Legal Issues Concerning Registration of Space Objects - A Study of JAXA's Practices and Future Challenges

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Abstract

The purpose of this paper is to identify the questions of national and international legal issues concerning registration of outer space by studying JAXA's practices and comparison with other states' practices, especially about object and information to register according to the Registration Convention. Though Japan has abided by the international legal framework, firstly, the national legal mechanism to implement the UN space treaties and the compliance evaluation with the Registration Convention in Japan will be described. Secondly, this paper will introduce some JAXA's practices in order to raise some question about legal issues concerning registration of space objects. For example, space objects which JAXA failed to launch or inject into an orbit, which was separated from the payload including the second stage engine, or which was launched in international cooperation program will be samples to analyze this issues (question). Furthermore this paper will describe the JAXA's practices on registering Japanese experiment module (JEM) and JAXA's resent plan to carries small satellites into the ISS as payloads and inject them into the orbit aboard JEM. Although these studies do not contribute to the current problem notably in the case of transfer of space activities or space objects in orbit, but it is possible to indicate the legal problem in the near future when states establish the platform in orbit or the station on the celestial bodies to explore other planets in human space flight program. Therefore the final object of this paper is to specify the purpose and legal effect of registration and legal perspective to solve some problems in the near future through the analysis of JAXA's practices.

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1 Japanese Mechanism to Implement International Legal Framework

1.1 Mechanism for the UN Space Treaty

Japan is one of the original states party to the Outer Space Treaty[1]. In Japan, the government exercises continuous supervision over activities of a space agency which conducts space-related activities.[2] Therefore since most of the space activities have been conducted directly by Japan Aerospace Exploration Agency (JAXA)[3] or in cooperation with other agencies, there is a common understanding within the Japanese space community that the international legal obligation under Article VI of the Outer Space Treaty would be appropriately observed through the existing organizational laws and regulations.[4] In fact, before Japan acceded to the Rescue Agreement[5], the Liability Convention[6] and the Registration Convention[7], the Space Activities Commission (SAC) of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) set up a special working group on UN space treaties to study as to whether Japan needed to adopt domestic space laws in order to implement such UN space treaties. Based on the various assessments, the Cabinet finally agreed at a meeting held on 7 June 1983, that three of the UN treaties would be acceded to without the need to enact any additional domestic laws, and that a national law would be swiftly adopted through close cooperation among the relevant authorities in cases where the necessity exists or arises.[8]

In 2002, Mitsubishi Heavy Industries, Ltd (MHI) was selected as the sole contractor for H-IIA launch services as well as the prime contractor of H-IIA Launch Vehicle manufacturing and launch operations. However, since an H-IIA rocket must pass JAXA's final examination and the last minute operation to launch a payload is conducted by JAXA personnel at launch facilities in the Tanegashima Space Centre owned by JAXA, the combination of JAXA

1 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, January 27, 1967, 610 U.N.T.S.205.

2 A/AC.105/C.2/2012/CRP.8 (16 March 2012), p. 5.

3 On 1 October 2003, the Institute of Space and Astronautical Science (ISAS), the National Aerospace Laboratory of Japan (NAL) and the National Space Development Agency of Japan (NASDA) were merged into one incorporated administrative agency named JAXA.

4 Setsuko Aoki, "Regulation of Space Activities in Japan", (Chapter 9), in Ram S.Jakhu, (ED), *National Regulation of Space Activities*, p. 205, (2010).

5 Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, April 22, 1968, 672 U.N.T.S.119.

