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National Regulatory and Policy Frameworks relating to the Peaceful Uses of Outer Space: Japan

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1 Brief History of Japanese Space Activities and Law (1)

I 1955-1975 To enter into an exclusive space club

1955 pencil rocket
1969 Japan-US Exchange of Notes on Space Cooperation
1970 first satellite launched by a solid propellant rocket (100 % domestic rocket)
1975 N-I rocket (liquid engine with the help of the US technology) a real starting point

II 1975-1990 To endeavor to catch up with advanced spacefaring states

1 1975 & 1980 Japan-US Exchange of Notes on Space Cooperation
→ N-II (1982), H-I (1986) rocket

2 telecommunication and broadcasting GEO satellites, remote sensing satellite

3 1990 Japan-US Satellite Procurement Agreement

Brief History (2)

III 1990-2008 **A spacefaring state without commercialization**

Focus on R &D → The necessity of the commercialization, application, and privatization was recognized at around 2003-2004 →MPs to make a law for that purpose

IV 2008-

June 2009 Basic Plan for Space Policy

May 2010 Important Measures in the Space Policy

Currently Making of a Space Activities Act

Already some privatization and commercialization in progress

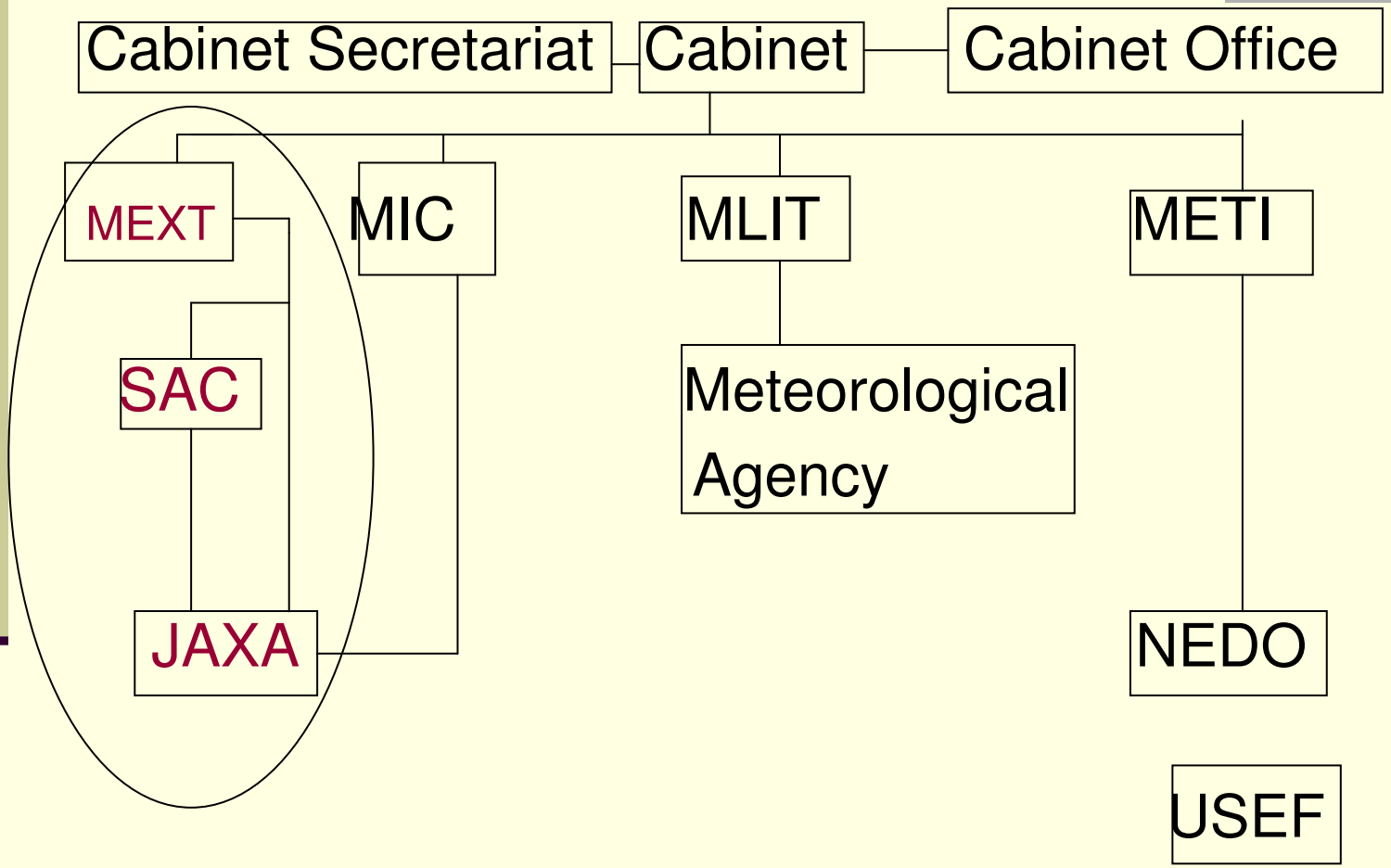
1 April 2007 H-IIA rocket transferred from Japan Aerospace Exploration Agency (JAXA) to the private Mitsubishi Heavy Industries (MHI)

