

## The Homeland Security and the Space Development in Japan

JFSC Editorial Board  
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### Summary

Pertaining to the Homeland Security and the Space Development of Japan, with focusing on my opinions (reference material-01 and -02) stated at Space policy Committee of The Society of Japanese Aerospace Companies (SJAC) in Dec. 19<sup>th</sup> 2002 and Dec. 24<sup>th</sup> 2003 respectively, I would like to summarize my opinion again by gathering the homeland security and security of industry, proposal of foundation of the space development organization of Asia Pacific Area and etc.. I am more than happy if I can listen to the opinions from whom it may concern.

### 1. Definition of security

Main mission of the security of the state, it will be the basis "to guard life and property of the nation", and ramifying the thought, it will be necessary to sense the security and the crisis management. Speaking of the security so far, it has been considered in connection with military security self defense against aggression from other country and military movements and it has been put under a taboo for the space development of our country to declare principle of use for peace. However, considering calmly from principle of the security, now it is important item that the industry to support basis of the national economy of Japan, both economy and industry that are important basis in Japan can contribute internationally by its power, must be protected indeed. In other words, the security of both economy and industry would be an important item indeed to be considered more seriously for our country.

The security of industry and the establishment of crisis management is a matter of great urgency indeed. Speaking concretely, the following security of the space system which is basis of the national economy and construct economy basis of the nation, is important indeed as economic, industrial security of our country.

Maintenance management of communication and broadcast network.

- Communication, broadcast satellite system

Management of safety keeping of service management of safety keeping of aviation, ship and land transportation.

- Flight control and global positioning satellite system (GPS, Quasi-Zenith Satellite System, etc.)

Maintenance management of space infrastructure.

- Meteorological satellite (GMS, MTSAT)
- Earth observation, gathering and monitoring system of information of diastrophism and etc.
- Remote sensing system, data relay (TDRSS) satellite system.

Maintenance management of emergency disaster system.

- Wireless communication system of emergency disaster.

Military security self defense against aggression from other country.

- Information gathering satellite system (IGS) and etc.

In other words, it must be recognized that systems of both communication and broadcast satellite, meteorological satellite, global positioning satellite, earth observation satellite, and etc which have been produced already by space

development activity, have become indispensable to daily life of the nation and also infrastructure of the nation.

2. External trend of space development concerning the security.

2-1 Success and its sensation of launching manned spaceship "Shinshu" of China. The manned spaceship "Shinshu No.5" has been launched successfully from "Shusen" satellite launching center Oct. 15th, 2003(10:00am Japan time) and went around 343 km circumferential orbit 14 times and returned to the earth.

Observing progress of space development of China, it is as shown below and they started at the same time as Japan did and can understand that they advanced the development up to manned flight steadily.

1956 Started space development.

1970 Succeeded in launching the 1st artificial satellite.

1990 Joined commercial satellite launching market.

1999 Aimed at manned space and succeeded in launching "Shinshu No.1".

2003 Succeeded in manned space flight with "Shinshu No.5".

Pertaining to these activities, U.S.A. news paper Washington Times reported that the manned spaceship "Shinshu No.5" performed military information gathering activity too, and reported that space technology of the country will show a big effect in case of the strife against Taiwan in order to obstruct intervention of U.S.A.(reference material-1). Also in South Korea, during Japan launched a spy satellite in the year of 2003, China also succeeded in launching manned spaceship and etc, the surrounding countries put spurs to military use of space, South Korea military is also advancing the study of founding "headquarters of space" which command and control use of space from military aspect effectively (reference material-2). The Reuters news agency on Oct. 18th, 2003 showed thought that U.S.A. officer said that possibility which space will become a battle field in not far future, will exist. And presume that time until space will become a battle field, will not be so long. And reported that it was said that our armaments depend on ability of activity in the space very much and it is certain that it will become latent threat.

