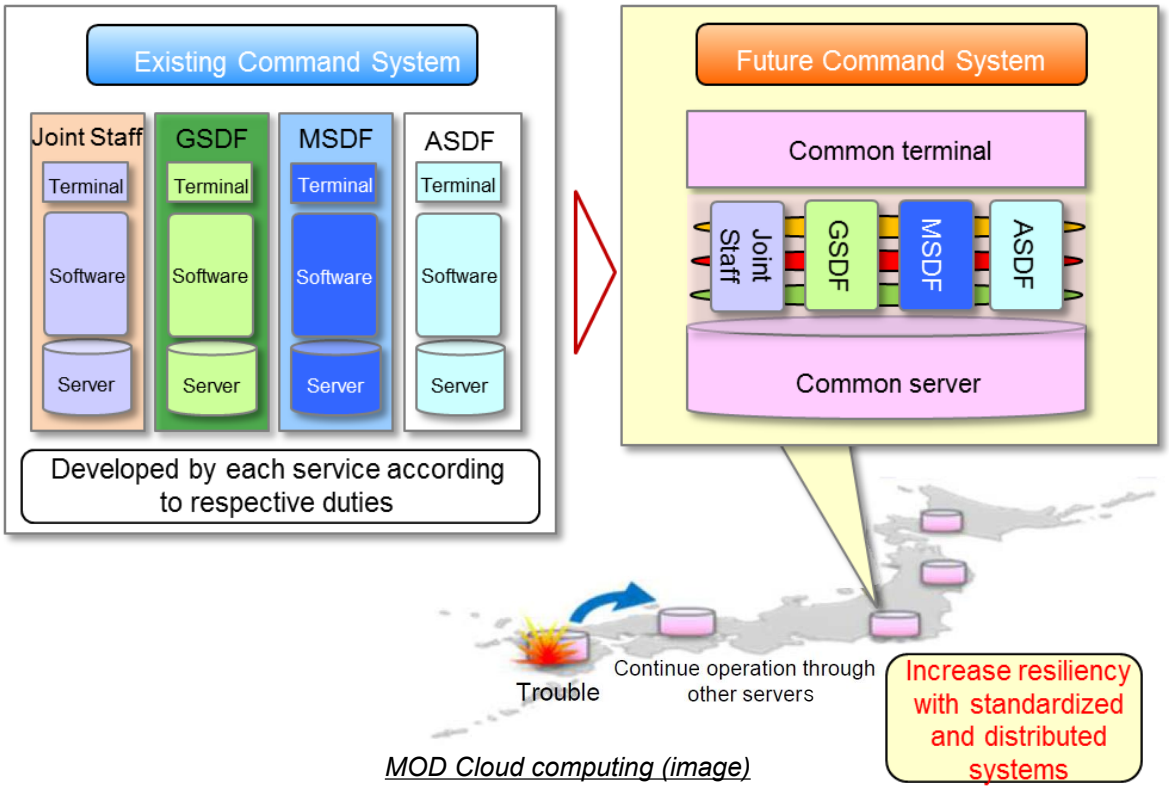
Joint transportation using PFI ships (image)

(5) Strengthen the infrastructure for C3I capabilities

○ Strengthening information and communications capability, which is a prerequisite for supporting nation-wide operations

Gradually introduce cloud technology to integrate the command systems that were developed individually by each SDF service. The integration will increase the system's operational flexibility and resiliency, and at the same time, reduce the costs associated with development and maintenance of the system

- Replacement of the central command system
  (Design process from FY2017 will continue in FY2018) (¥400 million)
- Establishment/Development of common cloud computing infrastructure, etc. (¥600 million)
- Establishment/Development of cloud computing infrastructure for the GSDF (¥3.8 billion)

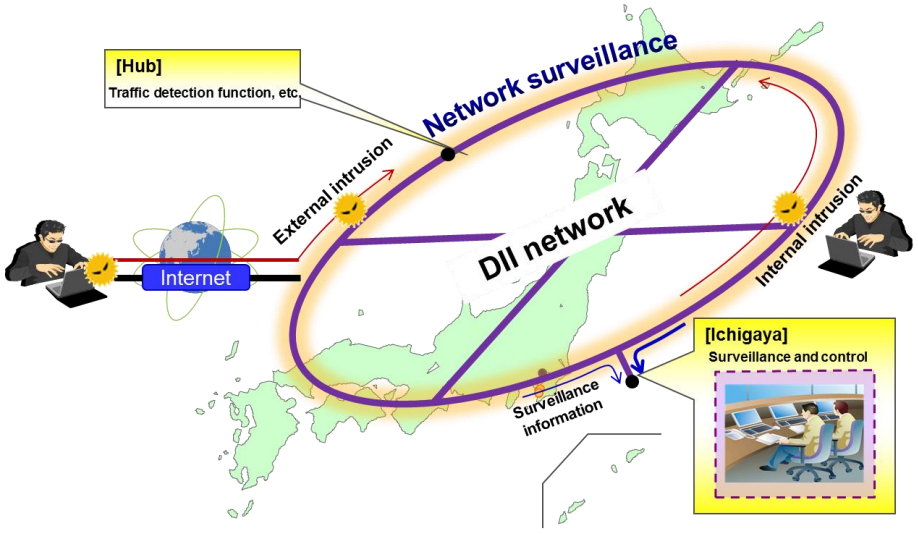


MOD Cloud computing (image)

○ Enhancement of the network surveillance function of the Defense Information Infrastructure (DII*), etc. (¥7.4 billion)

Significantly increase equipment for network surveillance in order to strengthen the security of DII

* Defense Information Infrastructure



Network surveillance (image)

(6) Others

○ Acquisition of flight check aircraft (Citation 680A) (1 aircraft: ¥4.1 billion)

Acquire flight check aircraft in order to ensure flight safety of SDF and civilian aircraft by maintaining and managing airport functions through checks on the functions of flight security-related wireless facilities, etc. installed by the SDF

Flight check aircraft (Citation 680A) (picture of the same aircraft type)

3 Response to ballistic missile attacks

Strengthen postures to protect Japan from ballistic missile attacks in multi-layered and sustainable manners; Simultaneously build posture to respond to attacks by guerillas and special operations forces in addition to ballistic missile attacks

BMD-related budget: ¥179.1 billion

(1) Response to ballistic missile attacks

○ Introduction of new assets (item request)
Given North Korea's development of nuclear and missile has become "a New Level of Threat", start preparations to introduce ~~a~~ new assets (including and centered on Aegis Ashore).


Aegis Ashore

○ Acquisition of SM-3 Block IIA and SM-3 Block IB (¥65.7 billion)
Acquire SM-3 Block IIA and SM-3 Block IB to be deployed on Aegis-equipped destroyers


SM-3 Block IIA

○ Acquisition of Advanced Interceptor missiles (PAC-3MSE) (¥20.5 billion)
Acquisition of the PAC-3MSE missile, which is capable of defending against both ballistic and cruise missiles and aircraft

○ Conversion of fixed warning and control radar (FPS-7) and addition of functions for BMD response (repost)

○ Enhancement of the capability of the Japan Aerospace Defense Ground Environment (JADGE) system to counter ballistic missiles (¥10.7 billion)
Implement upgrades to enhance the capability to counter attacks using a lofted trajectory, attacks whose signs are difficult to be detected in advance, and attacks using simultaneous launches of multiple ballistic missiles


PAC-3MSE (picture of the same equipment type)

○ Research on a future ballistic missile interception system (¥100 million)
To enhance comprehensive capabilities of Japan's BMD system, conduct simulation and other research on optimal system to forge MD capability including the introduction of new assets

○ Development of next-generation warning and control radar equipment (repost)

○ BMD training
Improve SDF's capabilities concerning a series of BMD response and refine BMD operational coordination with the U.S. forces


BMD training(image)

(2) Response to attacks by guerillas and special operations forces

○ Response to attacks using NBC weapons
- Acquisition of an NBC reconnaissance vehicle (1 vehicle: ¥700 million)
- Acquisition of a decontamination set (Type I decontamination equipment) (1 set: ¥100 million)
  Enhance various decontamination capabilities in order to minimize the spread of damage and secondary damage by quickly responding to the large-scale contamination of personnel and equipment in the event of nuclear, biological and chemical (NBC) attacks, etc.
- New personal equipment sets (Personal protective equipment) (9,000 sets: ¥2.2 billion)
- Chemicals detectors (9 detectors: ¥40 million)

NBC reconnaissance vehicle

○ Acquisition of Type-16 mobile combat vehicle (repost)

○ Acquisition of personal equipment
- Acquisition of Type-89 rifles (1,500 rifles: ¥600 million)
- Acquisition of antipersonnel sniper rifles (6 rifles: ¥10 million)

Decontamination set
(Type I decontamination equipment)

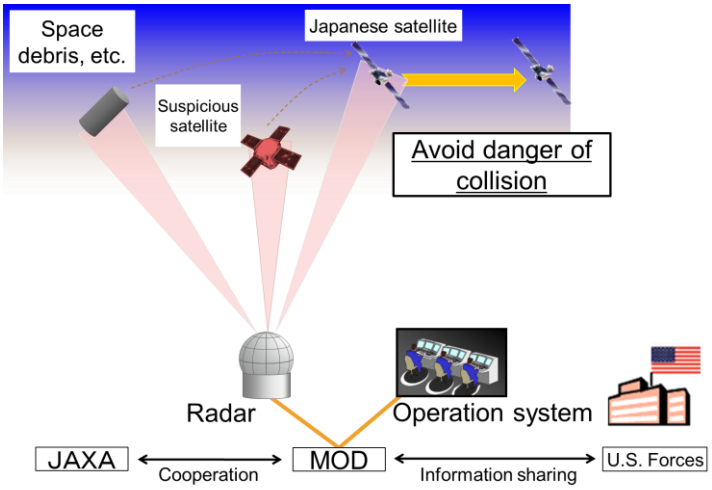
4 Response in outer space

Strengthen information gathering, command, control and communication capabilities by using satellites, and implement measures to secure stable use of outer space

Space-related budget: ¥88.7 billion*

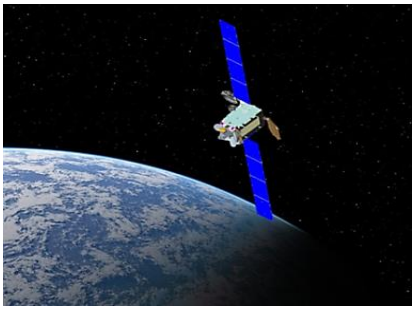
*Excludes the budget of BMD (space-related programs)

○ Efforts related to Space Situational Awareness system (¥4.4 billion)
- Detailed design, etc. concerning the development of Space Situational Awareness (SSA) system necessary for SSA based on cooperation with the U.S. and relevant domestic organizations, including JAXA
- Technical assistance for enhancing cooperation with the U.S. and JAXA and other organizations



Space Situational Awareness system and its operation (image)

○ Use of satellite communication (¥73.0 billion)
- Partial development of X-band defense communication satellite-3 (a successor satellite of Superbird C2)
- Modification of equipment to adapt to X-band communications satellites
- Leasing of commercial satellite communication lines and improvement and maintenance of satellite communications equipment



X-band defense communication satellite (image)

○ Use of commercial imagery satellites and meteorological satellites information (¥11.2 billion)
- Acquisition of data for imagery analysis (WorldView-4, domestic commercial optical satellite, nano satellites for earth observation, etc.)
- Use of JAXA Advanced Land Observing Satellite-2 (ALOS-2)

○ Research for the enhancement of C4ISR* functions through the use of outer space (¥77 million)
- Demonstration of dual-band infrared sensor in space (continued)

* C4ISR: Command, Control, Communication, Computer, Intelligence, Surveillance, and Reconnaissance

○ Dispatch of personnel to the U.S. Air Force Space Operations Course, etc (¥23 million)
- Acquire knowledge concerning matters related to outer space in general by dispatching personnel to the Space Operations Course provided at U.S. Air Force base in the U.S. state of Colorado
- Participation in multilateral table-top exercises, etc. in the field of outer space

* Budget of BMD space-related programs (¥112.0 billion)

5 Response in cyberspace

Make necessary improvements to the readiness to respond to cyber attacks, including enhancing collection and analysis of information on cyberspace threats in order to ensure sufficient cybersecurity against cyber attacks at all times, and conduct advanced research on how to effectively respond to cyber attacks

Cyber-related budget: ¥14.5 billion

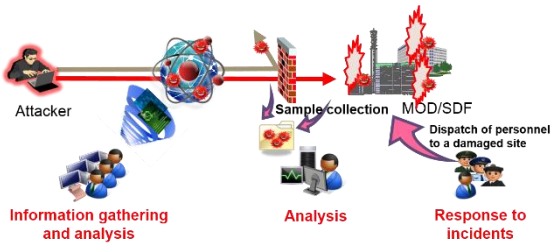
(1) Improvement/enhancement of capabilities and systems

Increase in the size of the Cyber Defense Group (from approx. 110 personnel to approx. 150 personnel)

○ Enhancement of the information gathering and analysis systems (an increase of approx. 20 personnel)
Enhancement of the systems to gather and analyze information concerning cyberspace threats

○ Enhancement of the analysis systems (an increase of approx. 10 personnel)
Enhance the systems to analyze cyber attacks against the MOD/SDF

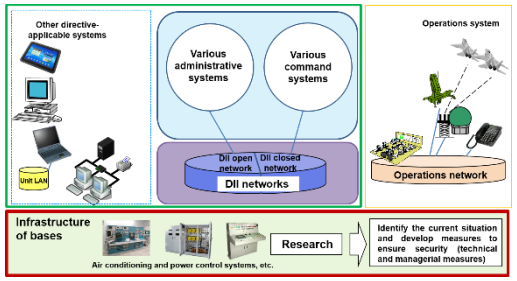
○ Enhancement of the system to respond to incidents (an increase of approx. 10 personnel)
Enhance the system to respond to cyberattacks against organizations, etc.



