National Space Laws of Japan: Today and Tomorrow

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1 Characteristics of the Japanese space activities

1 launch capability: 4th nation launched its own rocket (1970)

currently (i)H-IIA, (ii) H-IIB, (iii) Epsilon, (iv) developing a new rocket to be launched in 2020

2 Unique space policy (until recently)

3 Week in commercialization

R & D focused

Space Policies after 2008 tried to foster commercialization

Major events that characterize Japan's space

1st period: 1955-1975

to be a member of the exclusive space club

2nd period: 1975-1990

to catch up with advanced spacefaring nations

3rd period:1990-2008

behind the trends of commercialization of space

4th period: 2008-

(goal) self-reliance and increasing use of outer space

1955 the first sub-orbital rocket (pencil rocket)

1957-58 Int'l Geophysical Year k-6 rocket

1969 Japan-US space cooperation agreement

1970 Feb. 1970 Japan's first satellite (23.8 kg) was launched by a 100-percent Japan's **λ4S rocket (solid propellant)** **(apogee 310 km perigee 5140 km)**

1975 A liquid-engine rocket (N-I) successfully launched (US technology)

1990 Japan- US Satellite procurement Agreement open bidding required for non-R & D satellites

2008 Basic Space Law

4th nation which launched its own rocket, but a latecomer in commercialization of space

2 Laws enacted and made use of for space activities (1) laws to establish organizations

laws to establish organizations (space policy commission and implementing space agency) enacted:

1 1968-2012 Space Activities Commission (SAC): a body to make a space policy

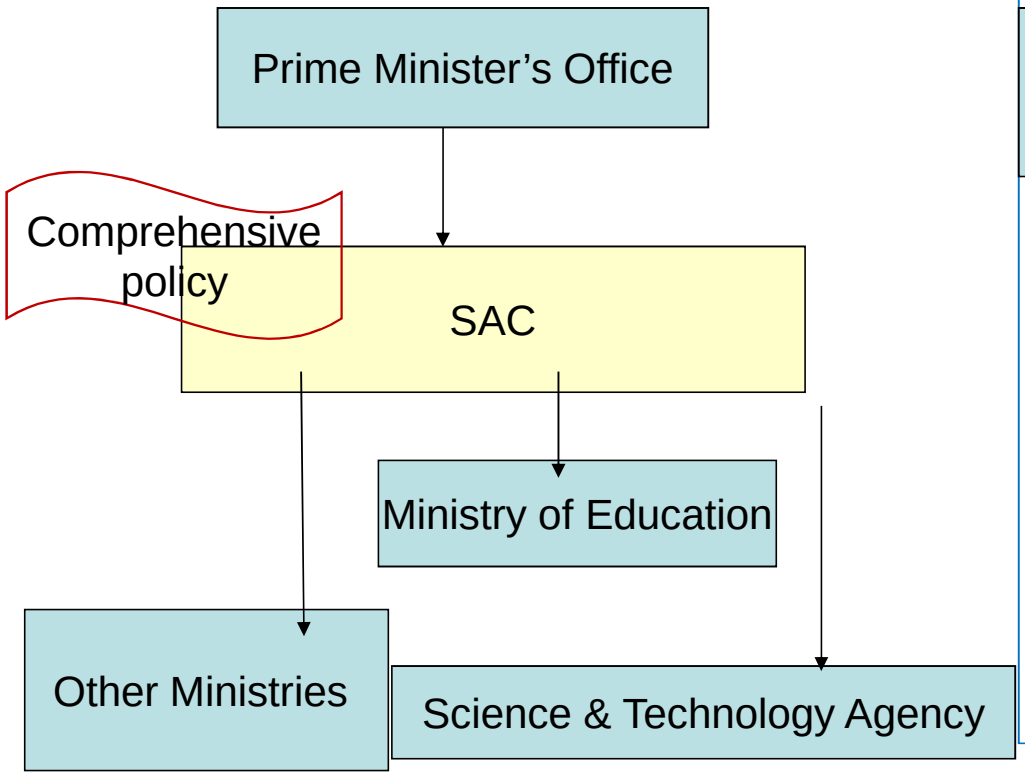
2 1969 National Space Development Agency of Japan (NASDA)

NASDA Law and JAXA LAW provide for TPL and Insurance

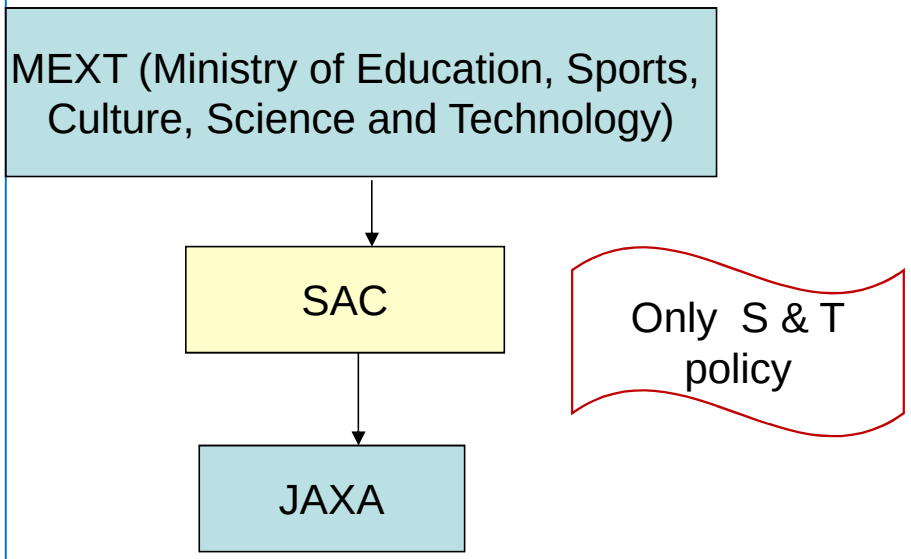
2003 Japan Aerospace Exploration Agency (JAXA) three space-related bodies including NASDA was integrated into one JAXA.