2-2 Interpretation of military activity

The definition whether or not the space mission is military affairs, is put on the circumstances to vary with individual viewpoint and its environment considerably. Once author had an experience in being embarrassed by having encountered with argument that in export of microwave communication equipment, " Hasn't its circuit been used also for military communication except for the commercial use in U.S.A.? " and in this case, " Doesn't it violate against the law for prohibition on weapon export ? ".It is a sort of argument that when a normal car is used in the battle field, since it is called as the military use, it conflict with the prohibition on weapon export. However, concerning the background that the distinction as to whether or not both satellite system and manned flight are for the purpose of military, became difficult; it would be due to the reason that space technology such as meteorological satellite, both communication and broadcast satellite, navigation system and etc have melted into the inside of life so much.

It will be the proof of that space infrastructure has penetrated into the inside of daily life and the borderline with military affairs became vague.

### **3. Relationship between Japan and U.S.A., and the security of Asia Pacific Area.**

Due to the matter of that the Soviet Union has launched Sputnik, the space war Between U.S.A. and the Soviet Union has begun in the 1950's~60's, became the competition of intercontinental ballistic missile development, its threat increased and the military tension between east and west has been strengthened.

Due to the fact that entering the 1980's, Star Wars conception of U.S.A., space defense system conception, development of precision guided bomb by GPS, actual proof of pin point attack by the Middle East Gulf War and etc, the military use of the space became more clear. The ballistic missile, Tepodon, by the North Korea was launched Aug. 1998 and the missile was launched into the Pacific Ocean flying over the chain of Japan islands and the threat of the North Korea became realistic.

This became a direct trigger to establish Japan information gathering satellite project. By the occurrence of 9.11 terror (Sep. 11th, 2001) in U.S.A., a big change occurred in the definition of the military security, from the correspondence to military collision of strife between the states, the situation has become to be driven to move the emphasis to the study of measure for defending life of the nation and the state from threat of terror like guerilla. This would become to bring a big change to both space development and philosophy of the security hereafter.

Concerning the information gathering satellite of Japan which has been triggered with launching of Tepodon of the North Korea, 2 satellites were launched Mar. 28th, 2003, and has become to have a new problem as to what type of practical use is necessary as the correspondence to new threat and anxiety in the security of the East Asia. This makes us recognize the necessity of an approach to cooperation between Japan and U.S.A. by Japan original technology from the dependence on U.S.A. of the security. Namely, in order to have the preparation of defending the security of our own country by ourselves, as to getting rid of the entire dependence on U.S.A., the review of the security and the development policy of space system as Japan has become necessary.

#### **Review of declaration for peaceful use of space.**

The diet resolution concerning peaceful use of the space in 1969 has already become hackneyed and it has become a fetter against both the security of Japan and the space commercialization. With regard to the problem of the space utilization, it shows us that acceptance of use for more wide range from the point of view of scientific use, review of the space development policy including it and especially review from aspect of the security for industry, are necessary.

#### **Decision making process of present space policy in Japan.**

Concerning present space development policy making process in Japan, there are following 4 institutions.

- Synthetic Scientific Technology Council  
Cabinet
- Space Activities commission  
Consultative institutional function to Japan Aerospace Exploration Agency (JAXA) under the control of Ministry of Education, Culture, Sports, Science and Technology (MEXT).
- Industrial structural council.  
Council of space industry policy of Ministry of Economy, Trade and Industry (METI).
- Space utilization for the national security.

Development of information gathering satellite.

On the development of space development project, one of important items in its utilization is to make the role of country as anchor tenancy clear.

The participation of the government is indispensable for both development and construction of space infrastructure and as to the way of utilization after development, the cooperation between government and private enterprises saying that commercial utilization is effective, is indispensable. (The foundation of Asia Pacific area space development organization as another anchor tenancy is also put on sight.)

