Japanese Aerospace Industries’ Requests to the Government

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1. Outline of the Basic Space Law

- On 21 May 2008, the Basic Space Law was enacted.
- 3 main pillars of the Basic Space Law
  1. Reinforcing Japan’s security by using of space
  2. Promoting space-research and development
  3. Developing Japan’s space Industries

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1. Outline of the Basic Space Law

Chapter 1: Fundamental Principles Regarding Space Development

Article 2: The development and use of outer space shall be carried out in accordance with international law, including the OST, based on the pacifist spirit of the Constitution of Japan.

Article 3: The development and use of space shall contribute to improvement of people's lives, safe and secure society, removal of various threats to human lives, international peace and safety, national security of our country.

Article 4: The space-related industries shall gain international competitiveness and technological capabilities, through swift commercialization of outcomes of space-related R&D, and through proactive and well-planned promotion of space development.

Article 5: (Progress of human society)

Article 6: (International cooperation)

Article 7: (Consideration for environment)
1. Outline of the Basic Space Law

Chapter 2: Primary Responsibilities of Government in Space Development

Article 13: For improving people's lives etc., take necessary measures to improve satellite-based communication network, observation system, navigation system etc.

Article 14: For promoting both national and international security, take necessary measures to promote space development and use etc.

Article 15: For having self-reliant capability of developing, launching, tracking and operation of satellite, take necessary measures to promote R&D of equipments (including components) and technologies, to improve facilities and institutions, to secure available frequencies, etc.
1. Outline of the Basic Space Law

Chapter 2: Primary Responsibilities of Government in Space Development

Article 16: For strengthening space industry’s international competitiveness and technological capabilities, etc., take necessary measures to consider use of private business capacity and well-planned procurement of goods and services; to improve launch range, laboratory etc.; to promote transfer of R&D outcome to private business; and to ease private investment in terms of tax and finance, etc.

Article 17: (fundamental researches and R&D of basic technologies)

Article 18: (space exploration and space science)

Article 19: For playing active role and increasing national interest in international community, take necessary measures to promote international cooperation for R&D, technical joint efforts, etc.

Article 20: ···development in harmony with environment, ··· international cooperation for conservation of space environment.
1. Outline of the Basic Space Law

Chapter 3 : Mapping out a Basic Space Plan

Article 24 : Headquarters for Space Development and Strategy shall map out a basic space plan which includes basic policy, measures to be implemented with their aims and timeframes.

Chapter 4 : Establishment of Headquarters for Space Development and Strategy

Article 25~34 : Headquarters for Space Development and Strategy shall be established under the Cabinet, with the Prime Minister serving as its Director-General.

Supplementary Provision

Article 3 : One year after enforcement of this law as a goal, Japan Aerospace Exploration Agency (JAXA) and other space agencies shall be reviewed regarding their purposes, functions, scope of works, organizational structures, competent authorities, etc.
2. Issue of the Competitiveness

Circumstances about Japanese space industry

- The annual sales of the space system industry has been low for years, while that of the space service industry has been increasing gradually.
- Japanese satellite communication service providers have done their business using non-domestic satellites.
- Since the 1990 Japan-US Satellite Procurement Agreement, Japanese satellite industry has lost Japanese operational satellites market in fact.
- Since then, JAXA(NASDA) has only developed satellites for scientific research and technology development only.
2. Issue of the Competitiveness

Requests to strengthen the competitiveness

- To draw up a comprehensive R&D strategy to strengthen the competitiveness of Japanese space industry.
- To promote R&D with the aims of cost and term, and in consideration of the outcome transfer to private sector for commercialization.
- To promote R&D implementing not only technology demonstration but also operational demonstration for commercialization.
- To promote series production of satellite bus etc. for cost reduction, reliability improvement and operational know-how accumulation.
- To promote “differentiated products projects” using Japanese good technologies such as down-sizing technologies, micro-electronics, MEMS, robotics, etc.
- To improve the infrastructure for supplying space parts. (see 5.)
- To expand the availability of launching: to increase launching way and launching place, to extend launching timeframe, etc.
3. Issue of the Use of Space

Circumstances in Japan

- There has been no military satellite market, due to “non-military use” policy since 1969.
- Remote-sensing data provider are using mainly non-domestic satellite data.
- Satellite navigation by US-GPS system is used widely.
- MTSAT data are used in our daily life.

Requests to expand the use

- To promote R&D of MOD satellite systems: communication, reconnaissance, etc.
- To promote R&D of high-performance and operational remote-sensing satellite system.
- To promote R&D of operational quasi-zenith navigation satellite system, to secure the self-reliance to the navigation.
- To continue meteorological satellite series for our lives and national security.
- To expand the usage of the operational satellite systems and to take the role of the anchor-tenancy.
4. Issue of the International Cooperation

Requests to promote the international cooperation

- To support the space activities of Asia-Pacific countries by providing Japanese satellite systems and components: quasi-zenith navigation system, earth observation system, communication system etc.

- To cooperate internationally in the field of safety and security, and others: disaster prevention, earthquakes, tsunamis, floods, fires, telemedicine, education, mapping, etc.

- To cooperate internationally in the field of scientific research: earth observation, environmental monitoring, etc.
5. Issue of Supplying Space Parts

Circumstances about space parts procurement in Japan

- Domestic parts
  - Parts manufactures have been placed in hard business environment.
  - To semiconductor manufactures, space industry has become niche market and little attractive.
  → Diminishing parts manufactures and JAXA QPL items. (see next page).

- Imported parts
  - Increasing dependence on imported parts mainly from USA.
  - Hard to procure advanced high performance ICs due to ITAR.
  - Sudden stop shipping or delivery delay due to US military order.
  - Increasing failures of MIL parts.
5. Issue of Supplying Space Parts

Circumstances about JAXA QPL Items
5. Issue of Supplying Space Parts

Proposing measures to resolve

- The governmental support to the infrastructure for supplying space parts.
  - To clarify the improvement plan
  - To establish a system for the parts supply.
  - To budget and maintain the financial support.
  - To establish opportunities for on-orbit demonstration of the parts.
  - To give priority to using domestic parts.

- Promotion of standardization, technology development, etc.
  - Developments for COTS use.
  - Cooperation with COTS manufactures.
  - Standardization, bulk buying and storage.

- Other.

To realize the following.
- Necessary parts
- Stable supply
- Quality
- Reasonable price
5. Issue of Supplying Space Parts

Proposing “Space Parts Reliability Center (tentative)”

Space Parts Manufacturer → Space Parts Reliability Center
- Planning
  Parts selection, Procurement plan, Specification, Standardization, Facilities plan, etc.
- Test & Evaluation
  Radiation test, Reliability test, DPA, etc., Failure analysis, Data base, etc.
- Parts Supply
  Procurement, Screening, Incoming Inspection, Supply, Storage, etc.

Commercial Parts Manufacturer → Space Parts Reliability Center

Space Parts Manufacturer → Commercial Parts Manufacturer

Stable supply → Space H/W Supplier
Thank you very much for your attention.

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