Improvement/enhancement of capabilities and systems (image)

(2) Improvement/enhancement of operational infrastructure

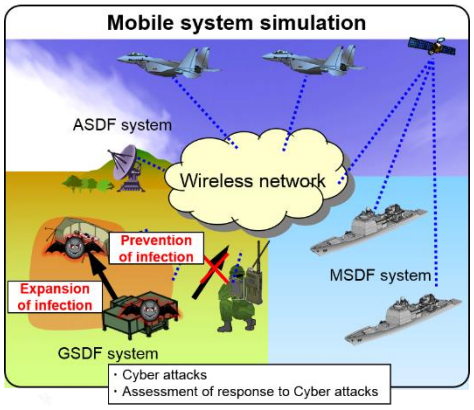
○ Research on security measures for infrastructure of bases (¥50 million)
Conduct research in order to identify cyber attack risks potentially existing in infrastructure of ASDF bases (power control systems, etc.)



Research on security measures for infrastructure of bases (image)

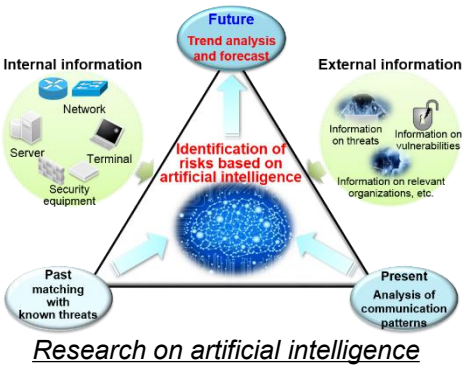
(3) Research on cutting-edge technologies

○ Research on the development of an exercise environment for responding to cyber attacks targeted at mobile systems (¥4.5 billion)
Conduct research on technology to respond to cyber attacks against mobile systems that contributes to the study and assessment of ways of effectively responding to cyber attacks targeted at the MOD/SDF's mobile systems



Research on the development of an exercise environment for responding to cyber attacks targeted at mobile systems (image)

○ Research on artificial intelligence applications related to cybersecurity (¥90 million)
Study the application of technologies such as deep learning to cybersecurity in order to enhance the effectiveness of defense by the Cyber Defense Group and conduct research on how to apply artificial intelligence to software programs and other measures which defend the SDF's networks



Research on artificial intelligence applications related to cybersecurity (image)

6 Response to large-scale disasters

Swiftly transport and deploy sufficiently sized units in the event of various disasters, and develop response readiness that is sustainable over a long-term through establishing a rotating staffing system based on a joint operational approach

(1) Maintenance/enhancement of function of military camps/bases to serve as hubs for disaster response

○ Promotion of seismic retrofitting and tsunami defense measures to maintain and enhance functions in preparation for the event of a disaster (¥6.2 billion)

○ Development of disaster response hub areas, etc. (Iruma) (¥2.0 billion)

Development of disaster response hub areas, etc. (iruma) (image)

○ Secure deployment footholds for the SDF in the event of disasters (Nara and Fukui) (¥4.0 million)
Allocate necessary expenses to secure SDF deployment facilities to serve as wide-area disaster response hubs from the perspective of establishing an effective system to handle large-scale disasters

(2) Implementation of exercises, etc. to respond to large-scale and unconventional disasters

○ SDF Joint Exercise for Rescue (JXR)
Implement SDF Joint Exercise for Rescue to maintain and improve the SDF's joint operation capabilities to respond to large-scale domestic disasters, in order to minimize damage through smooth and effective responses in the event of large-scale domestic disasters

SDF Joint Exercise for Rescue (JXR) (image)

○ Joint Disaster Response Exercise with U.S. Forces (Tomodachi Rescue Exercise: TREX)
Implement Joint Disaster Response Exercise with U.S. Forces to establish procedures on coordination with the U.S. Forces in Japan in the event of large-scale domestic disasters, and to maintain and enhance the capability to respond to earthquake disasters

Joint Disaster Response Exercise with U.S. Forces (TREX) (image)

○ Remote Island Disaster Relief Exercise (RIDEX)
Implement drills to maintain and enhance capabilities to ensure smooth joint disaster response operations against sudden disasters caused by large-scale disasters on remote islands

Remote Island Disaster Relief Exercise (RIDEX) (image)

(3) Acquisition, etc. of equipment contributing to disaster response

○ Type 07 mobility support bridge (1 set : ¥1.2 billion)
Acquire a mobility support bridge in order to temporarily restore bridges damaged by earthquakes, floods, etc. and conduct emergency evacuation of disaster-affected people and enable relief activities by the SDF, local governments, etc.

Type 07 mobility support bridge (Passage of an ambulance [disaster management exercise])

○ Material transport vehicles (6 vehicles: ¥60 million)
Acquire material transport vehicles in order to transport rubble and debris generated by various disasters and quickly implement restoration work in disaster-affected areas

Material transport vehicles (Transportation of rubble [Great East Japan Earthquake])

○ Water purification set (2 sets: ¥200 million)
Acquire water purification sets capable of purifying water from natural sources, such as seas, rivers and lakes, in order to secure drinking water and water for everyday life in the event of any type of disaster and other emergencies

Water purification set

○ Acquisition of Type 10 snow tractors (7 tractors: ¥200 million)

Type 10 snow tractors

○ Acquisition of tilt-rotor aircraft (V-22) (repost)

○ Upgrade of MSDF Osumi-class LST (repost)

○ Acquisition of a transport aircraft (C-2) (repost)

○ Development of a life-saving system (Type II life-saving system: ¥20 million)
Acquire the Type II life-saving system in order to conduct life-saving activity quickly and effectively in the event of large-scale disasters, etc.

Type II life-saving system (Component: chain saw)

Type II life-saving system (Component: engine cutter)

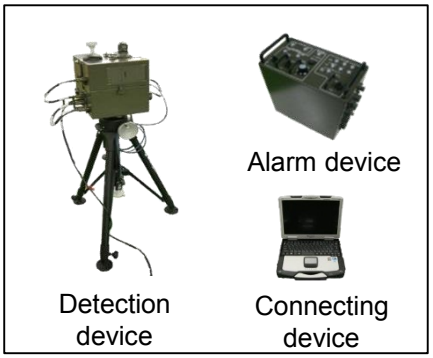
Type II life-saving system (Component: Equipment to detect presence of persons within damaged structures)

Enhancement of capabilities necessary to respond to Nuclear, Biological, and Chemical (NBC) weapons

○ Detection and measurement of contaminants
- Acquisition of NBC reconnaissance vehicles (repost)
- Acquisition of NBC alarms (1 set: ¥300 million)
- Acquisition of chemicals detectors (repost)

○ Protection from contaminants
New personal equipment set
(personal protective equipment) (repost)

○ Decontamination of contaminants
Acquisition of a decontamination set
(Type I decontamination equipment) (repost)



NBC alarms

7 Strengthen intelligence capabilities

Strengthen the MOD's system for intelligence collection, processing information, and analyzing and sharing the collected information, in order that the MOD can promptly detect and swiftly respond to warnings of various situations in areas surrounding Japan and take measures based on medium-to-long-term military trends

○ Enhancement of the Defense Attaché system
Dispatch one additional attaché to Malaysia and Belgium and newly dispatch one attaché to Chile

○ Reinforcement of intelligence gathering and analysis capabilities
Establish necessary arrangements at the Defense Intelligence Headquarters (DIH), etc. to enhance intelligence gathering and analysis capabilities related to international military situations, etc., including technical information

○ Development of a system to share geospatial data possessed and maintained individually by each SDF service and DIH throughout the whole of the MOD/SDF so that such data can be effectively and efficiently maintained (development of an integrated geospatial data infrastructure (integrated GDI,etc))

○ Acquisition of Unmanned Aerial Vehicles (RQ-4B Global Hawk) (repost)

○ Acquisition of data for imagery analysis (WorldView-4, commercial optical satellite, nano satellites for earth observation, etc.) (repost)
Gather information in the surrounding region using domestic commercial optical satellite, nano satellites for earth observation, etc., including the MOD's main optical satellite (WorldView-4), to which MOD has an assured tasking right

III Support stabilization of the Asia-Pacific region and improvement of the global security environment

In order to ensure the stability of the Asia-Pacific region, Japan will enhance bilateral and multilateral cooperative relationships and conduct various activities including training and exercises in a timely and appropriate manner, as well as actively engage in international peace cooperation efforts to properly address global security challenges.

1 Response to stabilization of the Asia-Pacific Region

Promotion of capacity building assistance

○ Initiatives under the ASEAN Defense Ministers' Meeting-Plus (ADMM-Plus)
Actively promote the enhancement of regional defense and security cooperation through ADMM-Plus, which is the only official meeting of defense ministers in the Asia-Pacific region

○ Initiatives based on the Vientiane Vision
Promote practical defense cooperation that contributes to the enhancement of the capabilities of the whole of the ASEAN in addition to individual ASEAN countries based on the Vientiane Vision, which is the guiding principle for Japan-ASEAN defense cooperation.

○ Participation in Pacific Partnership (PP) 2018
Visit countries in the Asia-Pacific region to provide medical services, facilities maintenance and repair services, conduct cultural exchanges, etc. Through cooperation with governments, militaries, international organizations and NGOs, the PP strengthens partnerships among participating countries and facilitates international disaster relief operations

The ADMM-Plus Humanitarian Assistance/Disaster Relief (HA/DR) Experts' Working Group meeting

Japan-ASEAN Ship Rider Cooperation Program

Pacific Partnership (image)

Promotion of capacity building assistance

○ Initiatives emphasizing capacity building assistance for the whole of ASEAN
- Implement assistance intended to promote sharing of the recognition of maritime security matters, including international laws
- Implement cyber security-related capacity building assistance

International law seminar concerning maritime affairs

○ Continuation of capacity building assistance, mainly in Southeast Asia
Implement assistance to enhance capabilities in such fields as humanitarian assistance, disaster relief and engineering and assistance for training of personnel

Humanitarian assistance and disaster relief (HA/DR) project (education image)

2 Appropriately respond to improve global security environments

Enhancement of capability to conduct overseas activities

○ Participation in multilateral exercises
Participate in multilateral exercises, such as Cobra Gold, in order to enhance capabilities for international peace cooperation activities


Cobra Gold (image)

International cooperation with UN and partners in the areas of strength

○ Dispatch of instructors to PKO Centers in African countries.
The SDF dispatches personnel as instructors in order to educate peace keeper candidates mainly in African countries to help improve their own peacekeeping capabilities and to maintain stability in the region

○ Dispatch of lecturers, etc. to the UN project for African Rapid Deployment of Engineering Capabilities (ARDEC)
Contribute to rapid deployment of U.N. PKO engineering units in Africa by dispatching SDF personnel, etc. and providing education to engineers from African countries with regard to the operation of heavy machinery

○ Disaster response capacity enhancement assistance for the Djibouti forces
Promote mutual understanding and confidence building with the Republic of Djibouti, mainly through enhancement of the relationship between the defense authorities, and contribute to the development and peace of Africa by implementing assistance to enhance disaster response capabilities for the Djibouti forces, for which there has been a strong request from the Djibouti government


Education concerning the operation of facilities and equipment (image)

Ensuring maritime security

○ Counter-piracy operations off the coast of Somalia and in the Gulf of Aden
- Continue counter-piracy operations by destroyers and P-3Cs off the coast of Somalia and in the Gulf of Aden
- Carry out activities in Combined Task Force 151 (CTF151), a multinational counter-piracy task force
- Implement air transportation using C-130H, etc. as necessary


A destroyer escorting commercial vessels (image)

IV Strengthen Japan-U.S. Alliance and Measures for Bases

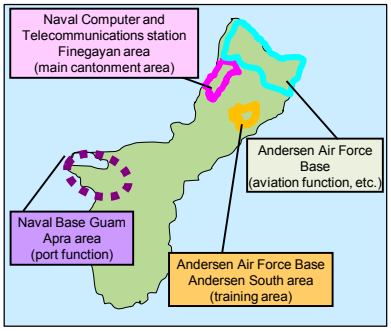
While maintaining the deterrence of U.S. Forces, Japan will steadily implement specific measures including the realignment of U.S. Forces in Japan to mitigate the impact on local communities, including those in Okinawa.

Provisionally kept the same amount as the previous FY: ¥241.3 billion

1 Measures for mitigating the impact on local communities

Relocation of U.S. Marine Corps stationed in Okinawa to Guam

- Funding for projects necessary for the relocation of U.S. Marine Corps Personnel from Okinawa to Guam, etc.



Guam

Realignment of U.S. Forces in Japan

- Relocation of MCAS Futenma
- Return of Land Areas South of Kadena Air Base
- Relocation of Carrier-based Aircraft from Naval Air Facility Atsugi to MCAS Iwakuni, etc.
- Facility improvements for contingency use
- Training Relocation of U.S. aircraft to mainland Japan and Guam from Kadena Air Base and other airfields
- Community development measures (realignment grants, etc.)

MCAS Futenma

Considering the improvement of implementing measures that help mitigate the impact on local communities as early as possible, it is necessary to reflect in the budget the results of coordination with local communities, U.S. Forces, etc. acquired during the budget drafting process, For this purpose, MOD will consider carefully during the process of budget making and take necessary measures.

Provisionally kept the same amount as the previous FY: ¥ 3.5 billion

2 SACO-related cost

- Japan will continue to steadily implement those measures in the Special Action Committee on Okinawa (SACO) Final Report unless changes were made under the Japan-U.S. Security Consultative Committee (“2+2”) Joint Statement

3 Promotion of Measures for bases

In order to balance the operational requirements of defense facilities will impact mitigation for local communities. steadily implements measures for communities around bases and promotes measures to secure smooth and effective stationing of the U.S. Forces in Japan.