#### 4. Proposal to review of the space development policy.

##### 4-1 Major factor of the space policy

Classifying the purpose of space utilization largely, there are 4 fields which are technology, commercial development, public use and national security, the items shown below are being promoted as concrete system; however, these 4 fields do not work independently, but are being operated with complementing each other, depending each other and producing effect of involvement. It is clear that any one of them is the system which does not exist without the correspondence and the communication with ground systems.

- Science Technology

Space station, Hubble telescope, Mars investigation and etc.

- Commercial Space Development.

Communication and broadcast, Navigation, Information system and Earth Observation Systems.

- Public utilization.

Satellite communication network for emergency disaster, Weather information, Earthquake countermeasure and Construction of GPS system.

- Security

Defense (military affairs) utilization.

The above 4 items bring their effect each other, link mutually and are in the relationship not being divorced.

##### Example,

With assuming countermeasure against disaster and crisis management and etc, it is necessary to prepare environment which the nation can feel easy even a little with making more quick correspondence possible by constructing an information network which communication and broadcast satellite are integrated with ground system. Certainly with assuming the time of disaster, considerable countermeasure are made for relay network on the ground system as to the earthquake-proof, and furthermore in public institution, preparation at the level of satellite portable telephone seems to be available. However, in order to make a quick correspondence to disaster and unforeseen situation, easy; access circuit at the actual spot is essential, and can connect the actual spot to the center and etc by having this indeed.

Its the most strongest provision is satellite communication network and satellite broadcast. Especially, on the water and in the sky where infrastructure is not available, satellite communication become only way. In addition, normally, the public institution can advance correspondence by securing communication

means in some way, but it is normal that people in general do not have such means.

It is also an important factor to secure the means of quick information supply or the means of communication to such people.

#### 4-2 Problem of industrialization gap of space technology.

Hitherto, the space development enterprise company had strong spirit of Development Agency as shown by its name, emphasis was put on sticking to a standpoint of development, took a standpoint of not supporting space industrialization and it has become special intensification to developing satellite and negligence of utilitarian satellite development. The policy concerning research development and procurement of artificial satellite, and the exchange official document between Japan and U.S.A. concerning procedure super 301, has produced situation like attacking a routed enemy; the industrialization of commercial satellite field has been delayed vastly, Japanese satellite manufacturer lost their power of international competition, it is the present status that Japanese commercial satellite operator has also become to depend on foreign procurement and its status is shown in the following 4-2-1 and 4-2-2. In this connection, the article super 301 became overdue already in U.S.A. which had invoked it, but its influence is tremendous in Japan and it remains as it is now. It is the status that it is no exaggeration to say connecting to abandonment of space industrialization. It is urgent to improve it. It would be a policy conversion from the principle of one country. It is an important subject that how to originate and bring up the power to oppose against EU alliance and U.S.A.

The foundation of space development promotional organization of Asia Pacific Area is proposed as showing its solution. If this conception is realized, presume that the possibility of performing a big role of industrialization is big.

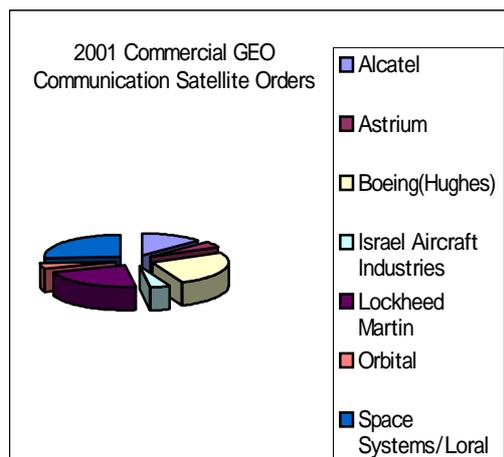
##### 4-2-1 World share of commercial communication satellite of Japan

- JSAT Corp. 9 satellites system.
  - JCSAT-1B, -2, -2A, -3, -R, -4A : Boeing
  - JCSAT-110, -9 : Lock heed Martin
  - N-STAR a, b : Space Systems Loral
- SSC Company 4 satellites system
  - Super Bird -1,2 : Space Systems Loral
  - Super Bird -110 : Lock heed Martin
  - Super Bird -3: Boeing
- BSAT
  - BSAT - 1a, 1b: Boeing
  - BSAT - 2a,b, c: Orbital Science Corporation
- DoCoMo
  - N-SATR-c: Orbital Science Corporations

The adoption of Japanese manufactured satellite for Japanese commercial communication satellite system is zero.