Space Activities Commission (SAC) : body to make Japan's space policy

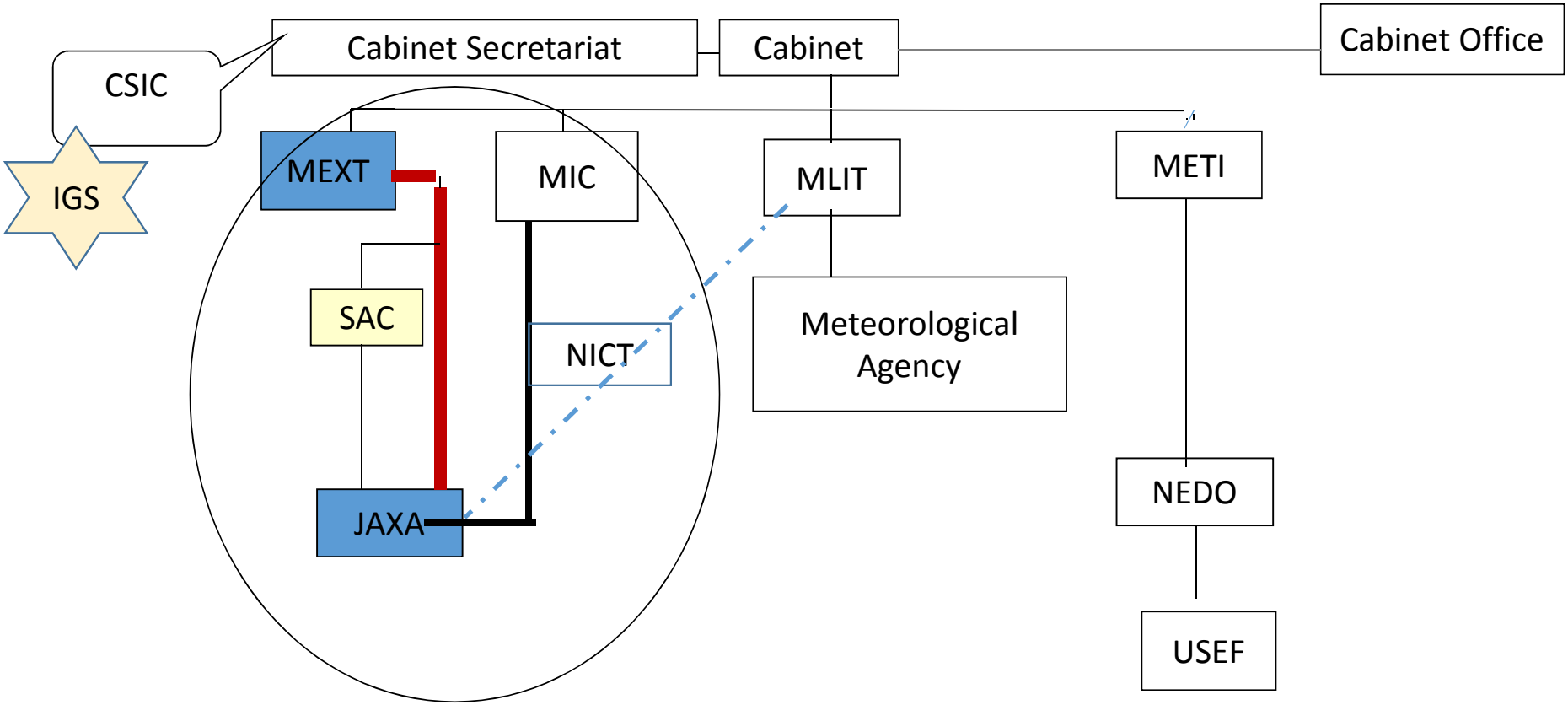
1968 - 5 Jan. 2001



6 Jan. 2001 ～ 12 July 2012



(2) Organizational structures before the 2008 Basic Space Law



MEXT=Ministry of Education, Sports, Culture, Science and Technology; MIC= Ministry of Internal Affairs and Communications;
MLIT=Ministry of Land, Infrastructure, Transport and Tourism; METI= Ministry of Economy, Trade and Industry
CSIC=Cabinet Satellite Intelligence Center; IGS= Information Gathering Satellites