6 Convention on International Liability for Damage Caused by Space Objects, March 29, 1972, 961 U.N.T.S.187.

7 Convention on the Registration of Objects Launched into Outer Space, January 14, 1975, 1023 U.N.T.S.15.

8 Setsuko Aoki, *supra* 4, p. 208 (2010).

Law[9] and the administrative guidance would suffice to address the international responsibility and liability requirements, because the authorization and continuous supervision of MHI by the MEXT through JAXA is to be appropriately conducted.[10] Concretely speaking, pursuant to Article 18 (2) of the JAXA Law, JAXA follows the standard guidelines for launching activities established by JAXA with authorization from the competent ministries. According to the standard guidelines, when JAXA launches satellites, the launch plan has to be reviewed and approved by SAC in order to ensure the safety of persons and property, mainly of thirds parties.[11]

Outside Japanese territory, JAXA's activities also have to be conducted under the authorization and continuous supervision of the competent ministries. The exploration and use of outer space by JAXA from outside Japanese territory have been covered by international instruments such as conventions, legally non-binding agreements and memorandums of understanding etc. Furthermore, since JAXA is responsible for assuring safety in all phases of any consigned launch from Japan, any launching activities procured by a foreign country or Japanese or foreign private company are considered to be governed by the JAXA law. Article 24 of the JAXA Law has a special provision enabling the competent ministries to request JAXA to take the necessary actions to ensure that the space-related treaties are implemented properly.[12]

1.2 Mechanism for the Registration Convention

The Registration Convention was adopted by the UN General Assembly without vote on 12 November 1974, opened for signature on 14 January 1975 and entered into force on 15 September 1976.[13] State parties to the Registration Convention shall establish and maintain an appropriate national registry of space objects, inform the UN Secretary General of the establishment of such registry and register the space object launched into Earth orbit or beyond by means of entry in such registry.[14] In order to fulfil these obligations under the Registration Convention, MEXT is responsible for maintaining such a Registry of Space Objects, in cooperation with the related ministries and agencies. And the Ministry for Foreign Affairs (MOFA) furnishes the registered information periodically to the Secretary General of the United Nations.[15]

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9 Unofficial translation version of JAXA Law is available at <http://stage.tksc.jaxa.jp/spacelaw/country/japan/japan_index.html>.

10 Setsuko Aoki, *supra* 4, p.210 (2010).

11 A/AC.105/957 (15 January 2010), pp.4-5.

12 *Ibid*, pp.4-5.

13 DIEDERIKS-VERSCHOOR AND V.KOPAL, AN INTRODUCTION TO SPACE LAW, 3rd ed., p.44, (2008).

14 Convention on the Registration of Objects Launched into Outer Space, *supra* 7, Art.II, III and IV; Stephan Mick and Bernhard Schmidt-Tedd, "Commentary on Article VIII Outer Space Treaty", in Stephan Hobe, Bernhard Schmidt-Tedd and Kai-Uwe Schrogl, (ED), *Cologne Commentary on Space Law*, p.150 (2009).

15 COPUOS/LEGAL/T.723 (Unedited transcript), p.2; A/AC.105/957 (15 January 2010), p.4.

Even though Japanese satellites are launched outside Japanese territory, Japan have registered these satellites when these are solely operated by Japan. For example, the Space Environment Reliability Verification Integrated System (SERVIS-1) satellites was launched in the Russian Federation but was registered Japan.[16]
And Japan's Optical Inter Orbit Communications Engineering Test (OICETS) Satellite was launched in Ukraine and was registered by Japan.[17] On the other hand, in the case of a satellite that is operated in partnership with foreign country, Japan discusses which State will register such a satellite effectively, regardless of which country launches the satellite.[18] For example, Tropical Rainfall Measuring Emissions (TRMM) satellite which was launched by Japan's H-II rocket and operated by NASA and JAXA had been registered by the United States, after having consulted and agreed upon it first.[19] With regard to jurisdiction and control of space object launched by multiple launching States, Japan envisages that a State who has registered a space object will retain jurisdiction and control over that object.[20]

2 JAXA's Practices Concerning the Registration Convention

2.1 General Principle

The Registration Convention elaborates Article VIII of the Outer Space Treaty which already posits both concept of registration of space objects and its major consequence which is the possibility to exercise jurisdiction over the space objects so registered.[21] The main purposes of the Registration Convention are to (1) make provision for national registration by launching States of objects launched into outer space to identify the State which exercises jurisdiction over the space object, (2) maintain UN Register served as a central register of objects launched into outer space and (3) provide for State parties additional means and procedures to assist in the identification of space objects.[22] Therefore the Registration creates a chain of attribution