##### 4-2-2 World share of commercial communication satellite

The adoption of Japanese manufactured satellite is also zero here.



#### 4-2-3 Utilization of GPS satellite system.

The global positioning to use GPS satellite system and the spread of equipment on ground for navigation system are expanded quickly. Due to that, the market of the related equipment has reached to 2 trillion yen in the world and Japanese enterprise produce around 50 % of them (refer to market size related to figure “ global positioning satellite”). Judging from the point of view of industrial security, the safe growth of this market is important indeed, the development of global positioning satellite system which Japan has the right of control is important to the security of industry of this field.



### 「測位衛星」関連の市場規模

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GPS関連世界市場規模は2003年に**160億ドル(2兆円)**規模



#### Market size related to "Global Positioning Satellite"

World market size related to GPS in 2003 is the size of 16 billion dollars (2 trillion yen).

Unit: one billion dollars.

Source: Announcement Oct. 1999 by the Department of Commerce U.S.A.

| U.S.A. | Japan | Europe | Asia | Others |
|--------|-------|--------|------|--------|
| 30%    | 44%   | 23%    | 2%   | 1%     |

The market share of Japan is expected to go down from about 47% now to about 44% in 2003.

The European Union to aim at getting rid of dependence on U.S.A. as to GPS satellite system has decided to develop and promote their own GPS system.

On Oct. 30th, 2003 Kyodo News Agency reported that the leadership department of China had regular summit conference with the Prime Minister Berlusconi of Italy which is chairman country of EU and etc in Beijing same day afternoon and both have signed with the document of agreement and etc as to the participation of China to development and investment of GPS system "Galileo" plan which use their own satellite EU is advancing, and China invest 25 billion yen( reference material-4). This will be a signal of policy of China facing to crisis management of GPS utilization system by that China which have succeeded in manned space flight following U.S.A. and Russia and have proved a high space technology, mate with EU side to have a similar thought to the satellite system being able to compete against GPS of U.S.A. to attain superiority at this moment. According to the joint statement being announced, it looks that both parties have agreed to develop "the comprehensive strategic relationship" as to space development. Next, would like to offer the report concerning the case to show separation and delay from the world level of space development policy of Japan as reference, to the consideration for an amendment of space development policy from now.

The Yomiuri newspaper on Oct.13th, 2003 reports that the Meteorological Agency has disclosed on 12th that with regard to " traffic multi purpose satellite ( MT-SAT) " which is the succeeding satellite of stationary meteorological satellite "Himawari " to have retired May, 2003; the manufacturing company of U.S.A. which was asked to make, became bankrupt; the petition of Japanese government to request continuation of production was also rejected at the local court.

And also, as to the satellite MT-SAT, launching has been already delayed 2 times by the mistake of the above mentioned company and the above Agency is renting old meteorological satellite from U.S.A. at the price of 16 million yen per month as substitution for the time being. The launching of the satellite MT-SAT expected at the beginning of next year is also very likely to be delayed and it is reported that the meteorological observation of Japan has become to encounter more large anxiety (reference material-5). The meteorological satellite " Himawari " is the contributing meteorological observation satellite system that melted into the daily life of the nation in weather forecast and etc by own meteorological satellite information continuing since 1977. The present status that its actual result and tradition have ceased and is renting an old meteorological satellite from U.S.A., is very regrettable, national loss and failure of policy. Aren't they lacking in the recognition of that the meteorological satellite system to offer information of observation being close to daily life of the nation, is not only price competition principle, but should be corresponded as a part of national crisis management by mobilizing domestic technology as a national policy? The Yomiuri newspaper on Nov. 2nd, 2003 reports that the Advanced Earth Observing Satellite (ADEOS) " Midori No. 2 " has been failure only 10 months later after launching and has been driven into the stoppage of practical use. One of the causes exists in the quality control system of JAXA to supervise independent development. Upon H-2A, due to

the successive failure of the previous H-2A rocket, both design and production are being checked strictly.