Formal Names of the Agencies

MEXT=Ministry of Education, Sports, Culture, Science and Technology

SAC= Space Activities Commission

JAXA= Japan Space Exploration Agency

MIC= Ministry of Internal Affairs and Communications

MLIT=Ministry of Land, Infrastructure, Transport and Tourism

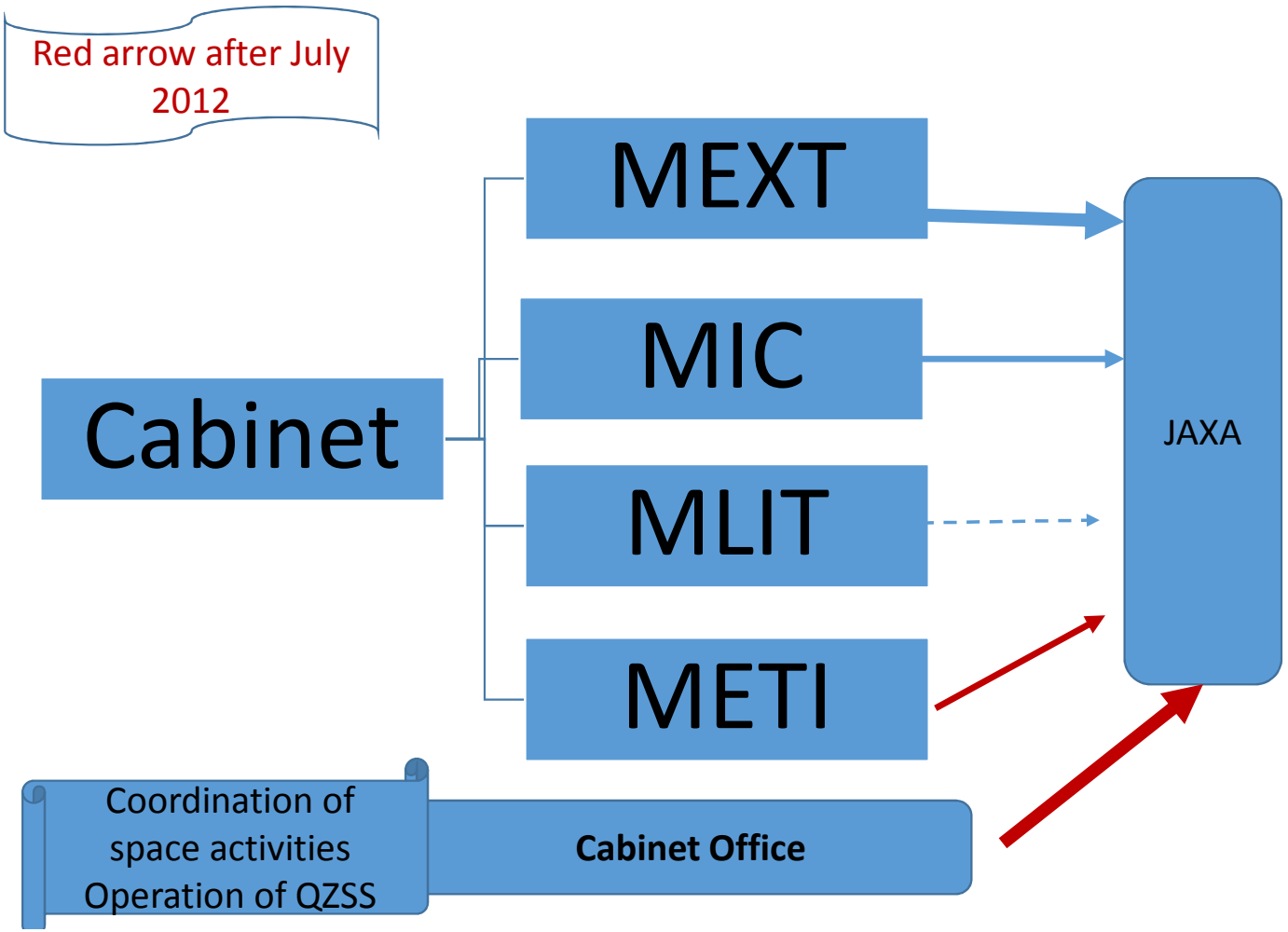
METI= Ministry of Economy, Trade and Industry

NEDO=New Energy and Industrial Technology Development Organization

NICT=National Institute of Information and Communications Technology

USEF= Institute for Unmanned Space Experiment Free Flyer

Government Authorities controlling JAXA: then and now



3 Agencies controlling JAXA

MEXT: R & D

MIC: R & D on only communications satellites

MLIT: R & D on meteorological satellites (legally finished in 2003)

METI: R & D on space technology for economic purposes including the part of the LNG rocket, and the sensors of remote sensing satellites

UN Space Treaties and Japan

A/AC.105/C.2/2014/CRP.7 (20 March 2014)

Signature/ entry into force	Name of the treaty	Number of states parties	Japan's status
1967	Outer Space Treaty (OST)	103	Entry into force 1967
1968	Rescue and Return Agreement	94	Accession 1983
1972	Liability Convention	91	Accession 1983
1975 1976	Registration Convention	60	Accession 1983
1979 1984	Moon Agreement	15	Non signatory

(3) Reasons not to enact the comprehensive national space law when acceding to the 3 treaties in 1983

Special WG was set up in the SAC in 1975 to study if the comprehensive space law had to be enacted before the accession.

1976 The result of the study → No !

Reasons given:

1 rockets owned and operated only by NASDA (special entity under the government) and Institute of Space and Astronautical Science (ISAS) (governmental agency)

2 TT & C solely conducted by NASDA

3 no human space activity planned

All 3 reasons lost as of today

(4) Laws made use of for space activities

In order to operate a satellite:

1949 Foreign Exchange and Foreign Trade Act METI

(export control)

1960 Radio Law MIC

1984 Telecommunications Business Law, etc. MIC

In order to launch a space object:

1950 Gun-Powder Control Law METI

1951 High-Pressured Gas Safety Law METI

1964 Electricity Utility Industry Law METI

(cont'd) TPL provided for in the JAXA Law

Art.21 Obligatory Insurance

1 JAXA shall not launch any satellites without insurance contract to cover TPL.

2 Amounts to be secured by the insurance contract shall be determined by the competent Ministers to control JAXA. <u>20B yen = 200 M US dollars for H-IIA and H-IIB</u>

3 In case of the "Consigned Launch", the consignor may enter into such insurance contract.

H-IIA and H-IIB have been privatized and owned by the MHI

→ JAXA engages in "Consigned Launch"

(cont'd)

Art.22 Special Arrangements relating to Consigned Launch

1 JAXA may enter into a special arrangement with a Consignor upon the authorization of the competent Ministers with respect to its liability for compensation for damage caused by the Consigned Launch to any persons or entities other than the parties related to the Consigned Launch:

- JAXA will assume the entire liabilities of the parties related to the Consigned Launch if JAXA is held liable and those related to the Consigned Launch are also held liable;
- JAXA shall have the right of claiming reimbursement from the parties related if such damage is caused by a willful misconduct.

2 Definition of the "parties related to the Consigned Launch"

3 In case the special arrangement is adopted, insurance contracts shall be entered into by the Consignor on behalf of JAXA.