16 ST/SG/SER.E/463 (17 January 2005); COPUOS/LEGAL/T.705 (Unedited transcript), p.11.
17 ST/SG/SER.E/486 (22 February 2006); COPUOS/LEGAL/T.742 (Unedited transcript), p.2.
18 COPUOS/LEGAL/T.742, *Ibid*, p.2.
19 ST/SG/SER.E/339 (24 June 1998).
20 COPUOS/LEGAL/T.742, *supra* 17, p.3.
21 Frans G.Von der Dunk, "The Registration Convention: Background and Historical Context", *Proceedings of the Forty-sixth Colloquium on the Law of Outer Space*, p.451 (2003).
22 BIN CHENG, STUDIES IN INTERNATIONAL SPACE LAW, pp.419-421 (1997).

between the launching States, the space object and jurisdiction and control by the registering State.[23]

To satisfy these purposes mentioned above, following the example of the Liability Convention, the Registration Convention starts in Article I by giving definitions of the term "launching state", "space object" and "state of registry".[24] However, the expression "space object" is not specifically defined in any of the conventions relating to outer space notwithstanding efforts to do so in the negotiations leading to the Liability Convention and the Registration Convention.[25]

As a result, Article I (b) of the Registration convention provides that the term "space object" includes "component parts of space object as well as its launch vehicle and parts thereof", but merely specifies that individual parts or components are to be included within the definition, without offering a definition itself.[26]

Practically, though the definition of "space object" is neither clear nor satisfactory, a common understanding of the term "space object" exists. Accordingly, a space object is every object that is intended to be launched.[27] It is noteworthy that in contrast to the common understanding of the term "space object", according to Article II of the Registration Convention only a space object that "is launched into earth orbit or beyond" falls under the duty to register.[28] Consequently, objects that have not reached earth orbit in principle do not fall under the scope of Registration Convention.[29] In fact, Japan has not registered satellites which are failed to launch.

In addition, the United Nations Office for Outer Space Affairs divides the practices of parties providing information into three classes.[30] The first class is where parties provide information on all space objects, including non-functional

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23 "Jurisdiction" means the legislation and enforcement of laws and rules in relation to persons and objects. "Control" means the exclusive right and the actual possibility to supervise the activities of a space object and, if applicable, the personnel thereof. Therefore, since the legal consequence of jurisdiction and control is the applicability of national law of the State of registry such as civil and criminal law including intelletctual property law for the space object including over any personnel thereof. See Stephan Mick and Bernhard Schmidt-Tedd, *supra*.14, p.157, (2009).

24 Convention on the Registration of Objects Launched into Outer Space, *supra* 7, Art. I; DIEDERIKS- VERSCHOOR AND V. KOPAL, *supra*.13, p.45, (2008).

25 BIN CHENG, *supra* 22, p.463 (1997).

26 Convention on the Registration of Objects Launched into Outer Space, *supra* 7, Art. I (b); Armel Kerrest and Lesley Jane Smith, "Commentary on Article VII Outer Space Treaty", *supra* 14, pp.139-140 (2009).

27 Under Article I (b) of the Liability Convention, launching includes attempted launching. That definition appears to be generally applicable in the determination of what is a space object. See BIN CHENG, *supra* 22, pp.463-464 (1997).