But, for satellite, shorthanded, the satellite to be able to get an order is only one in several years for the manufacturer to be left both design and production, the person to take charge of may be made personnel change by the end of completion, may not be able to maintain and secure engineer, technical level is also deteriorated.

Also recently in H-2A production, a fact of matter that even soldering can not be performed satisfactorily, has been proven; it is necessary to review the space technology of Japan fundamentally, are reported (reference material-6).

Pertaining to the problem of " Midori No.2 ", loading many missions on one large satellite, all missions are disappear if the satellite is failure, in other words, it is developed with the technique to lose everything unless 100% perfect, it is a severe tocsin from the realistic crisis management technique to the satellite development policy to expect perfection. In order to retain the development technology to maintain the sophisticated quality continuously, it shows that both to secure the minimum necessary resources including the man of talent and to secure the minimum volume of work to maintain the industry are necessary.

It is necessary to advance the review of the space development policy earnestly by making them an instruction.

Opinion from a citizen to the space policy.

U.S.A., Europe and China recognize the importance of the space development, correspond very sensitively and feel like that the space development environment in the world changes rapidly in response to it. As well as the navigation on land and sea without airplane as the means of transportation at this moment, can not be considered; would be due to the completion of the consensus that the administration of communication on land, sea and in air, broadcast, observation, flight control, navigation and etc without the space system, can not exist already. It means that the self-defense force of our country also had no choice but to become a big demander of the space system.

Concerning the part related to the security and the information gathering satellite system of present space development budget, it would be natural that the Defense Agency apply for the budget with being conscious of Transformation and Reform at least.

Under the existing circumstances that the information gathering satellite is recognized by the nation, "Wouldn't it be no problem at all, even if it were to be in the space budget which the Defense Agency has applied?" It ought to be admitted by the participant that the framework of the present space budget has been concluded by keeping the congressional resolution of " the space is for utilization for keeping peace ".

However, it also occurs as truth that the progress of the space development has been applied a brake by that the statement of " the space is for utilization for keeping peace " is used as it is. As it stands, leaving both Japanese unique ambiguities to be different very much from view of the world and the strangeness of practical use as they are, also remaining as the country to make particular thought in the world understand; as a result, it can be considered to become to be behind the world level in the space development and its utilization. Also, if the policy to increase framework to be used for the progress of power for international competition of space industry in the space budget, is made; it is good and also

necessary by all means. Although such a way of thinking needs consensus of the nation, in order to improve knowledge, level of thinking, degree of recognition and etc concerning space development of the nation; first of all, it would be necessary to improve the knowledge and the level of thinking of industrial world, educational world, politician and journalism. For example, also as to the concept of “utilization for keeping peace of the space”, the effort to make the whole nation understand that all countries are not the same as the way of thinking of Japan would be also necessary.

In this connection, pertaining to the aviation industry, it is known truth that the demand of airplane for defense is already supporting the domestic airplane industry. Looking back to after second world war, wonder if it was fatal that the technique to have made fiber industry, steel industry, automobile, semiconductor, computer, and etc, industry to support economy of Japan, have not been adopted. Even if from now, modifying the space policy and should make it helpful to its expansion from now on.

**5. Points to be modified as to the space development policy (Space Ground Policy)**

Upon the space development, ranking as executing by the state initiative for realization of dream of the nation in the future and propose to practice the policy with the principle shown below.

**5-1) Convert the space development policy for Japan domestic area to standard and cooperative system of Asia Pacific Area.**

**5-2) Adopt the space development system to be able to export overseas.**

Consider it as purpose to establish Asia Standard to have strategic arrangements to the international standard which our country have initiative.