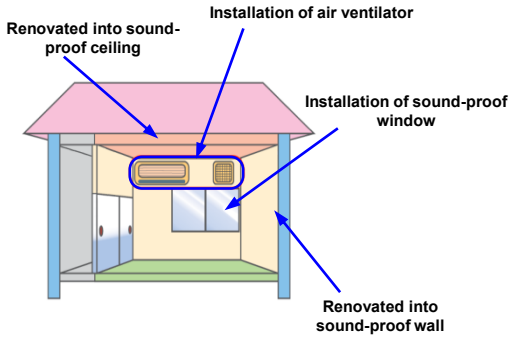
(1) Expenses related to programs for communities around bases ¥140.2 billion

Including: Residential sound proofing : ¥49.4 billion
Improvement of living environment of neighboring communities: ¥90.8 billion

○ Expenses for the prevention of disturbances resulting from SDF activities or the establishment and operations of defense facilities

- Implementation of sound proofing projects for residences around air bases, etc.
- Implementation of projects to improve the living environment of neighboring communities (river and road restoration, sound-proofing systems in schools, sand control dams, improvement of public welfare facilities, etc.)
- Implementation of projects covered by specified Defense Facilities Environment Improvement Adjustment Grants, which are strongly requested from municipalities around bases (development of public facilities and so-called soft projects, such as medical cost subsidies, etc.)

[Example of residential sound proofing]



Sand control dam

(2) Cost Sharing for the stationing of U.S. Forces in Japan ¥198.4 billion

Including: Special Measures Agreement: ¥149.5 billion
Facilities Improvement program: ¥21.5 billion
USFJ employee measures, etc.: ¥27.4 billion

○ Expenses of burden from the Special Measures Agreement and other measures to ensure the smooth and effective stationing of U.S. Forces in Japan

- Share the labor losts of USFJ employees and cost of utilities used at USFJ facilities
- Facilities Improvement program(barracks, family housing, etc.)
- Share the cost of social insurance premiums by the employer (healthcare insurance, welfare annuity insurance, etc.) for USFJ employees

Barracks

(3) Rent for facilities, compensation expenses, etc. ¥139.9 billion

○ Rental cost of defense facility land, etc., compensation for the loss of fishers' income due to training on water areas, etc.

V Measures concerning personnel and education

In order to secure highly-qualified human resources (SDF personnel, SDF reserve personnel, etc.) who play a part in national defense while enhancing their strength, the MOD will comprehensively review and appropriately implement necessary measures including recruitment, reemployment , and securing of SDF reserve personnel, etc. and also promote of several measures to support women's activities.

1 Promotion of measures to secure highly-qualified human resources who play a part in national defense

(1) Enhancement of recruitment programs

Enhancement of advertisement and posture for recruitment to deal with the increasingly severe recruitment environment (¥1.0 billion)

○ Development of an app for voluntary recruitment of personnel (¥90 million)
Develop a mobile app for recruitment that enables ordinary people to collect information from active SDF personnel, who are an important source of information for applicants and that makes it easy for them to view recruitment pamphlets and other materials and to implement application procedures in order to facilitate support for their application for the SDF

○ Creation of recruitment advertising videos (¥230 million)
Promote recruitment advertisement targeted at potential applicants from various angles by creating recruitment advertising videos and strengthening the lineup of recruitment advertising media. In particular, dissemination of information will be enhanced.

○ Participation in a joint recruitment fair focusing on specific attributes of required personnel (¥9.0 million)
Open booths at joint recruitment fairs for women, for parents of senior high-school students and for people with the experience of studying abroad

(2) Enhancement of reemployment support programs

○ Establishment of vocational training programs (¥80 million)
Create new subjects related to the acquisition of the newly-established quasi-medium-sized vehicle driving license and information processing security supporter qualification

○ Enhancement of vocational training programs (¥20 million)
- Expand education concerning disaster prevention/crisis management in order to enhance support for reemployment at disaster prevention-related divisions of local governments
- Increase subjects related to the acquisition of the qualification of marine engineer in order to strengthen support for reemployment in fields where knowledge, skills and experience related to ships cultivated during service in the SDF may be useful

○ Measures that contribute to the prevention of job leaving after reemployment (¥30 million)
Add a personality test to the vocational aptitude examination in order to enable job choice based on multi-faceted self-analysis and expand the range of personnel eligible for the examination to SDF officers

(3) Promotion of measures related to SDF reserve personnel, etc. who support sustainable operation of units

○ Establishment of the SDF Reserve Personnel, etc. Cooperation-Related Benefits (provisional name) (¥6.0 million)

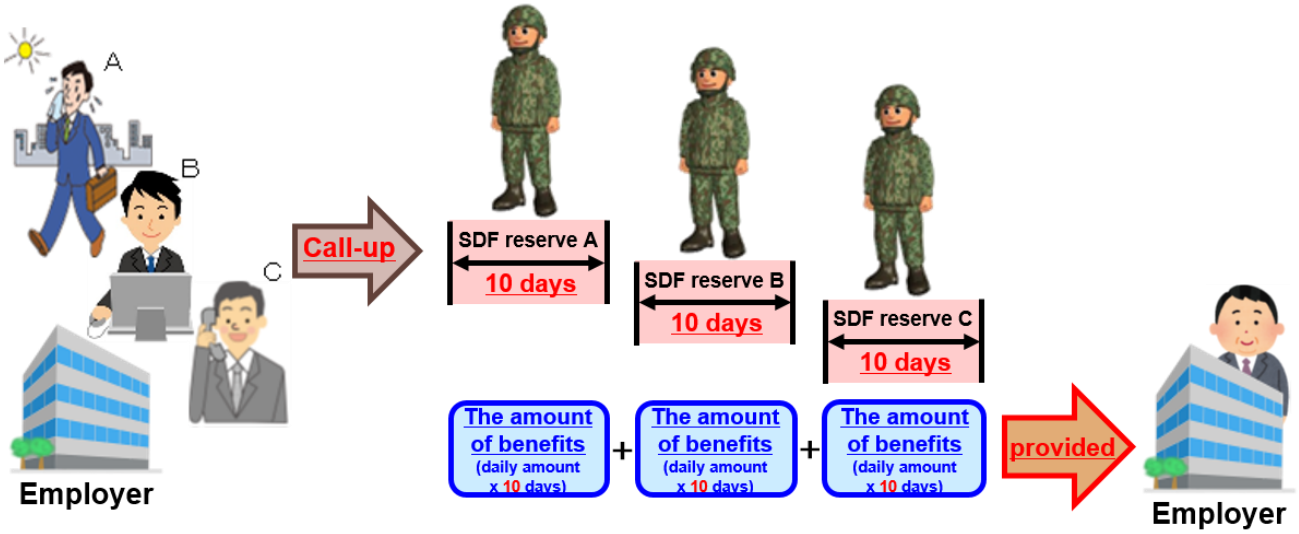
Provide benefits taking account of the burden borne by employers (1) when employees who are SDF reserve personnel, etc. respond to an actual service call-up in disaster relief deployment, etc. or (2) when such employees have to take leave from their jobs because of injury sustained during an actual service or training call-up.

* Establish a new clause related to the benefits under the SDF Act

Establishment of the SDF Reserve Personnel, etc. Cooperation-Related Benefits (image)

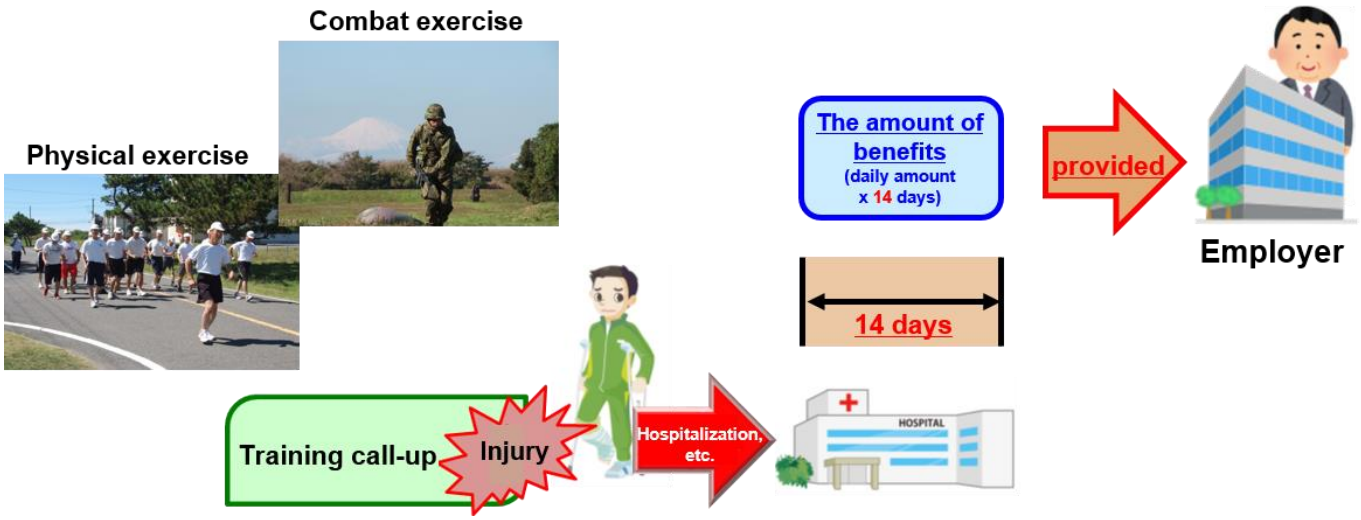
(1) When employees respond to an actual service call-up in disaster relief deployment, etc.

In a case where an employer hires three employees who are SDF reserve personnel, etc. and where each of them engages in SDF service for 10 days, bringing a total number of days of service to 30, based on an arrangement between the SDF and the employer for deployment on a rotation basis under the information provision system (Article 73-2 of the SDF Act)



(2) When an employee has to take leave from his/her job because of injury sustained during an actual service or training call-up

In a case where an employee takes 14 days of leave from his/her job for hospitalization due to an injury sustained in an exercise during a training call-up



(4) Others

○ Promotion of measures to prevent power harassment

2 Promote measures to ensure further engagement of female personnel and the work-life balance

Further expand recruitment and promotion of female personnel while implementing initiatives to integrally promote work-life balance

○Female SDF personnel in action

Repelling from a helicopter as part of a medical relief activity

Engaging in an exercise for operating a ship

Operating aircraft

(1) Improvement of the environment for the working style reform (¥100 million)

- ○ Develop an environment to ensure flexibility in working hours and location
  - Provision of terminals for telework
  - Introduce e-learning contents

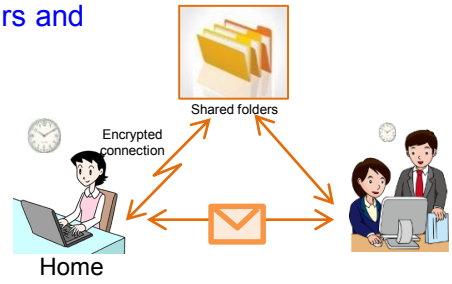


Image of telework

(2) Improvement of the working environment for female SDF personnel (¥1.8 billion)

- ○ Development of facilities, etc. for female SDF personnel
  - Make renovations to improve living and working environments for female SDF personnel (renovations of lavatory and bathing facilities) (GSDF, MSDF and ASDF)
  - Promote secured sections for female personnel in barracks and office buildings (MSDF and ASDF)

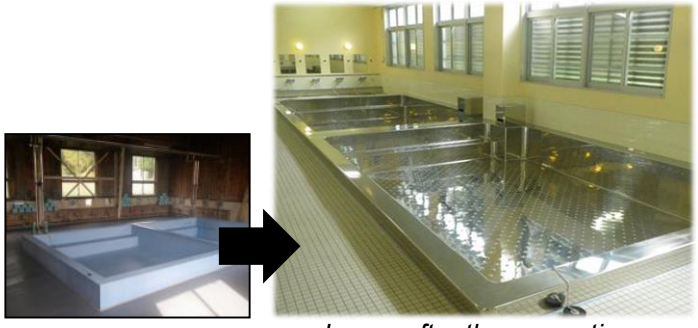


Image after the renovation

Secured section for women (image)

Image after the renovation

Renovation of a lavatory facility for men into one for women (image)

- ○ Development training for mentors
- ○ Invite outsourced counselors for female SDF personnel, etc.

(3) Support for work-life balance (¥140 million)

○ Development of an environment that makes it easy for child-caring personnel to continue working (¥8.0 million)
- Set up the room in the SDF building for pregnant and parturient women to keep in good condition. (Ichigaya area)
- Introduce a system that enables the use of a sitter service when personnel cannot care for children due to an emergency duty or for other reasons (Ichigaya area)
- Implement training for personnel on child care leave to smoothly return to the workplace

○ Renovation of workplace nurseries in SDF and provision of furniture/fixture, etc. (¥110 million)
Promote workplace nurseries in SDF suitable for working patterns peculiar to SDF so that personnel raising children can engage in their duties without concern

- Renovate workplace nurseries (Iruma Air Bases of the ASDF)
- Provide furniture/fixture workplace nurseries in the SDF buildings, etc.

Workplace nurseries in SDF (image)

○ Provision of furniture/fixture for temporary child-care service in case of emergency operations (¥20 million)
- Provide furniture/fixture such as safety mats and baby beds for temporary child-care service in case of emergency operations (each SDF)
- Implement temporary child-care service drills, preparing for an emergency operations
- Participate in courses designed to improve child-care skills for temporary child-care service in case of emergency operations(MSDF)

A scene from temporary child-care service in a drill for emergency operations

(4) Promotion of female personnel engagement in international cooperation, etc. (¥7.0 million)

○ Hold a forum for female SDF personnel and servicewomen from foreign countries

○ Dispatch SDF personnel for training as gender advisors
Send SDF personnel to “Gender Advisor Course” (sponsored by the Swedish Armed Forces) in order to introduce the perspective of eliminating gender (*) disparity in international peace cooperation efforts, etc.

* Gender: Distinction between men and women formed historically, socially, and culturally, such as the "male image" and "female image," different from sex that shows the biological difference between males and females

(5) Implementation of training and drills for raising awareness (¥10 million)

Effort to eliminate conventional mindset about gender roles in the workplace and develop work environment that enables all personnel, including those under time restriction due to child-care or nursing care, to demonstrate their full potential

○ Hold seminars on mentality reform for staff in managerial positions, etc.