28 Convention on the Registration of Objects Launched into Outer Space, *supra* 7, Art.II (1).

29 Stephan Mick and Bernhard Schmidt-Tedd, *supra* 14, pp.150-151 (2009).

30 A/AC.105/C.2/2004/CRP.17 (5 April 2004), p.7.

objects and objects that are generated during and after launch. This includes objects generated through impacts, explosion, etc. France and the United States provide information on all non-functional space objects.[31] The second class provides information on functional objects and non-functional objects (such as third-stages) that are produced during or just after launch. They do not include information on objects created after the launch phase. China and India follows this practice, as does ESA.[32] The third class provides information on functional objects only, and this practice is observed by most other parties to the Convention. Israel, the Russian Federation and Japan are categorized as the third class.[33]

Recently at the UNCOPUOS Legal Subcommittee during its meeting in 2004 and 2007, the agenda item called "Practice of states and international organizations in registering space objects" had been discussed to collect and examine the reports of states and international organizations on their practices and drafting of recommendations for enhancing adherence to the Registration Convention and improving these practices.[34] Then, the Recommendation on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects was adopted without vote at the United Nations General Assembly in 2007.[35] Paragraph 3 (c) of the 2007 Recommendation makes a reference that each space object should be registered separately in cases of joint launches of space objects.

In May 2008, the Japanese Diet passed the Basic Space Law.[36] This law mandates that Japan's space activities be executed in ways that improve citizens' lives, promote commercialization, ensure international, national and human security, as well as continue to foster international relationships and cooperation. It also requires further development of laws and regulations necessary to implement it. Thus Japan is developing a new legislation in order to create a legal framework in which the compliance with international agreement on space activities is to be guaranteed pursuant to the Basic Space Law.[37] In March 2010, a Working Group for legislation on Space Activities, established under the Headquarters, finalized its report which will contribute to the development of legislation.[38] Taking into account the current situation, this report contains the recommendation that the object of registry should include the launch vehicle and its parts such as third-stages.

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31 A/AC.105/C.2/L.255 (25 January 2005), p.5.
32 *Ibid*, p.6.
33 *Ibid*, p.6.
34 DIEDERIKS-VERSCHOOR AND V.KOPAL, *supra* 13, pp.47-48 (2008).
35 General Assembly Resolution A/RES/62/101 (17 December 2007).
36 Unofficial translation version of the Basic Space Law is also available at <http://stage.tksc.jaxa.jp/spacelaw/country/japan/japan_index.html>.
37 COPUOS/LEGAL/T.813 (Unedited transcript), p.8.
38 See Japanese the technical presentation on the COPUOS Legal Subcommittee 49th Session explaining the details of the report, available at <www.oosa.unvienna.org/oosa/en/COPUOS/Legal/2010/presentations.html>.

2.2 JAXA's Current Practices

(a) The Satellite Which Fail to Inject into the Orbit

Venus Climate Orbiter "AKATSUKI" (PLANET-C) was launched in May 2010 from the Tanegashima Space Center.[39] General function of this satellite is to elucidate the dynamics of the atmosphere of Venus, in particular its super-rotation, by means of three-dimensional visualizations of atmospheric motions using multi-wavelength imaging from orbit.[40] In December 2010, it was very regrettable that the orbit injection effort failed since the AKATSUKI had encountered an unexpected accident. Fortunately, since JAXA still have maintained contact with the AKATSUKI, orbit control operation was performed three times in November 2011 and the AKATSUKI is now flying on an orbit where it can meet with Venus in 2015.

In this case, the AKATSUKI is registered as a space object which "is launched into earth orbit or beyond" although the present satellite status doesn't fulfil the mission. However, there is no reason to think that non-functional space objects are no longer space objects and the definition of space object is not related to the object's use or usefulness.[41] In fact, it may be difficult for a certain type of satellite to determine just after the launch whether a satellite become functional or non-functional, for example although the NOZOMI (PLANET-B)[42] launched in 1998 was abandoned to insert into orbit around Mars in 2003, the KAKEHASHI (COMETS)[43] launched in 1998 was injected to lower orbit than the geostationary transfer orbit but the KAKEHASHI was used for conducting scheduled experiments on the recurrent orbit due to successful seven orbital controls.[44]