Change over to the system to be able to compete internationally rather than domestic competition and strengthen power of price competition. First of all, it is considered to be appropriate to start from the area cooperation (first Asia, next Europe, to U.S.A., etc) in the Asia Pacific Area.

**5-3) Change over to both system development and international cooperation from hardware development.**

**5-4) Space development and big increment of budget for practical use.**

Concerning space development project, based on recognition as the state project in principle, consider the state initiative of both development and anchor tenancy as principle. After development by the government, consider it as ground policy to change over to commercial activity for practical use.

The government budget: correspondence to the national infrastructure and investment to new development.

Private fund: System for practical use Commercialization.

Cooperation between government and private enterprises: Possible system for practical use to have development capability, international cooperation system and etc.

**5-5) Challenge to Manned Project**

Development of strained Manned Project for the achievement of genuine reliable quality to have a crisis consciousness as well as form is indispensable.

5-6) Recognition of the present social situation and correspondence to it.

Change over to the policy which consider the present condition of Japan country, for instance, the policy which consider the contribution to the problem of both aging welfare society and environmental problem, is necessary, and the effective use of ODA fund and etc for foundation of the space development cooperative system with Asia Area, should be also studied actively.

5-7) Development of national space project

Space development that is open to the nation and change over to the flexible policy to adopt the result of adjustment between the opinion of general nation concerning space development policy and the opinion of expert, is necessary.

6. Proposal to space development policy.

6-1. Review of declaration for utilization space for peace (congressional resolution as to utilization for peace of space).

Construction of the security satellite system to expand a permissible range up to defensive application not to attack other countries.

6-2. Introduction of philosophy of the industrial security.

Realization of Quasi-Zenith satellite, global positioning satellite, flight control satellite by the state initiative. Guarantee of anchor tenancy by the government.

6-3. The state initiative of both meteorological · environmental observation satellite and emergency disaster communication.

To secure high reliable continuing practical use.

7. Proposal of industrialization for space technology.

1. Change over to policy to do development, but not to support industrialization. Change over of consciousness to support for space industrialization from consciousness of Development Agency.

2. Review of that policy concerning research development and procurement of artificial satellite, and exchange official document between Japan and U.S.A. concerning procedure (super 301) became overdue in U.S.A. stop subordinate attitude and switch to promotion for space industrialization.

3. Change over of policy to area cooperation from principle of one country. Foundation of Asia Pacific Area space development promotional organization, foundation of Asia Pacific Area meteorological satellite organization, creation of anchor tenancy of utilization of space development technology and promotion of standardization.

7-1 Embodiment proposal for realization.

Conception for Asia Pacific Area space development promotional organization ---one proposal for realizing Space Grand Policy.

Countermeasure for realizing space development conception in 21 century of Japan and conception to creation of anchor tenancy by making Japan space technology standard in Asia Pacific Area. In order to activate common use of Communication, global positioning, observation satellite in Asia Pacific Area,

from the beginning by making Japan center with cooperation of government of each countries of Asia, the related institution, broadcast, operator of communication, research institution and manufacturer; execute development of satellite, practical use of both broadcast and communication, spread of technology to Asia Pacific Area, exploitation of user by investment from these institutions.

In accordance with offered technology and capitalized money, work is restored to each joined institutions and share the know-how of satellite manufacture of carrying equipment, manufacture of equipment on ground system and etc. Here, the space development promotional organization of which center is both research institution of Japan country and space equipment manufacturing companies, become core, and execute space development equipment, verification of satellite manufacture, improvement of technology and etc for the realization of Space Ground Policy. Make a direction for standardization and development of effective way of space development, acquisition through these technical development and manufacture. Perform effective planned practical use so as to be able to get power of an international competition by gathering these actual results.