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

4 January 2009 MHI announced the conclusion of the contract for the commercial launch of Korean multi-purpose satellite, Kompsat-3.

Space Management Structure Prior to Basic Space Law



(reference) names of ministries

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

2 Japan's First Space Law: Basic Space Law of 2008 drafting process

Nov. 2004 Restructuring of Japan's space policy and making a law for that purpose was contemplated by some MPs in the Liberal Democratic Party (LDP).

20 June 2007 Basic Space Bill (Bill. No.50) of the Coalition Parties submitted to the Lower House.

9 May 2008 New bipartisan bill (Bill No.17) submitted to the Lower House

14 May New bill passed at the Lower House and submitted to the Upper House.

21 May New bill passed at the Upper House and Basic Space Law became a full-fledged law.

27 August Basic Space Law entered into force.

Contents of Basic Space Law (1)

Chapter I General Provisions (Arts.1-12)

Chapter II Basic Measures (Arts.13-23)

Chapter III Basic Space Plan (Art.24)

Chapter IV Strategic Headquarter for Space Policy (Arts.25-34)

Chapter V Enactment of Further National Legislation (Art.35)

＋

Supplementary Provisions (4 Articles) (miscellaneous procedural provisions)

Chapter I General Provisions

Art.1 Purpose

Art. 2 to Art. 7 Basic Principles

Art.2 Peaceful uses of outer space

Art.3 Improvement of the lives of citizenry

Art.4 Advancement of industries

Art.5 Development of human society (space science)

Art. 6 International cooperation

Art. 7 Consideration for the environment (space debris mitigation and the Earth environmental protection)

(continued)

Art.8 Responsibilities of the State to implement basic principles

Art.9 Obligations of the local government

Art.10 Strengthening of the coordination between the State, the local governments, universities and the business operators)