○ Collective trainings for promoting gender equality, etc. (GSDF, MSDF and ASDF)

○ Distribution of pamphlets featuring rolls played by female personnel

A scene of the collective training

(6) Others (¥70 million)

○ Measures for recruitment of female SDF personnel
- Open a booth at a joint recruitment fairs for women (repost)
- Send female SDF personnel to recruitment fairs for female applicants

○ Promote measures to eradicate sexual harassment, etc.

3 Reform of personnel management system

Implement measures to strengthen education and research systems at the National Institute for Defense Studies, the National Defense Academy, and the National Defense Medical College, as well as develop an environment enabling personnel to devote themselves to their duties

(1) The National Institute for Defense Studies

○ Host an ARF HDUCIM (Heads of Defense Universities / Colleges / Institutions Meeting)
Host HDUCIM under the framework of the ARF (ASEAN Regional Forum). HDUCIM is the meeting in which ARF member countries participate in order to engage in dialogue about national defense education and the security situation in the Asia-Pacific region

ARF HDUCIM.

(2) The National Defense Academy

○ Develop the education and research system
- Establish the Cutting-Edge Academic Program Promotion Organization (provisional name) in order to develop a system to improve the education and research level through the improvement of the contents of lectures and research and the implementation of international exchange programs
- Increase the number of instructors in order to develop the education system of the National Defense Academy

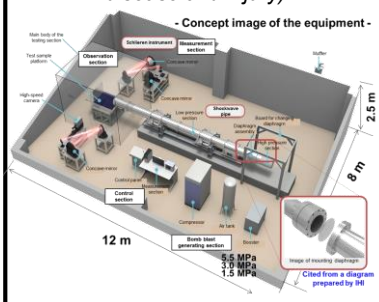
(3) The National Defense Medical College

○ Strengthen the functions of the college as a hub for education and research in the field of military medicine
- Develop clinical skills laboratories, etc. (¥80 million)
- Conduct advanced research on military medicine (¥320 million)
- Conduct research on the development of a hub for research on military medicine (¥4.0 million)

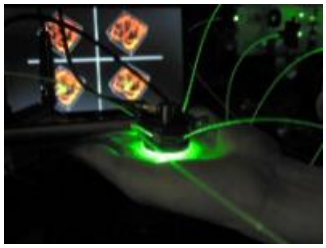
○ Improvement and enhancement of clinical systems
Increase the number of staff of the National Defense Medical College Hospital to cope with medical care for Type I infectious diseases

○ Improvement and enhancement of the SDF's systems for response to accidents and for education and research
Increase in the number of personnel and development of equipment for the purpose of maintaining the personal identification capability (DNA analysis) (Development of equipment, etc.: ¥30 million)

Cutting-edge research on military medicine (field of battlefield disease and injury)



Equipment to generate bomb blast shock waves



LISW (laser-induced shock wave) equipment

4 Strengthen health functions

Promote initiatives for upgrading SDF hospitals to hubs with enhanced functions and establish an efficient and high-quality medical care system, including improved management of the National Defense Medical College Hospital, etc. In addition, greater emphasis will be placed on securing and training of medical officers, nurses, and emergency medical technicians. Furthermore, strive to enhance frontline first aid capabilities and develop postures for rapid evacuation of the injured personnel

○ Initiatives toward upgrading SDF hospitals to hubs with enhanced functions

Steadily promote development of a core hospital in each district and hospitals with special functions including education of international activities, submarine medicine, and aviation medicine

- Implementation design for rebuilding of SDF Fukuoka Hospital (main hospital in the Kyushyu region) (¥300 million)
- Construction of the building of SDF Iruma Hospital (provisional name) (¥5.4 billion)
- Development toward the conversion of JSDF Central Hospital's medical care information system, etc. (¥900 million)

Image of Iruma Hospital (provisional name)

○ Improve frontline first aid capabilities in response to emergency events

Development of educational equipment in order to enhance the first aid capability on the frontlines (¥140 million)

- Develop a simulator as an educational equipment intended to help acquire skills required for the treatment of gunshot wounds and other injuries
- Development of portable medical equipment necessary for medical protection unit personnel who are qualified as assistant nurses and emergency medical technicians, to implement life-saving procedures at the frontlines

Educational training using a simulator

Image of portable medical equipment

○ Development of health functions that contribute to facilitation of the SDF's activities in the southwestern region

Research on most recent activities and development of systems in foreign countries related to the enhancement of the capabilities to provide emergency medical care and send back invalids in the event of emergencies (¥30 million)

○ Enhance capabilities in response to infectious diseases

- Develop human resources specialized in infectious diseases
- Overseas field survey intended to secure sites for training of personnel
- Develop equipment to improve the National Defense Medical College Hospital's readiness to provide medical care for Type I infectious diseases (¥30 million)
- Increase the number of staff of the National Defense Medical College Hospital to cope with medical care for Type I infectious diseases (repost)
- Acquisition of isolators related to transportation of infectious disease patients abroad, etc. (¥70 million)

Image of response toward infectious diseases

VI Streamlining Initiatives

Various initiatives will be promoted to further rationalize and streamline overall equipment acquisitions, seeking to save approx. ¥128.0 billion

1 Procurement of equipment, etc. and services using long-term contracts

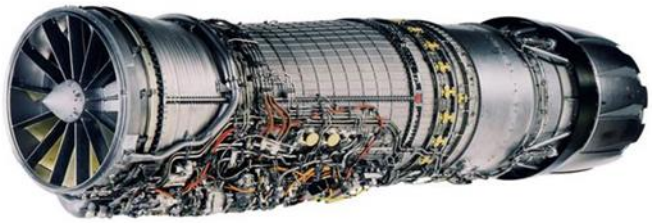
[Expected reduction: approx. ¥5.0 billion]

Pursue the reduction of procurement cost and stable acquisition by making use of long-term contracts of five fiscal years or longer

○ Long-term contract of Performance Based Logistics (PBL) in order to improve operational availability and ensure timely and adequate parts supply posture, etc.

- PBL of maintenance parts for the F110 engine (for F-2 fighter aircraft) (procured over 6 fiscal years)
  (Expected reduction: approx. ¥5.0 billion (13.6%))

F-2 fighter aircraft



F110 engine

2 Review maintenance methods [Expected reduction: approx. ¥68.6 billion]

Streamline maintenance costs by extending periodic maintenance intervals

[Example]

○ Extension of the regular maintenance period for the F7-10 engine (for fixed-wing patrol aircraft (P-1))
(Expected reduction: approx. ¥4.0 billion)

Fixed-wing patrol aircraft (P-1)

○ Unification of information processing subsystems for destroyers
Unify information processing subsystems for destroyers, which were previously developed for individual destroyers
(Expected reduction: approx. ¥2.3 billion)

Destroyer (picture of Destroyer Akizuki)

○ PBL of maintenance parts for transport helicopters (CH-47J/JA) (for four years)
(Expected reduction: approx. ¥900 million)

Transport helicopter (CH-47J/JA)

3 Use of civilian goods and review of specifications

[Expected reduction: approx. ¥16.9 billion]

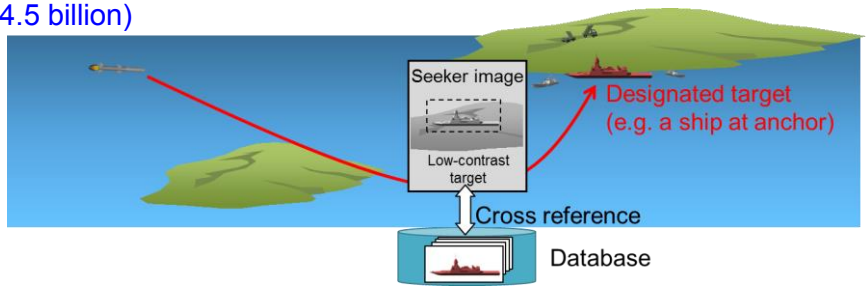
Pursue cost savings by using civilian goods and reviewing specifications of equipment with regard to cost effectiveness

[Example]

○ Development of the Tactical Network Control System (TNCS)
Revise the specifications of TNCS phone terminals and use civilian products
(Expected reduction: approx. ¥6.8 billion)

Use of civilian phone terminals (image)

○ Research on infrared image-guided technology intended to identify low contrast targets
Utilize results of similar research programs for system designs, etc.
(Expected reduction: approx. ¥4.5 billion)



Research on infrared image-guided technology intended to identify low contrast targets (image)

4 Bulk purchase of equipment [Expected reduction: approx. ¥37.8 billion]

Streamline budget costs by reviewing equipment with high prices due to small-lot purchases and long-term maintenance and by concentrating budget requests for them in a single fiscal year if cost savings can be expected

5 Amount of reduction achieved through past streamlining efforts

Example	FY2014	FY2015	FY2016	FY2017	FY2018
Procurement of equipment, etc. and services using long-term contracts	—	¥41.7 billion	¥14.8 billion	¥11.0 billion	¥5.0 billion
Review of maintenance methods (Logistics reform)	¥8.1 billion	¥33.6 billion	¥43.2 billion	¥54.0 billion	¥68.6 billion
Use of civilian goods and review of specifications	¥25.0 billion	¥42.3 billion	¥45.5 billion	¥58.2 billion	¥16.9 billion
Bulk purchase of equipment	¥33.1 billion	¥35.0 billion	¥46.5 billion	¥46.7 billion	¥37.8 billion
Prime cost scrutiny, etc.	-	-	-	¥34.5 billion	-
Single-year total	**¥66.0 billion**	**¥153.0 billion**	**¥150.0 billion**	**¥204.0 billion***	**¥128.0 billion**
Total	¥66.0 billion	¥219.0 billion	¥369.0 billion	¥573.0 billion	¥701.0 billion

(Note 1) The 61.6 billion yen reduction from introducing the Patriot system capable of carrying and operating PAC-3MSE missiles, which was appropriated in the third supplementary budget for FY2016, is included in the reduction amount for FY2017.
(Note 2) The figures for FY2018 are expected reductions in the budget request.

VII Initiatives to promote defense equipment and technology policies

Steadily and appropriately conduct project management based on various measures taking account of the Strategy on Defense Production and Technological Bases and the Defense Technology Strategy and under the Acquisition Strategic Plan, and promote and strengthen defense equipment and technology cooperation with foreign countries in order to ensure optimal acquisition of equipment

1 Promote strategic initiatives to ensure technological superiority

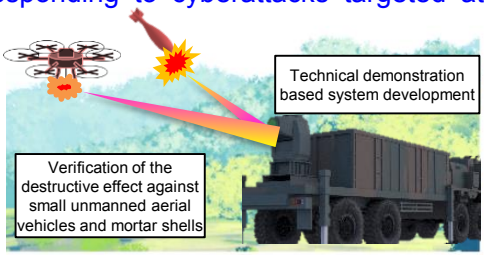
Steadily implement various measures based on the Defense Technology Strategy, which was formulated in August 2016

Promotion of prioritized research in promising technology fields

Place priority on fields related to (i) unmanned technology, (ii) smart and network technology, (iii) high-power energy technology, and (iv) improvement of function and performance of existing equipment as indicated in the Medium-to-Long Term Defense Technology Outlook (announced in August 2016)

○ Research on the development of an exercise environment for responding to cyberattacks targeted at mobile systems (repost)

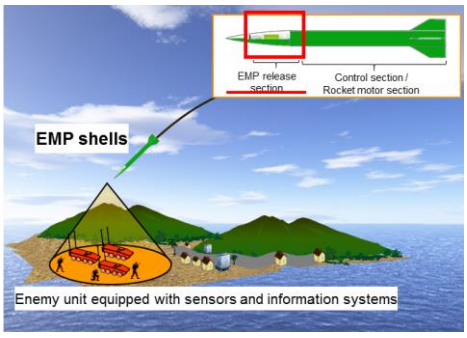
○ Research on a high-power laser system (¥8.7 billion)
Conduct research on a low-cost high-power laser system which can quickly respond to such threats as a large number of small unmanned aerial vehicles flying at low altitude and mortar shells



Research on a high-power laser system (image)

○ Research on EMP shells (¥1.4 billion)
Produce a prototype of an component of an EMP shell (EMP radiation part) which temporarily or permanently incapacitates the functions of sensors and information systems by generating strong electro magnetic pulses and conduct a study on EMP protection technology

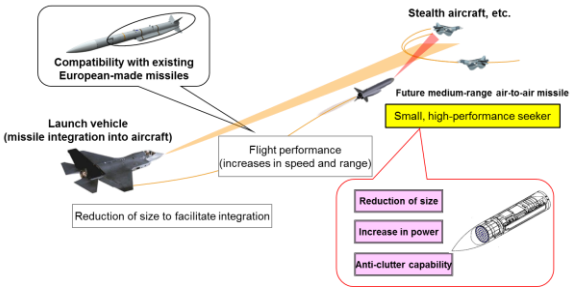
*EMP: Electro Magnetic Pulse



Research on EMP shells (image)

○ Research on a future medium-range air-to-air missile (¥7.3 billion)
Conduct research on a small, high-performance microwave seeker capable of being integrated into fighter aircraft and responding to future airborne threats and verify compatibility between with a missile installed with a ducted rocket engine through Japan-U.K. joint research

* Ducted rocket engine: a propulsion system that creates propulsion power by mixing air compressed at the air intake with high-temperature, high-pressurized fuel generated through the reaction of fuel reactants in the ram combustion chamber during high-speed flight



Research on a future medium-range air-to-air missile (image)

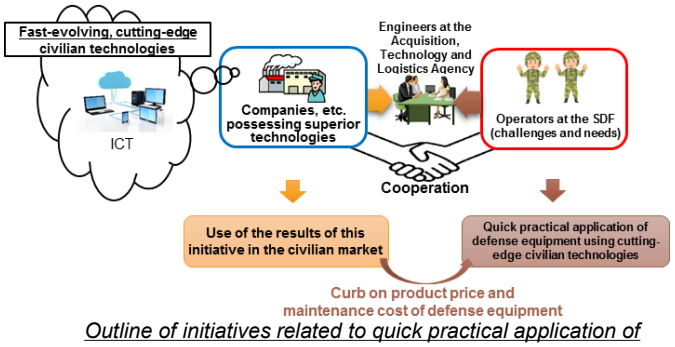
Research and development based on the Technology R&D Vision of Unmanned Equipment

○ Study on a vision of unmanned aerial vehicles with a high level of safety and reliability (¥30 million)
Seek opinions from operators toward the realization of unmanned aerial vehicles for long-distance, out-of-sight operation with emphasis placed on safety and reliability in order to enable operation suited to Japan's geographical features and reflect the results in the digital mockup and cost estimate model formulated in FY2017.