Future privatization is also visualized by improvement of actual result and achievement of this organization. Further, on Nov. 11th, 2003 the communication net of the peoples of China reports that the preparatory meeting for the start of Asia Pacific Space Cooperative Organization (APSCO) is held in Beijing ( reference material- 7 ). Each countries of Bangladesh, Brazil, China, South Korea, Iran, Malaysia, Mongolia, Peru, Philippine, Russia, Thailand, Pakistan, Ukraine, Chile and ambassador or observer from UN Asia Pacific Economic Social Committee (ESCAP) attended at the preparatory meeting and seem to have been held in Beijing on 15th. Although 8 satellites are planned to be launched by this group, 3 to 4 satellites will be launched within 2~3 years from now and rest is expected to be launched between 5 and 8 years later. It is said to have agreed to place the headquarters of its institution in Beijing. Although conception of foundation for Asia Pacific Area Space Development Promotional Organization was proposed in 2002, the study of it was started in 2003 for various reasons. During this time, the study of requesting paper for realization was advanced and the realization was groped at the commercial base. As the details of this plan was attached as appendix, author is happy if the persons who are interested in it, see and study it (refer to appendix-1 )

## Appendix

### Appendix 1. Conception for Asia Pacific Area Space Development Promotional Organization

#### Appendix 1-1 Summary of Space Development Promotional Organization.

Establishing Space Development Promotional Organization ( tentative name ) by participation of the institution related to space development of government, private company, school of countries in Asia Pacific Area by making Japan center, contribute to both the correction of difference in technology of communication, broadcast, global positioning, observation and etc through making joint ownership of space development technology and the realization of rich life of people in Asia Pacific Area by information exchange, education, medical support in remote area. Technology and amount of fund in countries to join, is no object. Also, aim at improvement and making joint ownership of technology related to the space

development in Asia Pacific Area and in turn the realization of standardization through share of work to the company and etc related to the space development of broadcast, communication, global positioning, observation and etc of each countries in accordance with offered technology and fund. Can expect also the function of the security of anchortenancy(?) in Asia Pacific Area.

**Appendix 1-2 Necessity of Asia Pacific Area Space Development Promotional Organization.**

- 1) In Asia Pacific Area including Japan, while the maintenance of up-to-date information infrastructure advance in the city, the maintenance of infrastructure is behind in the country, the difference in frequency of the use of infrastructure is increasing.
- 2) In Asia Pacific Area, with regard to the infrastructure of technology related to space and satellite system, for instance, as to satellite, the domestic technology can not be used almost and depend on import from Europe and U.S.A. This tendency is not shortened, but increased. Also in Japan, depend on the satellite of U.S.A. and the satellite to have used the domestic technology, has not been adopted in the field of practical use.
- 3) Both satellite communication and broadcast are optimum infrastructure for the correction of difference in technology of both information and communication in Asia Pacific Area from the reason of coverage in wide area and both simplicity and easiness of infrastructure and etc.
- 4) Although various commercial satellite communication enterpriser perform their service also in Asia Pacific Area, their service to the low demand area is inadequate in their business plan, and have the problem that the facility on ground for satellite communication can not spread in commercial base with the income in this area and etc. Further, as to ultramodern and international institution such as INTEL, INMAR and etc, privatization is promoted at this moment, on the other hand, there is area on the stage of correction and spread of infrastructure for area communication than international communication in the area to begin from now including Arab and Africa. In developing country, since the charge of cost for satellite development is too heavy to take by own country, it is main to use the satellite launched by other country and it is estimated that there are many countries to want joint development in Asia Pacific Area.