Art.11 Legislative measures, etc. as a governmental responsibilities

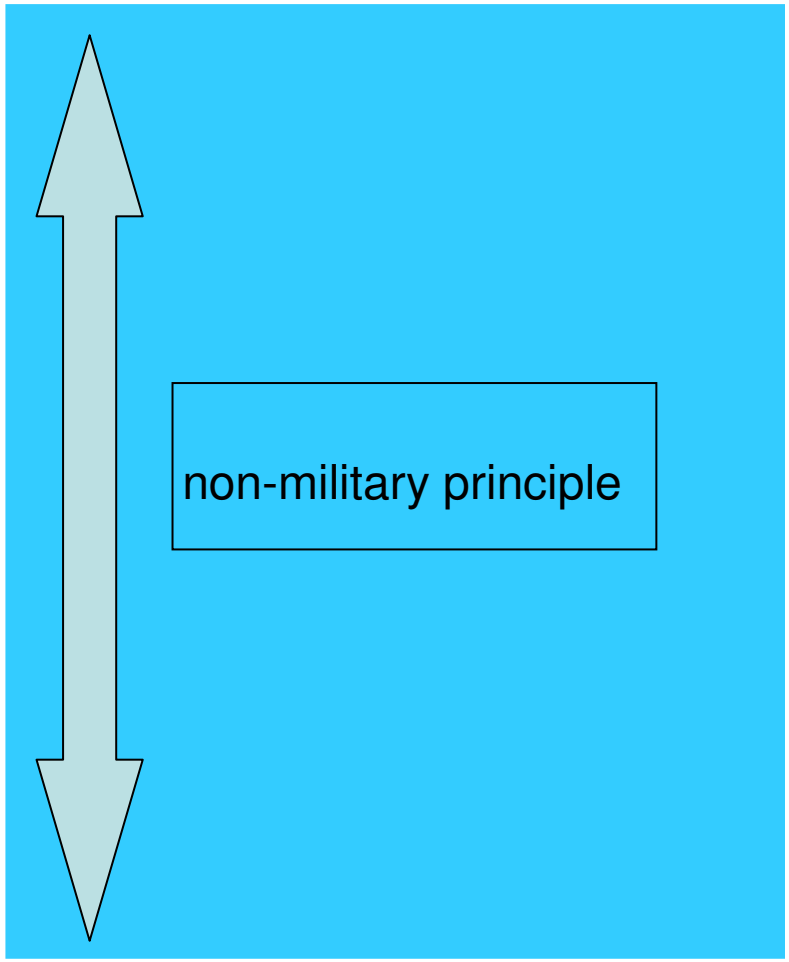
Art.12 Restructuring of the space agencies

Japan's Long Standing Space Policy Prior to Basic Space Law

1 1969 Diet Resolution Non-military Use Principle unanimously adopted (when National Space Development Agency of Japan (NASDA) Act was drafted)

2 1985 Unified Governmental View

3 1998 Development of Information Gathering Satellite (IGS) Decided



Art. 2 (Peaceful Uses of Outer Space)

change of the interpretation from non-military to non-aggressive

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.

Scope of Japan's space activities =
non-aggressive use – the limitation of Constitution of Japan

Chapter II to Chapter V

Chapter II stipulates concrete measures to implement basic principles.

Chapter III Basic Plan for Space Policy next 5 years plan

Chapter IV mandates of Strategic Headquarters for Space Policy (SHSP)

Chapter V requires to make another space law for promoting commercialization, etc.

Restructuring of Space Organizations by Basic Space Law

Cabinet

Cabinet Office

("Space Office" was supposed to be set up within 1 year of the entry into force of the Basic Space Law, but not yet realized as of Nov. 2010)