JAXA Law and other related laws are enough?

1 Launch Safety Review: MEXT-SAC (now "Space Utilization Subcommittee of the Science Committee of MEXT) –JAXA

2 Authorization relating to satellite: competent Ministers (MIC, METI, etc.)

3 Debris mitigation: JAXA Standards: only to JAXA-related launch

4 data policy of JAXA satellites: ALOS data policy; GOSAT data policy, etc. (satellite-specific)

It suffices without the privatization of space

the commercialization and privatization of space started:

1 April 2007 H-IIA rocket transferred from JAXA to the private Mitsubishi Heavy Industries (MHI)

2 August 2008 H-IIA conducted first commercial launching of a domestic private communication satellite, Superbird-7 (owned by JSAT).

3 December 2008 Mitsubishi Electronics made a contract with a foreign company to make a communication satellite

(Latest example is Sept. 2014 Es'hail sat-2 (Qatar))

4 January 2009 MHI announced the conclusion of the contract for the commercial launch of Korean multi-purpose satellite, Kompsat-3. (launched in May 2012).

5 November 2013 First private remote sensing microsat (10 kg) launched.

(5)The first national space law: the Basic Space Law

Promulgated on 28 May 2008; effective since 27 Aug. 2008

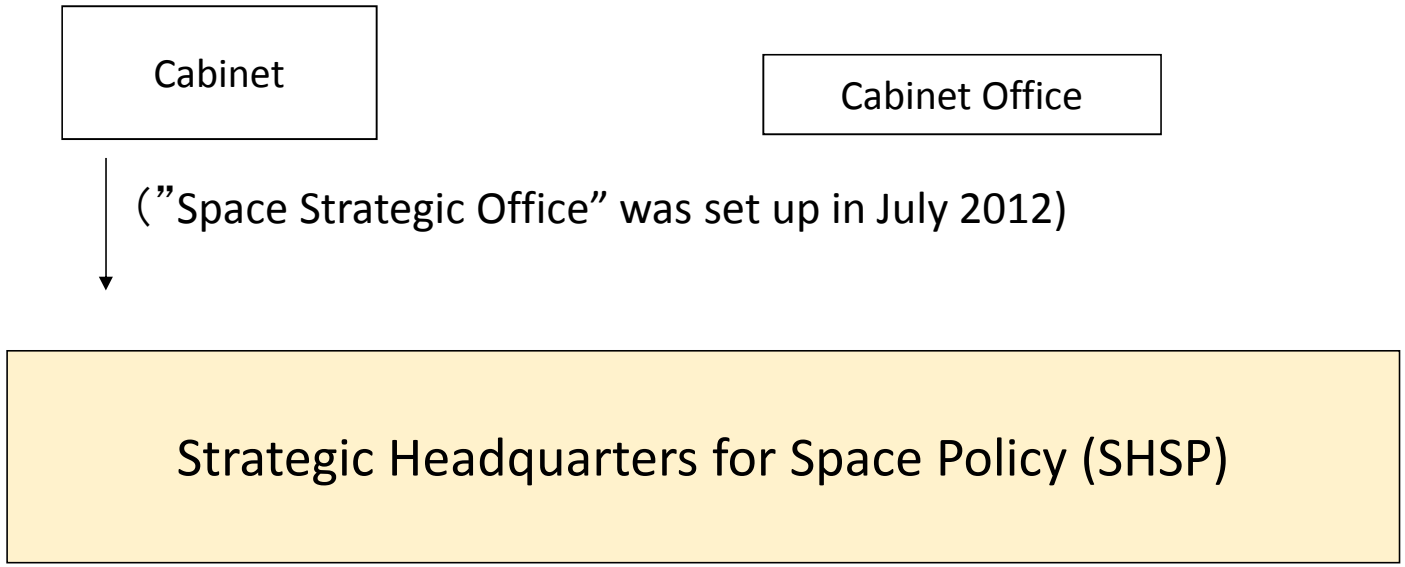
Basic Space Law (BSL) resulted in:

(i) the establishment of Strategic Headquarters → unified policies to all Ministries ;

(ii) the internationally standardized interpretation of the “peaceful purposes”, or the end of the Non-Military Policy; and