**Appendix 1-3 System of Asia Pacific Area Space Development Promotional Organization.**

1. Country to join Institution: Call the institution related to space development of government, private enterprise and etc of various countries in Asia Pacific Area including Japan as object to join. Refer to use of ODA for calling. First, legal preparation is necessary (treaty for space development promotional organization and etc). Institution of Japan space development perform an important role and it is necessary to help realization for the needs of the countries in periphery.
2. Fund: From international situation in Asia Pacific Area, the contribution at the aspect of both technology and fund from our country, will become important. Japan should make also the method which country offers a package subscription, object of study and the recognition of cooperative project between government and private enterprise, is necessary. Upon subscription from various countries of Asia, welcome also the fund from Japanese enterprise to be active in these area

except for ODA. On the other hand, regardless of amount of money, make it possible to join. Also, though the technical offer to Chosei and etc of China compete with H-IIA, correspond generously.

3. Share: Adjust so as to be able to share the work of development in accordance with both space technology and subscription offered by joining institution and countries. Upon the distribution of work for development ,manufacture and etc of satellite and equipment on ground, organization will perform. Also, in case of satellite communication enterpriser, treat so as to be able to acquire the right of utilization of satellite communication system and etc. Concerning restoration to developing countries, it is also a good idea to plan the use of equipment on ground, free offer of the right of system use and etc ODA. As the way of technical offer from Japan, should make also effective use of technology of i-Spice( WINDS, Quasi-Zenith Satellite System ), object of study. ( Make a system which can do contribution certainly to the conception of standardization that Japan has performed a central role.)

#### 4. Subject

- (1) Use of technology of joining institution in organization.  
For making a mechanism which restore to space development by using demand of user and fund effectively, for instance, make the charge for use offer partially from country and institution ( Australia, Singapore, Indonesia, Thailand and etc ) to join the side of use mainly in other countries and make a mechanism to make it administrative fund.
- (2) Japan domestic space development adjustment institution (space development committee and etc).  
It is important to make a mechanism of advance adjustment with TAXA, NICT and etc.- It will be also a good idea that SJAC take a charge of.
- (3) Common legal recognition and basis adjustment with each countries of joining institutional affiliation (negotiation with institution, government, enterprise of other countries). Can't we argue at the meeting of Asia Pacific Individual negotiation takes time until realization.
- (4) If simultaneous report in wide area (making joint ownership and etc of communication and broadcast ) is deliberated in Asia Pacific Area, good influence seems to appear in making joint ownership of space development. Good influence appears also in adjustment of acquisition of satellite orbit position and etc.
- (5) Investigation for intention of joining institution, government of its belonging country, governmental research institution, communication broadcast enterpriser, manufacturing enterpriser and etc, become the most important subject.
- (6) There is the possibility of that standardization can be achieved easily by using technology owned by various Asia countries.
- (7) To keep cooperation and complementary relationship with U.S.A..  
Adjustment with the similar plan which China advocates after the success of manned flight, is necessary.

#### Appendix 2. Reference material

Reference material-01 : Material of Japan aviation space industrial society

space policy committee. Consideration of Space Ground Policy ( Conception of Asia Pacific Area Space Development Promotional Organization ) (2002-12-19)

Reference material-02 : Material of Japan aviation space industrial society space policy committee. Decision with consideration of strategy and policy to take account of security (A proposal to Space Policy ) (2003-12-24)

Reference material-1 : Spaceship of China Military activity, too ( 2003-10-18 - U.S.A. paper WT Times )

Reference material-2 : Military of South Korea promote “ Space Headquarters “ (2003-10-18 - U.S.A. paper WT Times)

Reference material-3 : Possibility that space will become battle field in not far future : U.S.A. Officer (2003-10-16 Reuters News Agency )

Reference material-4: Participation to Galileo by China Investment of 25 billion yen Signed with participation to Europe GPS Summit conference of China and EU ( 2003-10-30 Kyodo News Agency )

Reference material-5 : Pinch again on replacing satellite for “ Himawari “ U.S.A. satellite manufacturing company became bankrupt (2003-10-13 Yomiuri )

Reference material-6 : “ Midori No. 2 “, review satellite development technology from base (2003-11-2 Yomiuri )

Reference material-7 : Asia Pacific Space Cooperative Institution is expected to start Preparatory meeting in Beijing (2003-11-11 People Net )