Promotion of quick practical application of evolving cutting-edge civilian technologies to defense equipment

○ Initiative to realize quick practical application of new technologies (¥1.5 billion)

Realize practical application in a short time period—around three to five years—through cooperation between engineers and operators in incorporating fast-evolving, cutting-edge civilian technologies, including information and communication technology (ICT), whose technology innovation cycle is short, and seek to curb on product price and maintenance cost for defense equipment by using the results of this initiative in the civilian market



Outline of initiatives related to quick practical application of fast-evolving, cutting-edge civilian technologies

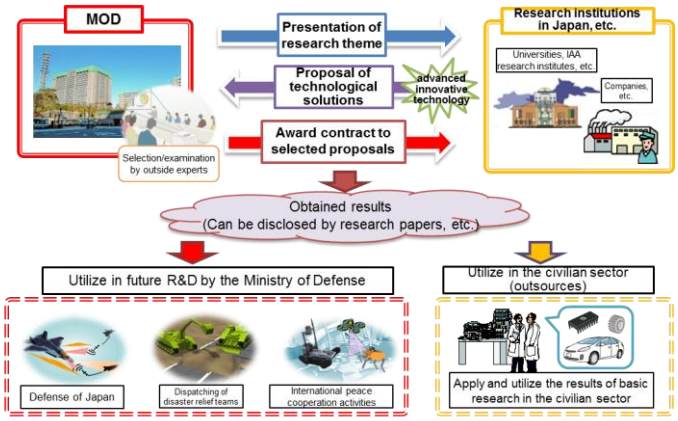
Discovery and promotion of cutting-edge technologies expected to be used for defense applications

○ Innovative Science & Technology Initiative for Security (funding program established in FY2015) (¥11.0 billion)

The funding program aims to discover ingenious researches regarding advanced civilian technologies, with the expectation that the studies would contribute to future research and development in the defense field

Expanded to enable the awards of larger-scale and longer-term research projects in FY2017

Continue to push the funding program



Outline of the Innovative Science & Technology Initiative for Security

Identify cutting-edge technologies and strengthen the technology management system in order to protect Japanese technologies (know technologies, protect technologies)

○ Research on cutting-edge technologies (¥310 million)

Conduct research on technologies that may become the key for the development of future defense equipment (including dual-use technologies) and research on foreign technology trends in order to secure technological superiority

○ Research on technology management (¥90 million)

- Conduct research using superior outside knowledge in order to obtain information necessary for appropriately and quickly evaluating sensitivity in strict examination related to the three Principles on Transfer of Defense Equipment and Technology
- Dispatch outside experts as investigators in order to conduct appropriate discussions at international conferences related to technology management

Development of a new testing and evaluation facility intended to improve the efficiency of research and development

○ Development of the Iwakuni Oceanic Environmental Testing and Evaluation Satellite (provisional name) (¥26.0 billion)

Develop a testing and evaluation facility necessary for efficiently and effectively conducting research on unmanned underwater vehicles, etc. using dual-use technologies based on the basic policy on the relocation of governmental organizations in Iwakuni (Iwakuni Oceanic Environmental Testing and Evaluation Satellite (provisional name))

○ Development of large engine-testing equipment (¥7.4 billion)

Develop new large engine-testing equipment necessary for improving the efficiency of the testing, measurement and so on of large engines for aircraft at the Chitose Test Center (provisional name)

* Change the name of the Sapporo Test Center to the Chitose Test Center (provisional name) in line with the enhancement of the testing center's functions, including the development of large engine testing equipment, in order to smoothly conduct various tests and other activities by obtaining the local community and residents

Initiatives to use private-sector knowledge, etc.

○ Hold the Technology Policy Workshop on Public-Private Cooperation in order to promote initiatives to secure Japan's technological superiority by using private-sector knowledge, etc. in the field of defense technology (¥100 million)

2 Promote optimal acquisition through project management, etc.

Strengthen project management and steadily promote acquisition programs concerning equipment intended for prioritized project management and also implement initiatives that give consideration to joint operation and standardization

Steadily promote acquisition programs

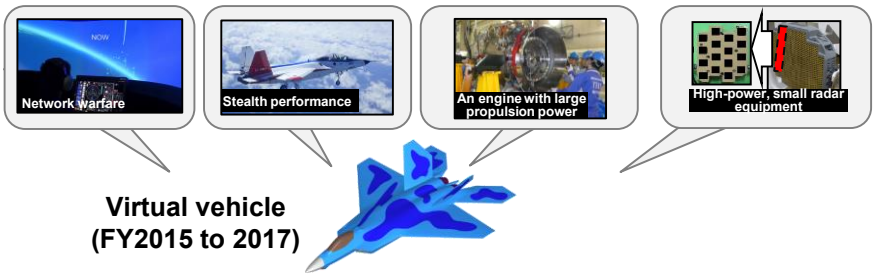
○ Promotion of optimal acquisition of equipment, etc. intended for project management
- Selected programs for acquisition management, etc.
  Advanced Ballistic Missile Interceptor (SM-3 Block IIA), Type-03 medium range surface-to-air missile (improved), Unmanned Aerial Vehicles (Global Hawk), Amphibious vehicle (AAV7), New vessel, GSDF UH-X, Tilt-rotor aircraft (V-22), Advanced SH-60K, Patrol aircraft (P-1), Transport aircraft (C-2), F-35A fighter aircraft, Future fighter aircraft, and FY2017 submarines
- Equipment, etc. intended for quasi-priority management (equipment, etc. for which project management should be conducted in a manner similar to the manner of project management for the above equipment, etc.)
  New ship-to-air missile, Type-12 surface-to-ship missile (improved), new air-to-ship missile for patrol aircraft, and Space Situational Awareness (SSA) system

○ Strengthen project management
- Increase the number of project managers, etc. related to expansion of equipment, etc. intended for project management
- Research on maintenance/development of equipment contributing to improvement of operational availability （¥40 million）

Initiatives related to equipment intended for priority project management

(Future fighter aircraft)

○ Research on the feasibility of the development of a future fighter aircraft system (¥2.4 billion)
Making use of outcomes of technical feasibility study on “Virtual Vehicle ”of the future fighter based on the related research projects’ achievements, refine the vehicle’s specifications and collect necessary reference materials for studies on the national developmental affiliation and international cooperation, in order to assess the feasibility of a development program including international joint one.

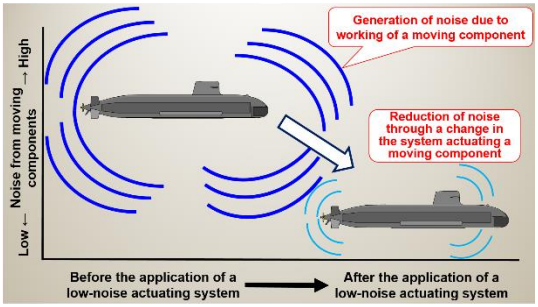


Research on the feasibility of the development of a future fighter aircraft system
○ Refinement of the aircraft specifications (pursuit of cost reduction)
○ Study on a domestic development system and international cooperation
○ Future extensibility

Research on the feasibility of the development of a future fighter aircraft system (image)

(FY2017 submarines)

○ Research on a low-noise actuating system for submarines (¥5.7 billion)
Conduct research on a new type of a low-noise actuating system that reduces noise generated by actuating equipment, with a view to adopting it for the “FY2017 submarines” in order to make submarines more silent



Research on a low-noise actuating system for submarines (image)

Initiatives related to equipment taking account of the viewpoint of joint operation

○ Conduct a study on guidelines concerning networking of equipment taking account of joint operation

3 Promoting defense equipment and technology cooperation

Strengthen measures to promote effective defense equipment and technology cooperation in collaboration with private sectors through information gathering on partner countries' needs, "packaged" cooperation including assistance for maintenance, and strong then publicity, based on the progress of cooperative projects with the countries

○ Strategic research intended to realize cooperation suited to other countries' circumstances
- Clarify cooperation partner countries' needs and the feasibility of cooperation by conducting a survey on their procurement systems and production and technological bases (¥460 million)
- Promoting cooperative projects meticulously with other countries through dispatch of personnel of the Acquisition, Technology and Logistics Agency who engage in defense equipment cooperation (¥90 million)
- In order to further promote technology cooperation conduct a survey on trends in latest technologies, research and development framework and the status of technology exchanges in foreign countries (¥70 million)

○ Promotion of joint research with foreign countries
Research on a future medium-range air-to-air missile (repost)

○ Measures to promote defense equipment and technology cooperation
in order to increase the feasibility of defense equipment cooperation prepare public relations reference materials, such as videos intended to provide explanations concerning Japanese defense equipment in foreign languages (¥30 million)

○ Promotion of comprehensive cooperation not only equipment itself but also maintenance
- Expenses for dispatching personnel of Japanese maintenance companies as a capacity building assistance measure concerning the maintenance of the TC-90s in the Philippines (¥200 million)
- Dispatch Japanese private-sector engineers and invite foreign private-sector engineers as part of capacity building assistance concerning equipment maintenance for ASEAN member states (¥30 million)

Provision of assistance related to the maintenance of the TC-90 aircraft by a Japanese company

○ Promotion of Japanese defense equipment by collaboration between government and industries
Open booths of the Acquisition, Technology and Logistics Agency during international defense equipment exhibitions and display Japanese developed defense equipment and superior technologies possessed by small and medium-sized Japanese enterprises (¥300 million)

Display of the P-1 patrol aircraft (International Paris Air Show 2017)

A booth of the Acquisition, Technology and Logistics Agency (Eurosatory 2016)

4 Promote measures to maintain and enhance defense production and technological bases

Regarding the defense industry in a severe environment, promote measures to maintain and strengthen the technological bases as well as discovering and using superior technologies possessed by small and medium-sized enterprises through meticulously grasping the actual circumstances of the supply chain

◯ Discovery and use of technologies possessed by small and medium-sized enterprises

- Create opportunities for small and medium-sized enterprises possessing technologies applicable to defense equipment to match with the MOD/SDF, making use of exhibitions (¥20 million)
- Support feasibility researches by small and medium-sized enterprises that participated in the matching events on the possible applications of their own products to defense equipment, by testing/evaluating them at units (¥30 million)
- Discover advanced civilian technologies through a program for quick practical application of new technologies (repost)


Workshops and exhibitions to promote entry by small and medium-size enterprises (image)

◯ Grasping the actual circumstances of supply chains

- Conduct surveys on identifying components of defense equipment with high applicability to other industrial sectors and companies involved in that production in order to take necessary measures (¥110 million)
  * Complete by the end of FY 2017 surveys on the supply chains concerning 30 items of equipment covered by individual surveys, for which budgetary measures have already been taken
- Master a survey method in preparation for conducting routine surveys on the supply chains based on public information (¥30 million)

◯ Research on a new method of promoting the acquisition reform

Conduct surveys and research on a framework for the public and private sectors to jointly study ways of reducing cost and on new ways of improving defense equipment procurement and reducing procurement prices, such as promoting competition between companies through active evaluating of companies by the MOD, and then establish concrete systems (¥150 million)

◯ Enhancement of security readiness related to defense procurement in the public and private sectors

- Develop a reliable electronic certificate for existing emails in order to share information between the public and private sectors in a secure manner in response to the risk of targeted cyberattacks, etc. and conduct research on the future vision of an environment for information sharing between the public and private sectors with an eye towards a future cloud environment (¥10 million)
- As part of an effort to strengthen defense production and the technological base, develop an educational environment related to corporate security and information security intended to foster experts related to corporate security necessary for ensuring that companies implement sufficient security measures that can be trusted by foreign countries (¥30 million)

VIII Others

1 Restructuring and organizational quota changes

Implement unit reorganization programs in order for effective deterrence and response to various situations

○ Unit deployment in Amamioshima and Miyako Islands

Deploy a medium-range surface-to-air missile unit in Camp Amami (provisional name), a surface-to-ship missile unit in Camp Setouchi (provisional name) and an area security unit in Camp Miyakojima in order to deploy units in areas where there is no SDF presence (deliberation is being conducted with a view to deploying a medium-range surface-to-air missile unit and a surface-to-ship missile unit in Miyakojima in FY2019 or later

○ Establishment of a new post of Principal Joint Staff Councilor (provisional name)

Establish a new post of Principal Joint Staff Councilor in order to enhance the functions of external explanations and coordination with relevant internal and external bureaus

○ Request for increase in the number of SDF personnel

Improve the readiness to quickly respond to various situations by increasing the number of SDF personnel in order to enhance the response capability against ballistic missiles and the initial response capability in the southwestern region and the defense capability in the surrounding seas and airspace

	GSDF	MSDF	ASDF	Total
Request for increase in the number of personnel	＋２２０	＋２７６	＋２１０	＋７０６

* The total requested number of increase in SDF personnel is 740 if an increase linked to the quota number at the Joint Staff Office, etc. (34 personnel) is included

○ Organizational quota changes

- Create a new post of Director-General for Policy-Making Process Coordination at the Minister's Secretariat, which is responsible for overseeing activities related to promotion of evidence-based policy making (EBPM), including high-level involvement in a broad range of policy issues, and for conducting close examination from a cross-sectoral perspective at the time of policy making, including with respect to important matters extending across various bureaus and organizations, in order to develop the functions essential to promoting EBPM at the MOD
- Change the name of the Sapporo Test Center to the Chitose Test Center (provisional name) in line with the enhancement of the testing center's functions, including the development of large engine testing equipment, in order to smoothly conduct test evaluation activities~~.~~ which are expected to increase further in the future, by obtaining the understanding of the local community and residents~~.~~
- Newly establish Project Supervision Division(provisional name) at the procurement department of regional defense bureaus in order to enhance business operation readiness for implementation of construction at regional defense bureaus

2 Tax reform request

○ Perpetuation of Special Tax Exemption Measure Regarding Light-Oil for SDF Vessels and Transmission Machinery

[Light-Oil Delivery Tax]

JMOD requests perpetuation of the Special Tax Exemption Measure implemented until late 2017 for delivery of Light-Oil being used as fuel for SDF Vessels and Transmission Machinery; considering the necessity of procuring Light-Oil in carrying out the SDF's mission for the benefit of the public under limited budget.