(b) The Satellite Which Consists of the Main Orbiter and Small Satellite

Selenological Engineering Explore (SELENE) the "KAGUYA" was launched on 14 September 2007 from the Tanegashima Space Center for global observation of the Moon to provide scientific data to research its origins and evolution.[45] The KAGUYA consisted of the Main Orbiter and two small satellites which are the "OKINA" (Relay satellite) and the "OUNA" (VRAD satellite).[46] The Main Orbiter was injected into the orbit of the Moon at an altitude of

39 See AKATSUKI special site, available at <www.jaxa.jp/countdown/f17/index_e.html>.
40 ST/SG/SER.E/604 (22 November 2010), p.2.
41 BIN CHENG, *supra* 22, p.506 (1997).
42 See NOZOMI mission site, available at <www.isas.jaxa.jp/e/enterp/missions/nozomi/index.shtml>.
43 See KAKEHASHI mission site, available at <www.jaxa.jp/projects/sat/comets/index_e.html>.
44 Both NOAOMI and KAKEHASHI were registered according to the Registration Convention. See ST/SG/SER.E/355 (25 May 1999), pp.2-3.
45 ST/SG/SER.E/533 (5 March 2008), pp.2-3.
46 See KAGUYA mission site, available at <www.jaxa.jp/projects/sat/selene/index_e.html>.

100 km. The OKINA was separated on 9 October 2007 from the Main Orbiter and placed in the orbit at an apolune altitude of 2400 km to relay communication between the Main Orbiter and the ground station for measuring the gravity field of the backside of the Moon. The OUNA was separated on 12 October 2007 from the Main Orbiter and placed in the orbit at an apolune altitude of 800 km to measure the gravity field around the Moon by sending radio waves.
In this case, the Main Orbiter and two small satellite were registered separately with reference to ach the Committee on Space Research (COSPAR) international designator although the information to register concerning "Date and time of launch" and "Basic orbital parameters" is same as at time of launch.[47] Then, when the OKINA and the OUNA became non-functional, additional information including change of these satellites' statuses was furnished with reference to each "Basic orbital parameters" in lunar orbit.[48] India also registered the "Chandrayaan-1" which was launched on 22 October 2008 for scientific study of the Moon and the "Moon Impact Probe" which was separated from the Chandrayaan-1 on 14 November 2008 separately with reference to each COSPAR international designator. On the other hand, the European Space Agency (ESA) launched the "Mars Express" on 2 June 2003 to perform detailed studies of the planet's surface, its subsurface structures and its atmosphere and also deployed the "Beagle 2" which was a small autonomous station landing on the planet to study the planet's surface and look for possible signs of life.[49] These space objects were registered concurrently without reference to the designator of each space object.[50] In such case, the information to register concerning "Basic orbital parameters" will not be harmonized.[51]

(c) The International Space Station

The Inter-Governmental Agreement (IGA) on the International Space Station (ISS) was signed on 29 September 1988 by the countries representing the four partners participating in the stablishment of the Space Station (USA, Japan, Canada and certain ESA Member States). On 29 January 1998, a new ISS IGA with the additional members, Russia, Sweden and Switzerland was signed. Under this IGA, the total number of countries participating in the ISS program is

47 ST/SG/SER.E/539 (2 April 2008), PP.2-3; ST/SG/SER.E/533 (5 March 2008), pp.2-3.
48 T/SG/SER.E/600 (24 November 2010), pp.7-8.
49 ST/SG/SER.E/432 (9 September 2003), p.6.
50 It may be difficult to evaluate this practice since (i) ESA had not furnished the information of an appropriate designator until ST/SG/SER.E/490 was furnished on June 16 2006 and (ii) it was not able to identify the landing point of Beagle 2 because this landing ended in failure and no communication was established with Beagle 2 unfortunately.
51 For example, the United States furnished the information of "Basic orbital parameters" concerning Mars Rover A and Mars Rover B as briefly "on Mars". See ST/SG/SER.E/449 (21 April 2004), p.3.