(iii) the promotion of the commercialization of space

(i) Restructuring of Space Organizations by BSL



Chairman: Prime Minister

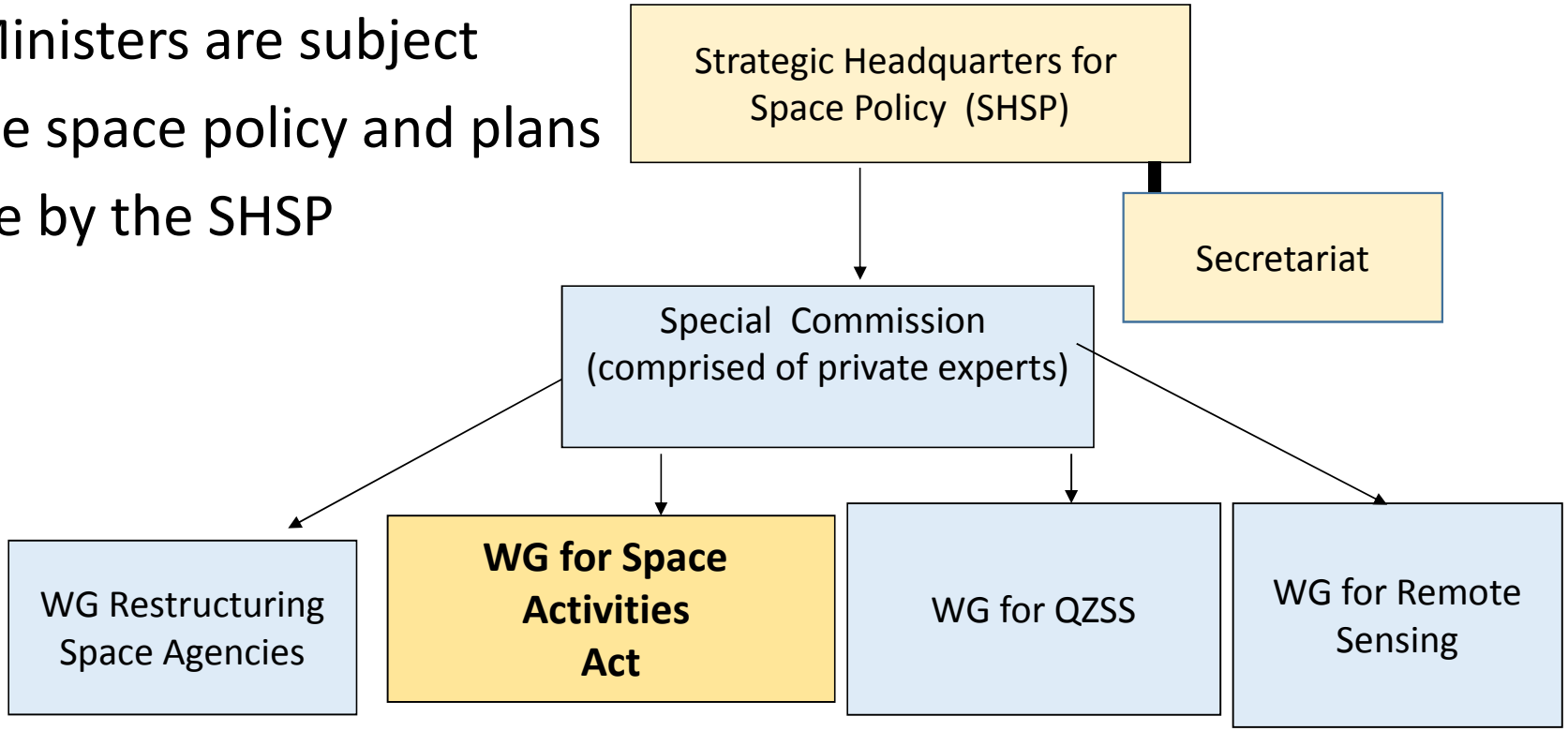
Vice- Chairmen: Cabinet Secretary and

Minister of Space Affairs

Members: all ministers

Structure of SHSP (Aug. 2008- July 2012)

All Ministers are subject to the space policy and plans made by the SHSP



Restructuring of the space policy and organizations based on the decision of the BSL

12 July 2012

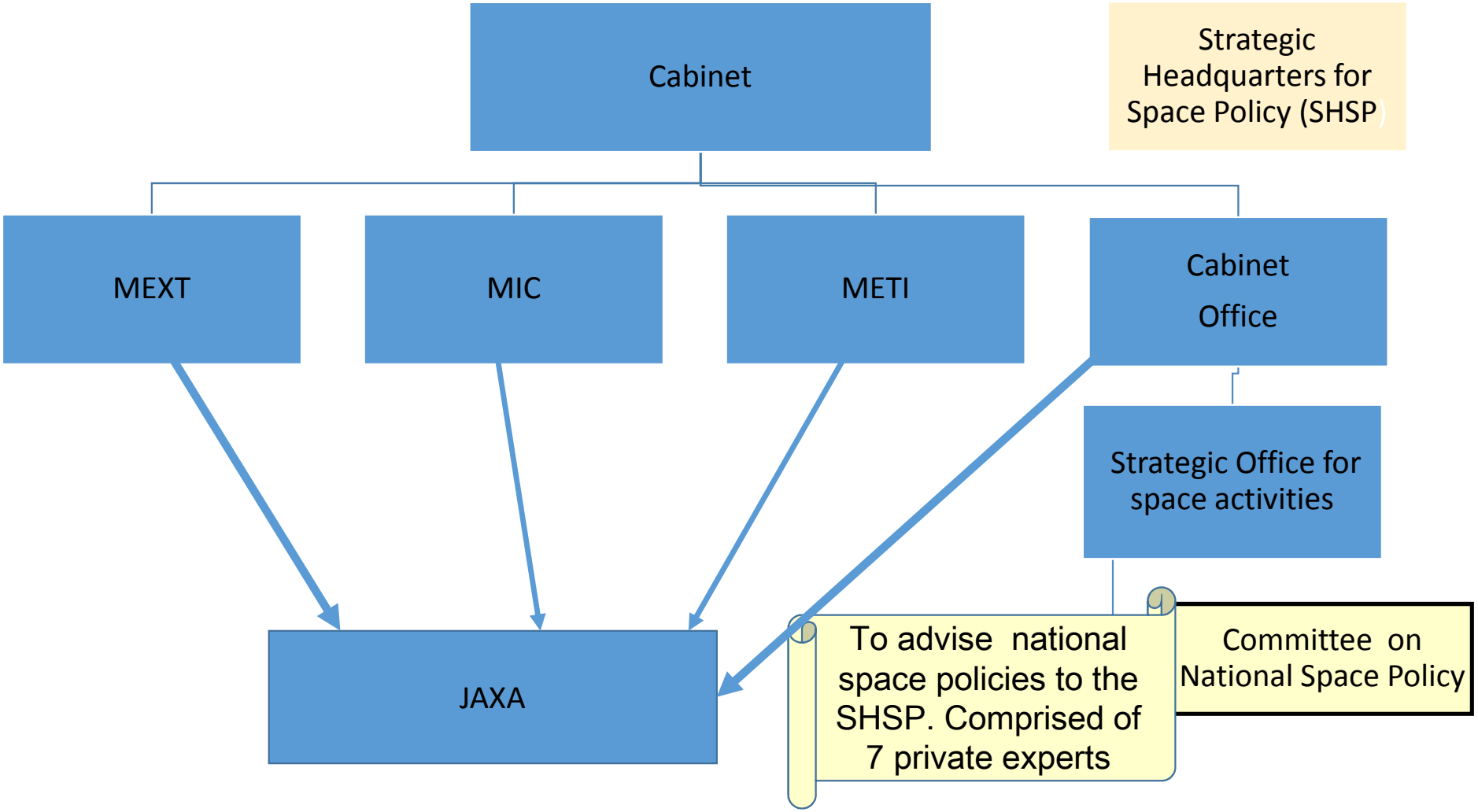
Amendment of the Law concerning the Establishment of the Cabinet Office