Anti-piracy operations

Ballistic missile defense

○ Perpetuation of a Special Tax Exemption Measure when Providing Tax-Exempt Light Oil Based on the U.S. and Others' Military Actions Related Measures Act, etc.

[Light-Oil Delivery Tax]

JMOD requests perpetuation of the Special Tax Exemption Measure for deemed taxation on delivery of Light-Oil being used as fuel for Foreign Military vessels and others engaging in rear-support actions, etc. based on the U.S. and Others' Military Actions Related Measures Act, Act Concerning Measures to Ensure Peace and Security of Japan in situations that Will Have an Important Influence on Japan's Peace and Security, International Peace Support Act, and Ship Inspection Operations Act.

○ Perpetuation of a Special Tax Exemption Measure when Providing Tax-Exempt Light-Oil Based on ACSA (Acquisition and Cross-Servicing Agreement)

[Light-Oil Delivery Tax]

JMOD requests perpetuation of the Special Tax Exemption Measure for deemed taxation on delivery of Light-Oil being used for fuel in Australian/U.K. Naval vessels based on Japan-Australia ACSA and Japan-U.K. ACSA.

JMOD also requests expansion of the Special Tax Exemption Measure so that it may also be applied to provision of tax exempt light-oils based on the future ACSA that may be signed.

Major equipment

1 Major equipment

Procurement type				FY2017 Number procured	FY2018 Number procured	FY2018 Amount (¥100 million)
Aircraft	GSDF	Tilt-rotor aircraft (V-22)		4	4	457
		CH-47JA		6	—	—
	MSDF	Life extension of fixed-wing patrol aircraft (P-3C)		(3)	(3)	12
		Life extension of patrol helicopter (SH-60K)		(2)	(3)	56 (19)
		Life extension of patrol helicopter (SH-60J)		(2)	(2)	10
		Life extension of imagery intelligence gathering aircraft (OP-3C)		(1)	(1)	3
		Improvement in capability of radars mounted on fixed-wing patrol aircraft (P-3C)	Upgrade	(15)	(4)	1
			Parts	(—)	(—)	
	ASDF	Fighter aircraft (F-35A)		6	6	881
		Improvement in air-to-air combat capability of fighter aircraft (F-2)	Upgrade	(16)	(2)	8
			Parts	(9)	(5)	
		Additional installment of JDCS function to fighter aircraft (F-2)		(12)	(2)	
		Transport aircraft (C-2)		3	2	450 (4)
		New airborne early-warning aircraft (E-2D)		—	2	491
		Improvement in capability of Airborne Warning And Control Systems (AWACS) (E-767)	Upgrade	(2)	(1)	83
			Parts	(—)	(—)	
		New aerial refueling and transport aircraft (KC-46A)		1	1	277
		Flight check aircraft (Citation 680A)		2	1	41
	Joint Unit	Unmanned Aerial Vehicle (RQ-4B Global Hawk)		1	1	144
Vessel	MSDF	New class ship		—	2	964 (142)
		Submarine (SS)		1	1	715 (23)
		Mine sweeper Ocean (MSO)		1	—	—
		Ocean surveillance ship (AOS)		1	—	—
		Life extension of Asagiri-class destroyer	Work	(1)	(2)	6
			Parts	(4)	(4)	
		Life extension of Abukuma-class destroyer	Work	(2)	(—)	2
			Parts	(—)	(2)	
		Life extension of Hatakaze-class destroyer	Work	(1)	(—)	—
			Parts	(—)	(—)	
		Life extension of Kongo-class destroyer	Work	(1)	(—)	26
			Parts	(—)	(1)	
		Life extension of Oyashio-class submarine	Work	(3)	(4)	46
			Parts	(6)	(5)	
		Life extension of Landing Craft Air Cushion	Work	(2)	(—)	—
			Parts	(—)	(—)	
		Life extension of Kurobe-class training support vessel	Work	(1)	(—)	—
			Parts	(—)	(—)	
		Life extension of Hibiki-class Ocean surveillance ship	Work	(—)	(—)	7
			Parts	(—)	(1)	
		Life extension of Towada-class fast combat support ship	Work	(—)	(—)	5
			Parts	(2)	(2)	
		Improvement in capacity of the short-range SAM system on Takanami-class destroyer	Work	(—)	(1)	0.5
			Parts	(—)	(—)	
		Modernization of destroyer CIWS (high-performance 20mm autocannon)	Work	(4)	(3)	1
			Parts	(12)	(—)	

Procurement type				FY2017 Number procured	FY2018 Number procured	FY2018 Amount (¥100 million)
Vessel	MSDF	Improvement in anti-submarine capability of Akizuki-class destroyer, etc. (multistatic)	Work	(—)	(1)	0.4
			Parts	(3)	(—)	
		Improvement in anti-submarine capability of Murasame-class destroyer (surface vessel torpedo tubes)	Work	(1)	(—)	—
			Parts	(2)	(—)	
		Improvement in the calculation capability of FCS-3, etc.	Work	(—)	(—)	7 (9)
			Parts	(—)	(1)	
		Modernization of command system of Asagiri-class destroyer	Work	(1)	(2)	8
			Parts	(—)	(—)	
		Modernization of command system of Takanami-class destroyer	Work	(—)	(1)	5
			Parts	(—)	(—)	
		Modernization of command system of Murasame-class destroyer	Work	(—)	(—)	20
			Parts	(1)	(2)	
		Modernization of command system of Akizuki-class destroyer	Work	(—)	(—)	13
			Parts	(—)	(1)	
		Modernization of command system of Hyuga-class destroyer	Work	(—)	(1)	5
			Parts	(1)	(—)	
		Modernization of command system of Izumo-class destroyer	Work	(—)	(—)	7
			Parts	(—)	(1)	
		Modernization of command system of Oyashio-class submarine	Work	(1)	(2)	27
			Parts	(1)	(1)	
		Improvement in capability of Osumi-class LST	Work	(1)	(2)	9
			Parts	(1)	(—)	
Missile	GSDF	Type-03 middle-range surface-to-air missile (modified)		1 company	1 company	182
		Type-11 short-range surface-to-air missile		1	1	36
		Middle-range multi-purpose missile		5 sets	9 sets	76
		Type-12 surface-to-ship missile		1	1	129
	ASDF	Surface-to-air missile for base air defense		0.5	—	—
Firearm, vehicle, etc.	GSDF	Type-89 rifle		2,300	1,500	6
		Anti-personnel sniper rifle		6	6	0.1
		5.56mm machine gun MINIMI		48	—	—
		60mm mortar (B)		5	6	0.2
		84mm recoilless rifle (B)		3	—	—
		81mm mortar L16		1	1	0.1
		120mm mortar RT		6	2	1
		Type-99 155mm self-propelled howitzer		6	7	76
		Type-10 tank		6	6	83
		Amphibious vehicle (AAV7)		11	—	—
		Type-16 mobile combat vehicle		33	16	121
		Vehicle, communications equipment, facility equipment, etc.		¥21.1billion (29)	—	420 (1)
BMD	MSDF	Upgrade of the capability of Aegis-equipped destroyers		(1)	—	—

Note 1: The procurement amount for FY2017 indicates the number that was envisioned in the original budget.

Note 2: Price represents amounts, excluding non-recurring costs, needed for the production of equipment. The non-recurring costs are indicated in parentheses in the amount column (external value).

Note 3: “Number procured” indicates the number newly contracted in FY2018. (The period for acquiring the item varies by equipment, but can take between two to five years.)

Note 4: The number in brackets represents the number related to upgrading the existing commissioned equipment.

Note 5: Regarding the procurement for the improvement in capability of radars mounted on fixed-wing patrol aircraft (P-3C), improvement in air-to-air combat capability of fighter aircraft (F-2), improvement in capability of Airborne Warning And Control Systems (AWACS) (E-767), improvement of the short-range SAM system on Takanami-class destroyer, modernization of destroyer CIWS (high-performance 20mm autocannon), improvement in anti-submarine capability of Akizuki-class destroyer, etc. (multistatic), improvement in antisubmarine capability of Murasame-class destroyer (surface vessel torpedo tubes), improvement in calculation capability of FCS-3, etc., modernization of command system of destroyers, modernization of command system of Oyashio-class submarine, and improvement in capability of Osumi-class LST, the upper figure represents the procurement of modification and work services for the existing commissioned equipment, while the lower figure represents the number of parts, etc. necessary for the capability improvement. Regarding the volume of procurement for the service life extension of vessels, the upper figure represents the number of ships subject to service life extension work and the lower figure represents the number of parts procured for service life extension work.

Note 6: The number of procurements for the upgrade of the capability of Aegis-equipped destroyers represents the number of procurements for upgrading two Atago-class destroyers with Ballistic Missile Defense (BMD) capability, which started in FY2012.

2 Major research and development programs (new)

Item	Overview	FY2018 amount (¥100 million)
Development of next-generation warning and control radar equipment	Develop next-generation warning and control radar equipment which possesses sufficient detection and tracking capabilities to respond to future airborne threats and ballistic missiles and which are superior in resiliency and economic efficiency	196
Research on element technologies of a high-velocity glide missile intended for the defense of remote islands	Conduct research on element technologies of a high-velocity glide missile intended for the defense of remote islands, which is capable of gliding at high velocity and hitting a target, in order to enable island-to-island firing	100
Research on element technologies of a new anti-ship missile intended for the defense of remote islands	Conduct research on element technologies of a new anti-ship missile for the defense of remote islands in order to improve the range and survivability of existing anti-ship missiles in light of the increasing range of missiles possessed by foreign countries so that such foreign missiles can be countered from outside their range	77
Research on the development of an exercise environment for responding to cyberattacks targeted at mobile systems	Conduct research on technology to respond to cyberattacks against mobile systems that contribute to the study and assessment of ways of effectively responding to cyberattacks targeted at the MOD/SDF's mobile systems	45
Research on a high-power laser system	Conduct research on a low-cost high-power laser system which can quickly respond to such threats as a large number of small unmanned aerial vehicles flying at low altitude and mortar shells	87
Research on EMP shells	Produce a prototype of an element of an EMP shell element (EMP release section) which temporarily or permanently incapacitates the functions of sensors and information systems by generating strong electro magnetic pulses and conduct a study on anti-EMP protection technology	14
Research on a future medium-range air-to-air missile	Conduct research on a small, high-performance electronic wave seeker capable of being integrated into fighter aircraft and responding to future airborne threats and verify compatibility with a missile installed with a ducted rocket engine through Japan-U.K. joint research	73
Research on a low-noise actuating system for submarines	Conduct research on a new type of low-noise actuating system that reduces noise generated by actuating equipment, with a view to adopting it for the "FY2017 submarines" in order to make submarines more silent	57

3. Changes in the number of SDF personnel

● Changes in the number of SDF personnel, etc.

(Unit: Person)

	End of FY2017	End of FY2018	Change
GSDF	158,931	158,909	-22
Regular personnel	150,856	150,834	-22
Ready reserve personnel	8,075	8,075	0
MSDF	45,363	45,360	-3
ASDF	46,942	46,936	-6
Joint units	1,259	1,288	29
Joint Staff Office	368	372	4
Defense Intelligence Headquarters	1,911	1,910	-1
Internal Bureau	48	48	0
Acquisition Technology and Logistics Agency	407	409	2
Total	247,154	247,157	3
	(255,229)	(255,232)	(3)

Note 1: Figures for the end of each fiscal year are budget figures
Note 2: The number in the parentheses includes the number of SDF ready reserve personnel

● Number of SDF personnel (annual average)

(Unit: Person)

	GSDF	MSDF	ASDF
Annual average	139,958	42,229	43,462

● Number of SDF reserve personnel

(Unit: Person)

	GSDF	MSDF	ASDF	Total
SDF reserve personnel	46,000	1,100	800	47,900

● Number of candidates for reserve personnel

(Unit: Person)

	GSDF	MSDF	Total
SDF reserve candidates	4,600	21	4,621

● Change in number of administrative officials, etc.