fifteen. A related Memorandum of Understanding was signed on 24 February 1988.[52] The issue that policy makers faced was whether such a station should be conceived as a single space object with the carious elements being regarded as the object's component parts or whether it should be taken to constitute a cluster of different space objects requiring separate registration. The latter had notable relevance in connection with the exercise of jurisdiction and control.[53] In the case of the ISS program, the parties have decided that they would register their respective elements in the station separately.[54]

In this case, Japanese Experiment Module (JEM) the "KIBO" was scheduled to be transported to the ISS in three sections.[55] The KIBO's docking and assembly operations have been completed as the Experiment Logistics Module Pressurized Section was assembly in March 2008, Pressurized Module with Remote Manipulator System in June 2008 and the Exposed Facility in July 2009. Each section was launched by the United States' National Aeronautics and Space Administration (NASA) on the Space Shuttle. Contrary to the ESA's Spacelab which drew its supplies from the Shuttle and remained all the time within the Shuttle, each section was registered by Japan with using the COSPAR international designator with branch number to distinguish the Space Shuttle.[56] In this way, although reusable transfer vehicles such as the Space Shuttle are registered by mission, the payload on the vehicle will be regarded as the independent space object and the state of registry can retain jurisdiction and control over such object.[57]

(d) The Small Satellite Deployed from the ISS

On 21 July 2012, JAXA launched the H-IIB Launch Vehicle No.3 (H-IIB F3) with the "KOUNOTORI 3" (HTV 3, a cargo transfer vehicle to the International Space Station) from the Tanegashima Space Center and the KOUNOTORI3 was successfully berthed to the ISS on July 28.[58] Approximately 3.5 metric tons of cargo will be loaded in the HTV pressurized logistics carrier. Each supply is packed in the Cargo Transfer Bags (CTBs) respectively.[59] JAXA also plans the demonstration of small satellites deployment from the Japanese

52 Stephan Mick and Bernhard Schmidt-Tedd, *supra.14*, p.159, (2009).
53 Stephen Gorove, "Toward A Clarification of Term "Space Object" An International Legal and Policy Imperative?", *Journal of Space Law,* Vol.21, p. 14, (1993).
54 BIN CHENG, *supra 22*, p.503 (1997).
55 See ISS and KIBO mission's site, available at <http://iss.jaxa.jp/iss/index_e.html> and <http://iss.jaxa.jp/en/>.
56 ST/SG/SER.E/556 (15 March 2010), pp.2-3; ST/SG/SER.E/626 (29 September 2011), p.2.
57 A/AC.105/C.2/L255, *supra* 31, p.6; BIN CHENG, *supra* 22, p.473 (1997).
58 See JAXA's press releases, available at <www.jaxa.jp/press/2012/07/20120721_h2bf3_e. html> and <www.jaxa.jp/press/2012/07/20120728_kounotori3_e.html>.
59 See KOUNOTORI3/H-IIB Launch Vehicle No.3 special site, available at <www.jaxa.jp/countdown/h2bf3/index_e.html>.