* drafting 5-year basic policy on space activities through the committee on national space policy (comprised of 7 private experts)
* coordination of space activities of all ministries
* operation of the Quasi-Zenith Satellite Systems (QZSS)

20 June 2012 Amendment of the JAXA Law

Art. 4 peaceful purposes = non-aggressive cooperation to the Ministry of Defense possible now (R & D of the intelligence satellites)

Organizational structure since July2012
(amendment of the Cabinet Office Law and JAXA Law)



(ii) the adoption of the internationally standardized interpretation of the “peaceful purposes”, or the end of the non-military policy

Art. 2 (peaceful uses of outer space) Space Development and Use shall be carried out in accordance with treaties and other international agreements with regard to Space Development and Use including the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, in accordance with the pacifism of the Constitution of Japan.

Non-aggressive

JAXA Law was amended in accordance with the BSL.

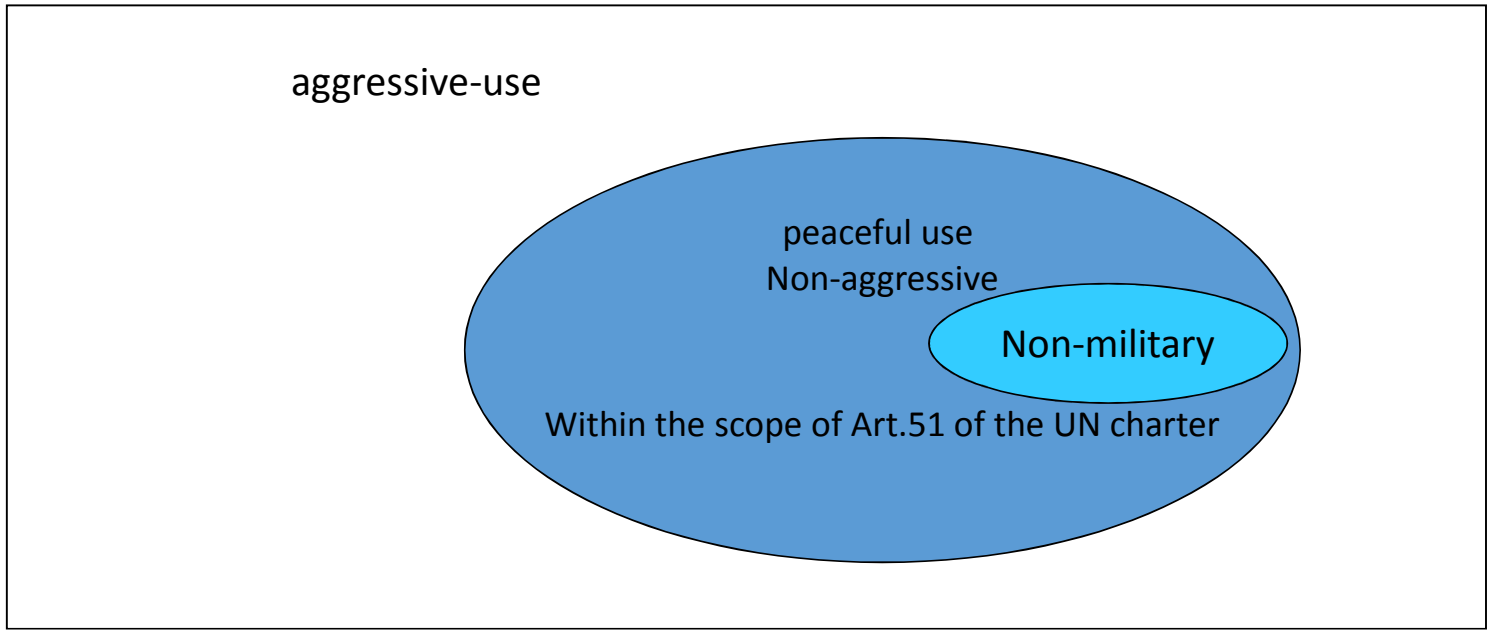
Art. IV of the Outer Space Treaty (1967)

States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.

The Moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, testing of any type of weapons and the conduct of military manoeuvres on celestial bodies shall be forbidden.----

Non-Military v. Non-Aggressive

two interpretation of “peaceful purposes” and “peaceful use(s) of outer space”