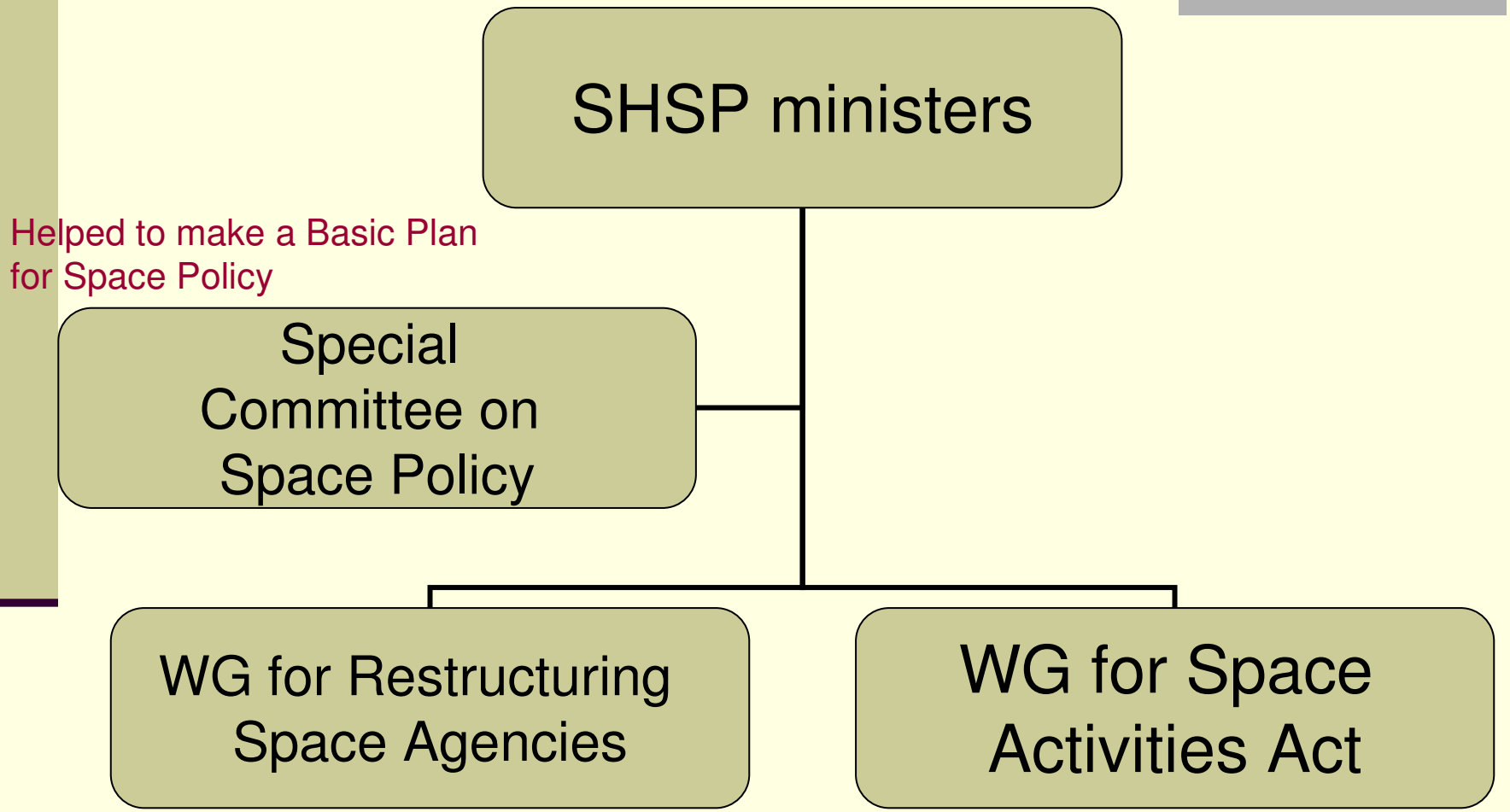
Strategic Headquarters for Space Policy (SHSP)

Chairman: Prime Minister

Vice- Chairmen: Cabinet Secretary & Minister for Space

Members: all Ministers

Structure of Strategic Headquarters



3 Basic Policy for Space Plan released on 2 June 2009

5 year plan considering the next 10 year's development

6 targets= similar to 6 Basic Principles of Basic Space Law

1 Safe, secure and affluent society

2 Strengthened Security

3 Space Diplomacy

4 Bright Future by the State-of-the-Art R & D

5 Nurturing Space Industry

6 Environment Protection (on the Earth and in space)

9 systems and programs

5 satellite utilization systems

A Land and Ocean Observation Satellite System to contribute to Asia and other regions

B Earth Environment Observation & Meteorological Satellite System

C Advanced Information and Telecommunications Satellite System

D Navigation Satellite System

E Satellite System for Security Purposes

4 R & D programs

F Space Science Program

G Human Space Activity Program

H Solar Power Satellite System R & D Program

I Small Demonstration Satellite Program

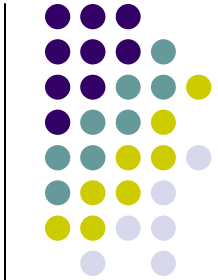
E. Satellites System for Security Purposes (security program most modest)

①5 year goal: 4 Information Gathering Satellites (IGS) constellation (2 optical, 2 radar)

②10 year goal: the research of the early-warning sensor of dual use, which can be also used for detecting forest fire. Not even R & D, but just research of the sensor.