Experiment Module (JEM) in order to enhance the capability of JEM's utilization and to offer more launch opportunities to small satellites. Therefore the cargo includes the JEM - Small Satellite Orbital Deployer (J-SSOD) and five small satellites (CubeSats). J-SSOD introduces new opportunity for deploying the small satellite into the space from the ISS to the world-wide growing small satellite communities. The advantages of using the J-SSOD system are (i) frequent launch opportunities; HTV, ATV and COTS etc, and (ii) moderate launch environment; packed in CTB and launched as a pressurized cargo.
In this case, the question will arise as to whether the information to register Cubesats such as "Date and territory of launch" would focus on the time of launching the KOUNOTORI 3 or on the time of deploying Cubesats. As mentioned above, NASA regarded the ESA's Spacelab which drew its supplies from and remained at all times within the Space Shuttle as merely a part of the Space Shuttle and did not agree to its being separately registered. If the payload were to be separated and to have an independent existence, it would be a separate space object and would need to be separately registered with the appropriate State or international organization. If not, the payload would simply be "property on board" provided in Article III of the Liability Convention forming part of that object and would not be an independent space object. This would in fact apply to all items of property on board.[60] In fact, although another issue whether the launch from a celestial body or from free space would entail the application of space treaties which refer to objects launched "into" outer space may arise, some parties provide the date of launch of the parent space object while others provide the time and date of deployment from the parent space object.[61] For example, in the placement into orbit of the Canadian Target Assembly, Canada provided the date of launch of the parent spacecraft, the Space Shuttle Columbia. It also provided the time and date of the deployment of the Canadian Target Assembly from the Space Shuttle, as well as the longitude and latitude over which the deployment took place.[62] On the other hand, when the SAC-A was launched by the Space Shuttle on 4 December 1998, Argentina provided only date of the deployment, 14 December 1998, as the information of "Date of launch".[63] Besides, when Russian unique satellites called the TNS-0 and the SuitSat were deployed from abroad the ISS by hand during extravehicular activity, the Russian Federation noted that each satellite was "launched from the International Space Station" and provided not the date of launching Progress but the date of deploying each satellite as the information of "Date of Launch".[64] These practices will be practical solution. This is because the possibility for changing the ISS operating plan or stopping the deployment from the ISS due to the satellite failure remains until the satellite is deployed in orbit from the ISS. Therefore, the information to register in such case will be

60 BIN CHENG, *supra* 22, pp.501-502 (1997).
61 Stephen Gorove, *supra* 53, p.18 (1993); A/AC.105/C.2/L255, *supra* 31, p.10.
62 ST/SG/SER.E/283 (23 May 1995), p.2; A/AC.105/C.2/L255, *supra* 31, p.10.
63 ST/SG/SER.E/351 (1 February 1999), p.2.
64 ST/SG/SER.E/473 (4 July 2005), p.2: ST/SG/SER.E/494 (17 August 2006), p.3.

regarded as the intent of State Party to recognize the independent space object. However, it is necessary to discuss about the scope of launching State in such case. For example, if the J-SSOD and the State X's satellite are transferred to the ISS as the ATV's cargo from Guiana Space Center and deployed from JEM by NASA astronaut, what State Party should be regarded as launching State? While State X is "a State which procures the launching of a space object" and Japan is "a State from whose facility a space object is launched", are ESA and France launching States as "a State which launches a space object" and "a State from whose territory a space object is launched" respectively? And is the United States launching State as "a State which launches a space object" from the JEM according the information to register the deployed satellite?

3 Conclusion

In the near future, the problem concerning registration of space object will become even more complicated when States establish the platform in orbit or the station on the celestial bodies to explore other planets in human space flight program, especially if such facilities are constructed from materials brought up to outer space or the celestial body by space vehicle registered in different States.[65] In regard to such problem, it will be important to take into account the practical situation. For example, when these materials are brought up by a number of different space vehicles in the construction of the facilities or space vehicles following their berthing or their assembly are relaunched to explore other planets, whether or not States have the necessity and suitability to regard such materials and space vehicles as another independent space object should be discussed. One of the purpose and legal effect of registry is to express intention to and confer legitimacy to retain jurisdiction and control over space object. Therefore, the following legal perspectives will be derived from the study of JAXA's recent practice; (i) Space objects which have the independent legal character should be registered respectively even though the station on the celestial body consists of these space objects. When such space objects are transferred directly or such space objects are constructed newly on the celestial bodies, it may be difficult to use own COSPAR international designator. In such a case, State of registry will deal with using appropriate branch number. (ii) It is important for each State of registry to furnish the additional information from time to time. If several space objects exist on the celestial body, State Party may have to take into consideration the appropriate information to register such as the "Basic orbital parameters". (iii) Although registration does not establish liability, State of registry cannot deny the status of launching State. Although State Party may register relaunched space object from the platform in orbit or the station on the celestial body by informing the time and location of deployment into new orbit as the "Date and territory or location of launch", it will be necessary to confirm international liability.

65 BIN CHENG, *supra*. 22, p.473 (1997).