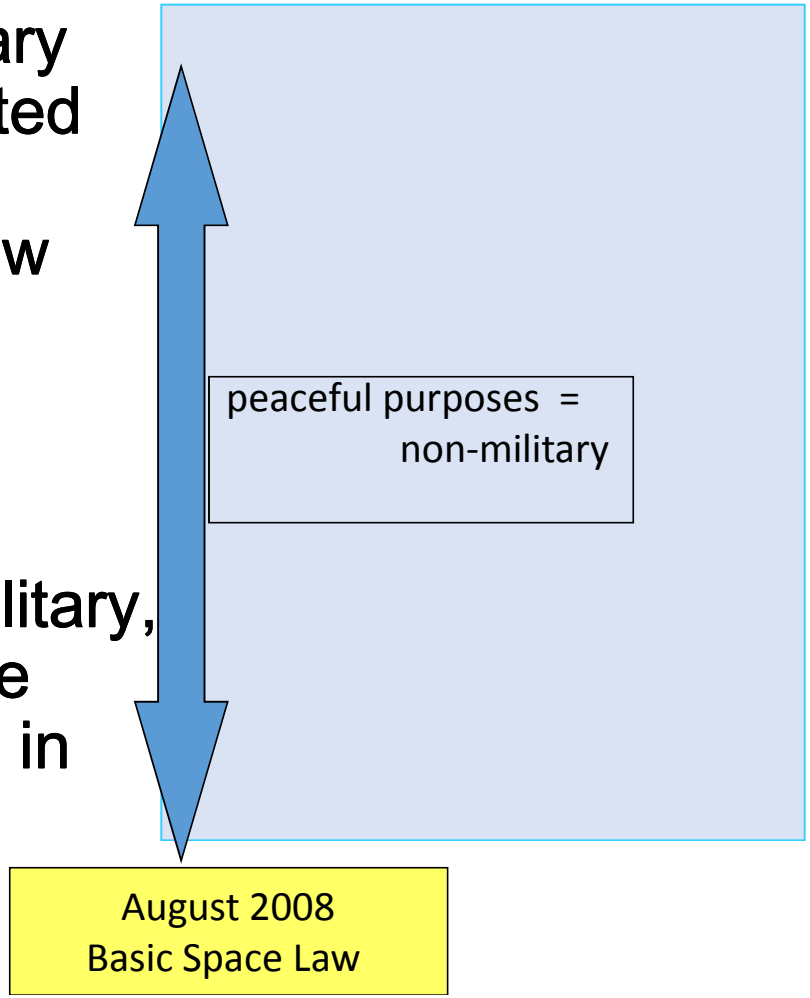


Japan's Long Standing Space Policy

1 1969 Diet Resolution Non-military Use Principle unanimously adopted

2 1985 Unified Governmental View

3 1998 Development of Information Gathering Satellite (IGS) Decided in order to make it within non-military, the resolution shall not exceed the best resolution can be purchased in the markets.



(iii) Promotion of the commercialization of space as a governmental obligation

Art. 16 (Promotion of the commercialization)

The obligations of the State:

*to procure systematically goods and services of private business operators

*to maintain launching sites and other facilities

*to transfer of the results of R & D to the private sector and promote private space development

* to take necessary taxational and financial measures to promote commercialization of space

Art.35 to enact Space Activities Act

(1) The Government shall carry out the enactment of legislation on necessary matters.

(2) The enactment of legislation shall be carried out:

(i) to advance national interests of Japan in international society; and

(ii) to contribute to the promotion of space activities by the private sector.

Art.35 Enactment of Legislation with regard to Space Development (complete provisions)

(1) The Government shall carry out the enactment of legislation on necessary matters comprehensively, systematically and promptly, in order to implement treaties with regard to regulations on space activities as well as other Space Development and Use, and other international agreements.

(2) The enactment of legislation prescribed in the preceding paragraph shall be carried out in order to advance the national interests of Japan in international society and to contribute to the promotion of Space Development and Use by the private sector.

(5) Space Activities Act (SAA) in the making

WG for SAA met 6 times Oct. 2008- Aug.2009 →Interim Report adopted →Public Comments (3 weeks) →coordination in the WG

March 2009 Final Report released in the Internet →Bill not submitted to the Diet.

Sept. 2009 Historic change of the government →political turbulences and earthquake/tsunami in March 2011 made it impossible to make a space law

Sept. 2014 SHSP entrusted the committee on national space policy to draft a new and the 3rd Basic plan on space activities to be adopted in Dec. 2014.

Final draft (now under the public comments) contains the SAA to be made into law (in 2016 at the earliest).

3 National regulatory frameworks explained in accordance with the eight elements in GA Res 68/74 (recommendations on national legislation)

8 Elements

*Scope of space activities

*National jurisdiction

*Authorization by a competent national procedures

*Conditions for authorization

*Continuing supervision

*National registration

*Recourse/ Third Party Liability

*New elements such as the transfer of ownership or control of a space object,

Purposes of the SAA

(i) implement Art. VI of the OST;

(ii) ensure the public health and safety;

(iii) guarantee Third Party Liability (TPL);

(iv) promote private space activities

(v) play an active role in fulfilling international responsibility for the sustainable development of space.

(1) Scope of Space Activities

Activities required for authorization/license

(i) Launch;

(ii) Procurement of a Foreign launch;

(iii) Reentry;

(iv) Satellite Operation; and

(v) Launch & Reentry Site Operation

While it is not specified in the final report (2009), it seems that the in-orbit transfer of ownership/control of satellites will be required prior authorization.

(2) National jurisdiction

Who shall apply for the Authorization/Licenses

Cabinet Office seems to be the Ministry to issue a license

(i) In the territory of Japan*:* all natural persons, corporations, governmental agencies and other legal bodies

(ii) Irrespective of the places: natural persons with Japanese nationality, corporations and other legal bodies founded by Japanese law, as well as Japanese governmental agencies

(3) Criteria of Authorization (A)

Launch, Reentry and Foreign Procurement

(1) Technological & financial capability
(2) Observance with International law and foreign policy
(3) Safety review
(4) Debris mitigation requirements

Some steps may be exempted if appropriate review had been conducted by a foreign authority.