(Unit: Person)

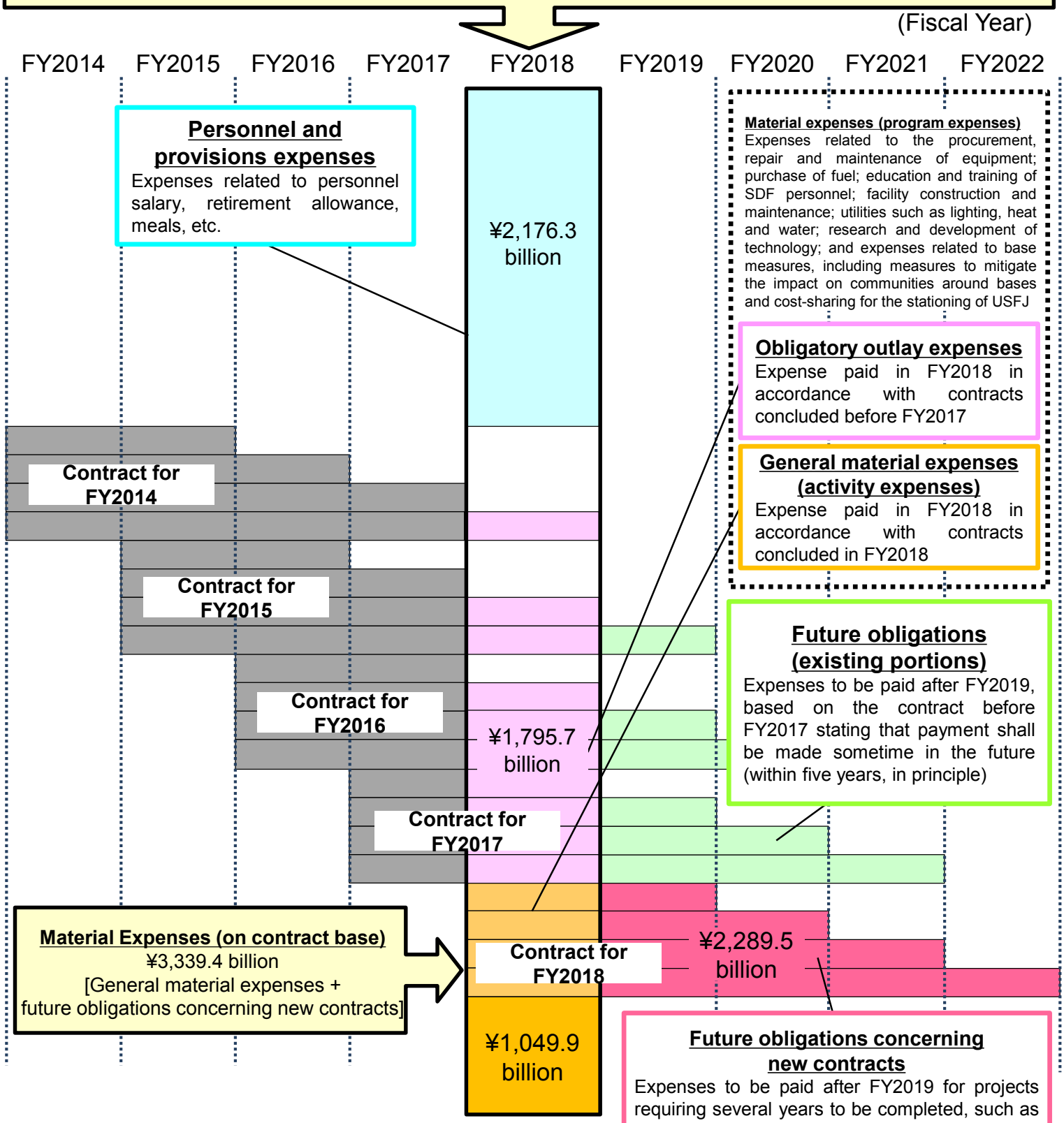
	FY2017	FY2018	Remarks
Increase	179	425	
Rationalization, etc.	-266	-269	
Total	-87	156	
Number at the end of FY	20,979	21,135	

Note 1: Including the Minister, State Minister, two Parliamentary Vice-Ministers, and Senior Adviser to the Minister

Reference

Composition of defense-related expenses

Expenditures: ¥5,021.9 billion
[Personnel and provisions expenses + obligatory outlay expenses + general material expenses]



Notes:
1. The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.
2. This chart is a rough diagram. The length of a box does not necessarily correspond to the actual amount of expenses.
3. Future obligations concerning new contracts include expenses to be paid after FY2023 in association with the introduction of long-term contracts for the procurement of equipment.

[Details and classification of material expenses (program expenses)] (Unit: ¥100 million)

FY2018	Expenditure base	Contract base
Material expenses (program expenses)	28,456	33,394
Obligatory outlay expenses	17,957	
General material expenses (Activity expenses)	10,499	10,499
Future obligation concerning new contracts		22,895

○ Expenditure base: Total amount to be paid in the current fiscal year for projects like acquisition of equipment and facility development. Specifically, it is the sum of the expenses to be paid in FY2018 (general material expenses) based on the contracts concluded in FY2018 and the expenses to be paid in FY2018 (obligatory outlay expenses) based on the contracts concluded before FY2017. This is a useful point of view in understanding the share of defense-related expenses in the overall expenditure budget of the government, which is in principle an annual budget.

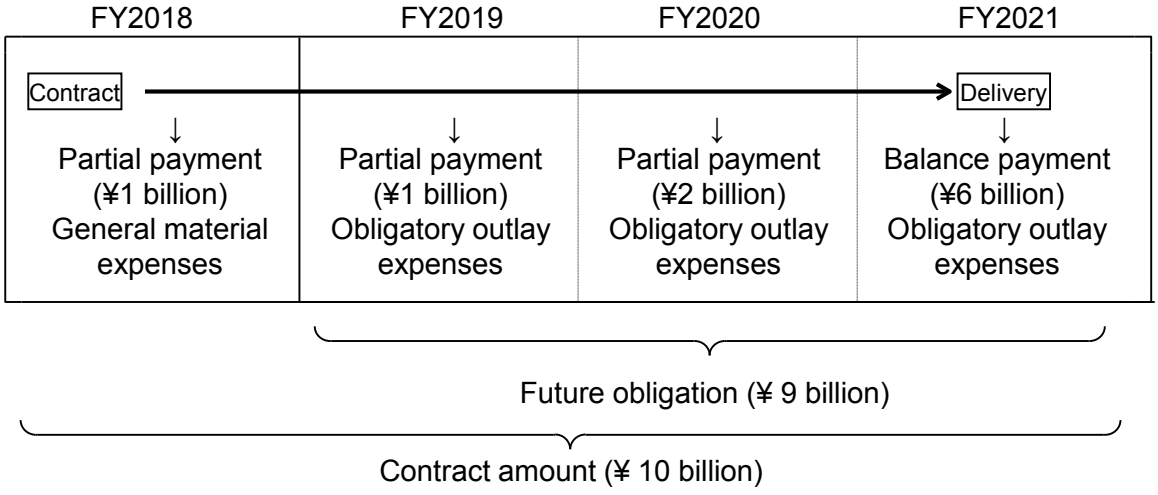
○ Contract base: Total amount of contracts concluded in the current fiscal year for projects like acquisition of equipment and facility development. Specifically, the sum of the expenses to be paid in FY2018 and the expenses to be paid after FY2019 (future obligation pertaining to new contracts) based on the contracts concluded in FY2018. This is a useful point of view in understanding the total amount of expenses by program with respect to year-by-year projects for developing defense capabilities.

Concept of Future Obligation

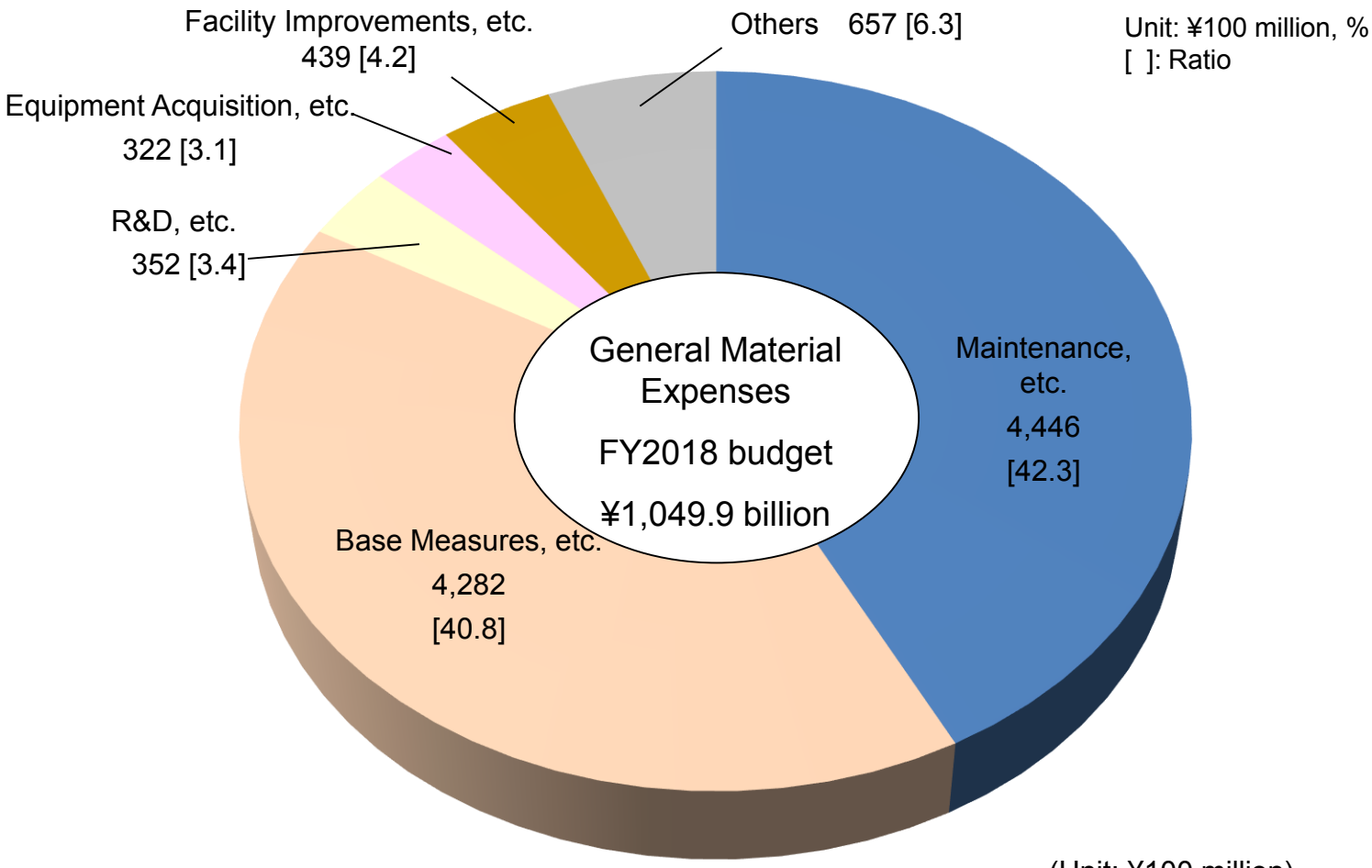
The build-up of defense capabilities, such as procurement of major equipment including vessels and aircraft, as well as construction of hangars and accommodations for SDF personnel, may take several fiscal years. For this reason, the Ministry of Defense makes contracts for which the span is several fiscal years (up to five years, in principle), and, at the time of concluding a contract, makes an advance commitment to pay the expenses at a certain time in the future.

Future obligation refers to the amount which will be paid in the fiscal year or years following the year the contract is concluded, in accordance with the contract of several fiscal years.

(e.g.) ¥10 billion worth of equipment is procured under a four-year contract



Details of General Material Expenses (Activity Expenses)

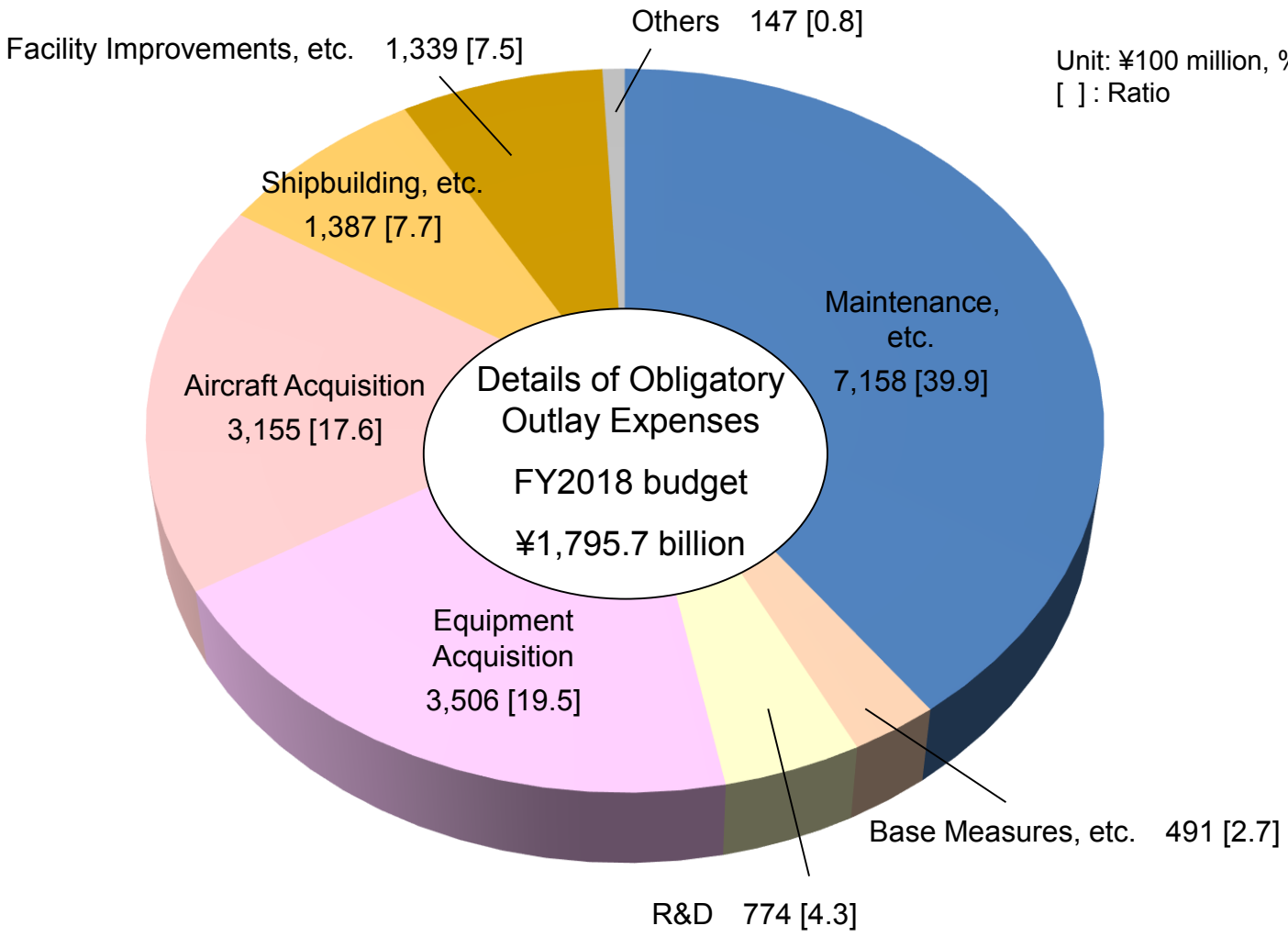


(Unit: ¥100 million)

Item	FY2017	FY2018	YoY Change
Maintenance, etc.	4,333	4,446	113
・Petrol	735	939	204
・Repair	2,065	1,968	-97
・Education & Training	300	293	-7
・Medical Care, etc.	272	280	8
・Utilities	960	966	6
Base Measures, etc.	4,096	4,282	186
・Countermeasures in Areas near Bases	950	1,086	135
・Host Nation Support	1,788	1,809	21
・Rent, Compensation Costs, etc.	1,359	1,388	29
Research & Development	262	352	90
Equipment Acquisition, etc.	257	322	64
Facility Improvements, etc.	382	439	58
Other (computer rentals, etc.)	640	657	18
Total	9,970	10,499	529

Note: The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.