③ Focus placed on the "dual use" and "spin-on."

G Human Space Activity Program: a program released a year later



1 Human activity through the extended International Space Station

2 How about the manned Lunar exploration? Studied in 2009 by a special expert meetings under SHSP

30 July 2010 Report of Lunar Exploration Strategy released by SHSP

Goal: 2020 Unmanned exploration post to be established on the south pole region of the Moon.

1 Observation Equipments to work for more than 1 year.

2 Robots to explore for several months and to obtain unknown samples to return to the Earth.

3 Basic R & D on the key technology to manufacture manned reusable space vehicles.

Latest Space Policy released in May in 2010

Sept. 2009, Historic Change of the government LDP
→Democratic Party of Japan (DPJ)

23 Feb. 2010 Minister for Space made a new Expert Commission to Study a Future Space Policy (Special Committee set up in Sept. 2008 still exists.) → 7 intensive meetings.

25 May 2010 “Important Measures in Space Activities: Strategic Space Policy to Promote Japan’s Growth”

3 pillars of the Important Measures

1 Creating a market to induce space uses into the growth of Japan

2 Expanding international cooperation and promoting space business

3 Strengthening the state-of-the-art Science and Technology as an innovation engine

More emphasis on space business than Basic Plan for Space Policy

“Important Measures” (1)

1 Creating a world best market community: inducing space uses into the growth of Japan

(1) reflecting users demands and nurture competitiveness

A small satellites and small rockets

B the promotion of satellites and sensors to be made in a series

C the construction of a real-time earth observation satellites network

D the construction of a platform to promote the utilization of satellite data

“Important Measures” (2)

(2) Establishment of the appropriate environment for space use including making national legislation

A national legislation to decrease the risk of private space activities

B use of the system to expand the stakeholders

C establishment of the facilities and installations to promote data use aiming at the world top-level results

Important Measures (3)

2 Expanding international cooperation and promoting space business

(1) the promotion of space diplomacy

(2) promotion of the foreign sales of the space assets

Important Measures (4)

3 Strengthening the state-of-the-art S & T as an innovation engine

(1) fundamental technology for the independent space capability
(2) contribution to the green innovation (satellite use as "environmental guard")
(3) space S & T
(4) agenda to be tackled by the international society

(2) contribution to the green innovation (satellite use as “environmental guard”)

“The New Growth Strategy” declares that Japan become an environment and energy power through “green innovation”, a developing field on which Japan has an edge. Spreading renewable energy is one of the “green innovation” measures, and to better contribute to the international society and to be a global leader in the field of the global warming countermeasures, Japan shall verify the effect of the renewal energy in countering global warming on a global level.

4 Space Activities Act

drafting process

WG for Space Activities Act met 6 times from Oct. 2008 to. Aug. 2009 →Interim Report adopted →Public Comments (3 weeks) →coordination in the WG.

March 2009 Final Report was released in the Internet.

However, a bill was not yet submitted to the Diet due to the political turbulence.

Art.35 of Basic Space Law
Enactment of Legislation

(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.

Art. 16 of Basic Space Law
Promotion of Industry

The obligation of the State includes:

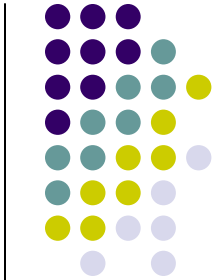
*to procure systematically goods and services of private business operators →anchor tenancy

*to maintain and launching sites and other facilities

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

* to take necessary taxational and financial measures as well as other necessary measures in order to facilitate investment by private operators.