(3) Criteria of Authorization (B)
Satellite Operation

(1) Technological & financial capability

(2) Observance with International law and foreign policy

(3) Debris mitigation requirements

(3) Criteria of Authorization (c)
Launch & Reentry Site Operation

(1) Technological & financial capability

(2) Observance with International law and foreign policy

(3) Safety review

Conditions to obtain authorization (summary)

	Technical & financial capability	Observance with int'l law and foreign policy	Safety review	Space debris mitigation requirements
Launch, reentry and foreign procurement	○	○	○	○
Satellite operation	○	○	Not required	○
Launch & reentry site operation	○	○	○	Not required

(4) Third Party Liability (TPL)

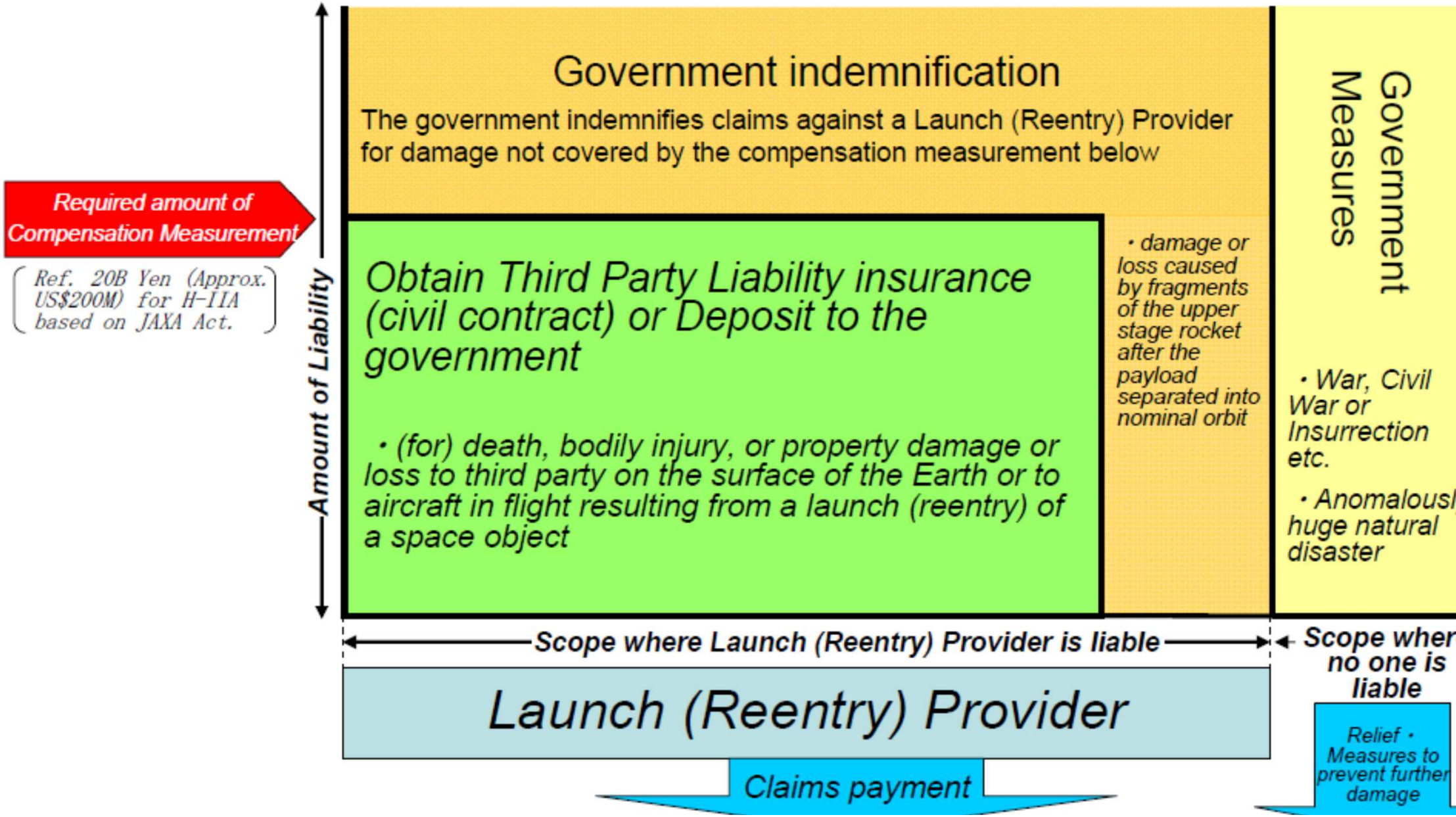
1 Exclusive liability for launch and reentry providers

* TPL insurance

*government indemnification concerning the damage not covered by the TPL insurance

2 strict liability damage on the Earth

3 Fault liability damage in outer space


Required amount of Compensation Measurement
Ref. 20B Yen (Approx. US$200M) for H-IIA based on JAXA Act.
Amount of Liability
Government indemnification
The government indemnifies claims against a Launch (Reentry) Provider for damage not covered by the compensation measurement below
Obtain Third Party Liability insurance (civil contract) or Deposit to the government
・(for) death, bodily injury, or property damage or loss to third party on the surface of the Earth or to aircraft in flight resulting from a launch (reentry) of a space object
・damage or loss caused by fragments of the upper stage rocket after the payload separated into nominal orbit
Government Measures
・War, Civil War or Insurrection etc.
・Anomalousl huge natural disaster
Scope where Launch (Reentry) Provider is liable
Scope wher no one is liable
Launch (Reentry) Provider
Claims payment
Relief・Measures to prevent further damage

(5) Elements may be included and may not be included (future tasks)

Elements may be included:

* remote sensing data policy

Data policy may be made into a different law (and even before the SAA)

Elements not to be included

* human space flight;

* sea launch, air launch;

* promotion of space industry

(the possibility of another law in the future; or space policy)

4 Concluding remarks

Dec. 2014 New Basic Plan for Space Activities to be approved by the SHSD. → drafting a SSA→Jan. 2016 table to the Diet → to be made into law in June 2014 (at the earliest)?

It is likely that some (at least) minor changes will be made, but one thing is certain---

Japan's SSA will be made in accordance with the recommendations reflected in the GA Res.68/74 (national legislation)