Details of Obligatory Outlay Expenses



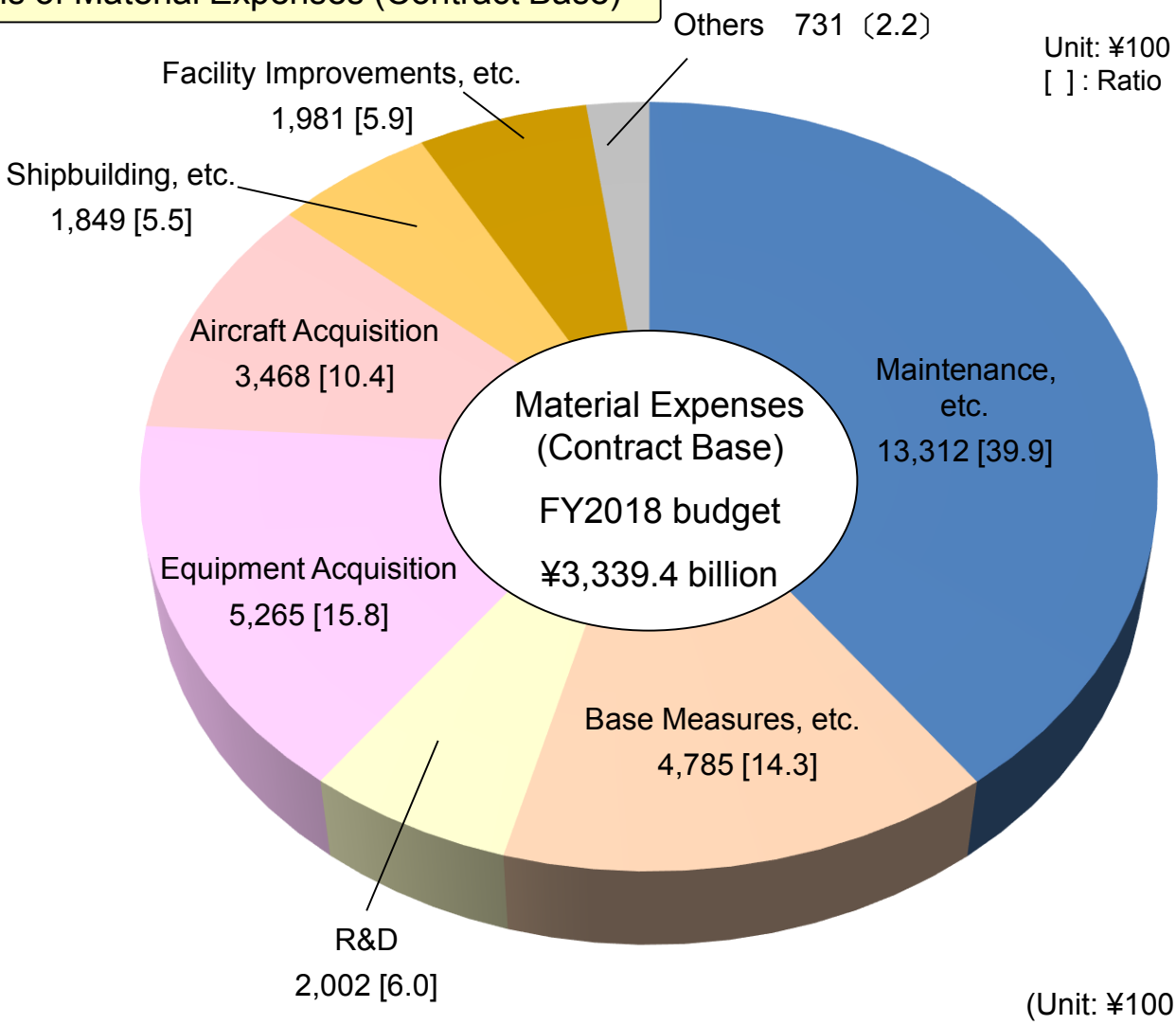
(Unit: ¥100 million)

Item	FY2017	FY2018	YoY Change
Maintenance, etc	6,555	7,158	602
Repair	6,178	6,884	705
Education & Training, etc.	377	274	-103
Base Measures	433	491	58
Research & Development	955	774	-181
Equipment Acquisition	3,916	3,506	-409
Aircraft Acquisition	2,721	3,155	435
Shipbuilding, etc.	1,512	1,387	-125
Facility Improvements, etc.	1,189	1,339	150
Other (computer rentals, etc.)	84	147	63
Total	17,364	17,957	594

Note: The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.

Details of Material Expenses (Contract Base)

Unit: ¥100 million, %
[ ] : Ratio

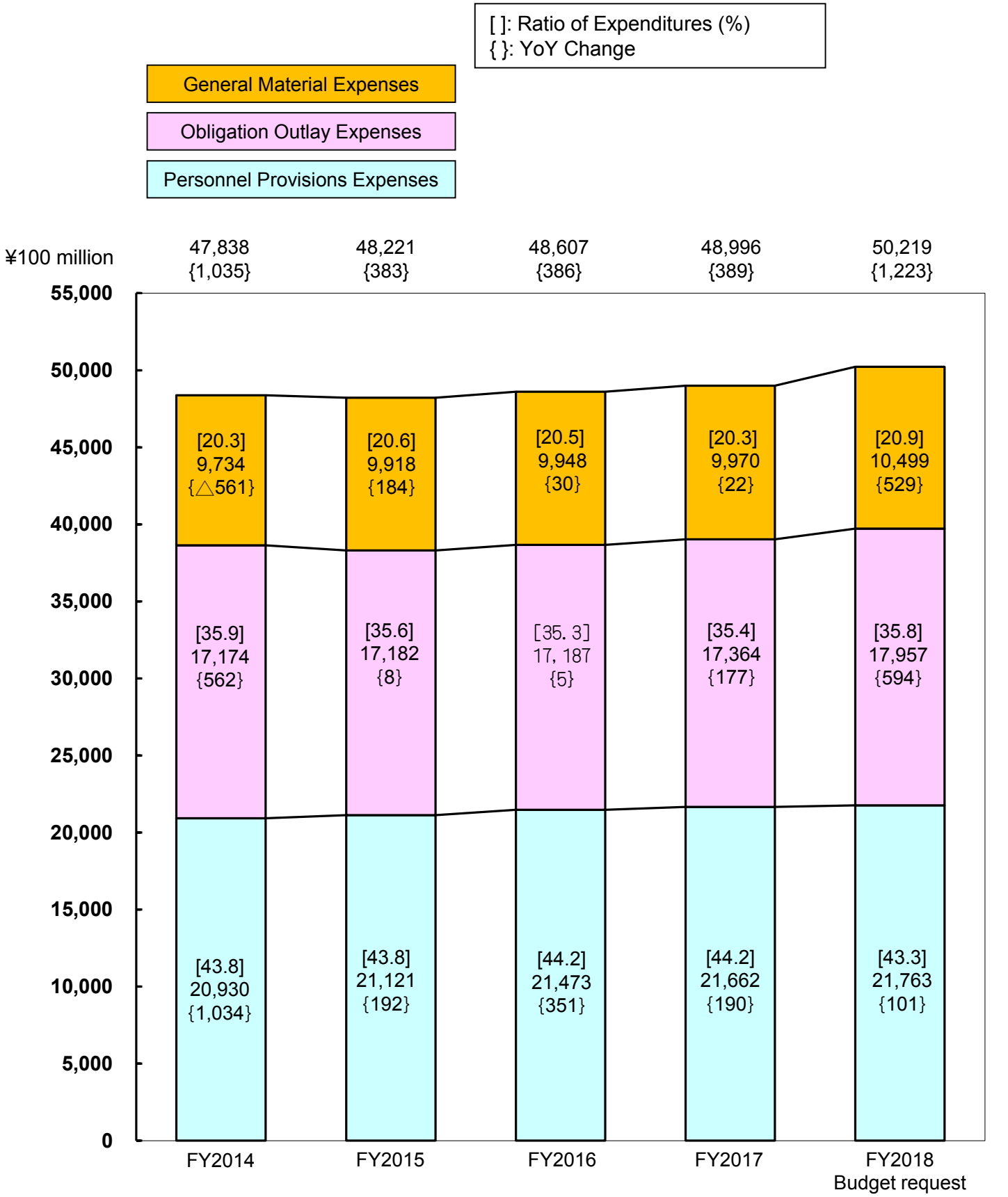


(Unit: ¥100 million)

Item		FY2017	FY2018	YoY Change
Maintenance, etc.		12,154	13,312	1,158
	Petrol	735	939	204
	Repair	9,651	10,475	824
	Education & Training, etc.	1,768	1,898	130
Base Measures, etc.		4,591	4,785	194
Research & Development		1,265	2,002	737
Equipment Acquisition		4,384	5,265	881
Aircraft Acquisition		3,510	3,468	-42
Shipbuilding, etc.		1,232	1,849	618
Facility Improvements, etc.		1,774	1,981	207
Other (computer rentals, etc.)		760	731	-29
Total		29,670	33,394	3,724

Note: The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.

Changes in the three categories



Notes: The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.

Breakdown by organization

(Unit: ¥100 million, %)

Classification	FY2017 Budget	FY2018 Budget Request	YoY Change	Growth Rate
Defense-related expenses	４８，９９６	５０，２１９	１，２２３	２．５
Ministry of Defense	４８，９９６	５０，２１９	１，２２３	２．５
(Ministry of Defense Head Office)	４７，３２５	４８，６０７	１２８２	２．７
GSDF	１７，７０６	１７，７０１	－５	－０．０
MSDF	１１，５４８	１２，２１０	６６２	５．７
ASDF	１１，５７８	１１，８１３	２３５	２．０
Subtotal	４０，８３２	４１，７２３	８９２	２．２
Internal Bureau	４，９６５	５，２４４	２７９	５．６
Joint Staff Office	４０２	４４８	４６	１１．３
Defense Intelligence Headquarters	６９４	７３２	３８	５．４
National Defense Academy	１６１	１５５	－６	－３．９
National Defense Medical College	２３９	２６６	２７	１１．２
National Institute for Defense Studies	２６	２９	３	１１．１
Inspector General's Office of Legal Compliance	６	１０	５	８０．０
Subtotal	６，４９４	６，８８４	３９０	６．０
(Regional Defense Bureaus)	１９８	２０４	７	３．５
(Acquisition, Technology and Logistics Agency)	１，４７３	１，４０８	－６５	－４．４

Note: The figures do not include SACO-related expenses, U.S. Forces realignment-related expenses (the portion allocated for mitigating the impact on local communities) and expenses for the introduction of new government aircraft.

Promotion of base measures, etc.

(Unit: ¥100 million, %)

Classification	FY2017 Budget	FY2018 Budget request	YoY Change	Growth rate	Remarks
Promotion of base measures, etc.	< 4,591 > 4,529	< 4,785 > 4,774	< 194 > 244	< 4.2 > 5.4	
(1) Expenses for countermeasures in Areas near Bases	< 1,245 > 1,220	< 1,402 > 1,372	< 157 > 152	< 12.6 > 12.5	
Residential sound proofing	< 375 > 376	< 494 > 475	< 119 > 99	< 31.6 > 26.3	Subsidies for sound proofing work near air bases
Improvement of living environment of neighboring communities	< 869 > 844	< 908 > 897	< 38 > 53	< 4.4 > 6.3	Subsidies for living environment and facilities (river and road reconstruction, sound proofing systems in schools, improvements to sand control dam and public welfare facilities, etc.)
(2) Cost Sharing for the stationing of USFJ	< 1,962 > 1,946	< 1,984 > 1,975	< 21 > 29	< 1.1 > 1.5	
Special Measures Agreement	1,473	1,495	22	1.5	
Labor cost	1,219	1,253	35	2.9	Labor Cost of USFJ employees
Utilities	247	232	−14	−5.8	Cost of utilities used at USFJ facilities
Training relocation cost	8	9	1	10.9	Expenses related to U.S. field-carrier landing practice on Iwo To
Facilities improvement program	< 222 > 206	< 215 > 206	< −8 > −	< −3.4 > −	Improvement of USFJ facilities (barracks, family housing, etc.)
Measures for USFJ employees	267	274	7	2.7	Expenses related to social insurance premiums by the employer
(3) Rent for Facilities, compensation expenses, etc.	< 1,384 > 1,363	< 1,399 > 1,427	< 16 > 64	< 1.1 > 4.7	Rental cost of land used for defense facilities and compensation for loss of fisher's income, etc.

Note: The above figures are on an expenditure base (General Material Expenses + Obligatory Outlay Expenses), and figures in < > indicate a contract base amount.

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Defense Programs and Budget of Japan

Overview of FY2018 Budget Request

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