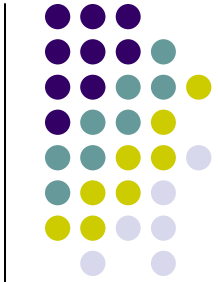
Purposes of the Space Activities Act



1 Implementation of UN Space Treaties
2 Ensuring Third Party Liability (TPL) for protecting victims
3 Licensing systems for promoting commercialization
4 Ensure that space activities meet national and international interests

Scope of Authorization

5 kinds of Authorization



(1) Launch

(2) Procurement of a foreign launch

(3) Reentry

(4) Satellite Operation

Control of the position and posture of a satellite ("station keeping"); and

Control of the temperature and pressure within a satellite to maintain the normal function ("house-keeping")

System management is the scope for the license application, but not the mission management such as the Remote Sensing

(5) Launch & reentry site operation

Who should apply for the Authorization?

In the territory of Japan:

All natural persons, legal persons and governmental agencies.

Irrespective of the places:

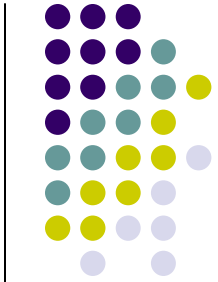
Japanese nationals, natural and legal, as well as Japanese governmental agencies.

Ministry for Authorization and Continuing Supervision

It is not yet decided in the Final Report.

Another WG for restructuring of space agencies suggested Cabinet Office as the appropriate authority for authorization and continuing supervision.

Third Party Liability (TPL)



Concerning the foreign damage on the surface of the Earth or to aircraft in flight:

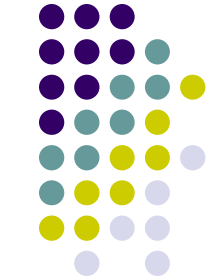
1 Exclusive Liability incurred to the Launch and reentry providers.

2 Strict liability

3 The government will decide the mandatory amount of the TPL insurance

4 The government will indemnify the amounts not covered by the TPL insurance.

Conditions to Grant Authorization



1 Launch authorization and 2 Reentry authorization

(1)Policy review

* consistency with national and international peace and security

* consistency with international agreements

(2)Technological review

(3)Financial review

(4)Safety review

Launch vehicle, payload, launch facilities, launch plan, etc.

(5) Space debris mitigation requirements

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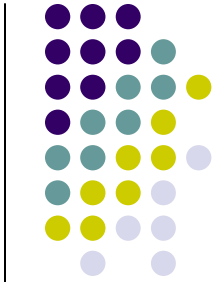


Procurement of a foreign launch

(1)Policy review

(2)Technological review

(3) Financial review

(4)Safety review

(5)Space debris mitigation requirements

A part of requirements are either exempted or alleviated where appropriate review is conducted by the competent foreign authority.

(continued)

Satellite operation authorization

(1)Policy review

(2)Technological review

(3)Financial review

(4)Space debris mitigation requirements

Launch & reentry site operation authorization

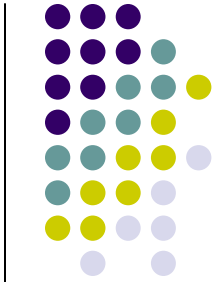
(1)Policy review

(2)Technological review

(3) Financial review

(4) Safety review

Matters Required Further Consideration (1)



（1）promotion of commercialization

①to make a law where adequate for legislation

a candidate: Space Industry Promotion Act

②to make a policy where not suitable for legislation

(i) Promotion of space equipment industry

(ii) Nurture international competitiveness

(iii) Capacity building of small companies, ventures and universities to enter space industry

(continued)

(2) Data policy of the remote sensing satellites

① standardization for the user-friendly data and information

② data control for security purposes

(3) Space tourism

(4) Air-launch

Conclusion

1 Basic Space Law of 2008 is a starting point to legislate further necessary laws including Space Activities Act.

2 Future Space Activities Act is in line with precedent national space laws with a Japanese touch. Authorization mechanism of procurement of a foreign launch shows the possibility of a future harmonization of national laws.

(continued)

3 Space debris mitigation measures, which Japan is already implementing all the international standards and requirements, will be further advanced by the Space Activities Act.

4 Latest developments of the registration of space objects would also be guaranteed by the Space Activities Act.

5 Unstable domestic political situation is the major obstacle for making Space Activities Act as well as stable application of Basic Plan for Space Policy and “Important Measures in Space Activities.”