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Practice of States and international organizations in registering space objects

Practice of States and international organizations in registering space objects: replies from Member States

Note by the Secretariat

Addendum

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* A/AC.105/C.2/L.247.

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II. Replies received from Member States*

Australia

[Original: English]

1. Australia is a party to the United Nations Convention on Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex).

2. Australia has enacted the Space Activities Act 1998: (a) to establish a system for the regulation of space activities carried out either from Australia or by Australian nationals outside Australia; (b) to provide for the payment of adequate compensation for damage caused to persons or property as a result of regulated space activities; (c) to implement certain of Australia's obligations under the United Nations space treaties; and (d) to implement certain of Australia's obligations under specified space cooperation agreements.

3. Part 5 of the Act provides for the Minister to keep an Australian Register of Space Objects. It requires the Minister to enter in the Register specified particulars for a space object launched into Earth orbit or beyond under an authorization provided under the Act. It requires the Minister to make the Register available for inspection at published times and places.

4. The Australian Space Licensing and Safety Office (SLASO) was established to administer the Act, including the registration obligations. The holder of an authorization under the Act to launch a space object into Earth orbit or beyond is required to provide to SLASO the registration information within a specified time following the launch. SLASO enters the relevant information into the Australian Register of Space Objects, which can be accessed on its web site (www.industry.gov.au/space).

5. SLASO periodically reviews the Australian Register of Space Objects by asking the organizations responsible for registered space objects to confirm or update as appropriate the information it contains on their space objects.

6. The Permanent Mission of Australia to the United Nations (Vienna) provides registration information compiled by SLASO to the United Nations through diplomatic channels.

France

[Original: French]

1. Basic principles

1. France is a launching State that carries out launches and arranges for them to be carried out on behalf of national or foreign companies or international organizations.

* The replies are reproduced in the form in which they were received.

2. France registers launcher elements launched from its territory that are placed in Earth orbit or beyond, whether the launchers are produced by a French company or are designed and marketed by a foreign company. In the event of fragmentation in space, France also registers the component parts of a launcher as soon as it is aware of the situation.

3. France registers national satellites, whether they belong to government organizations or private companies and irrespective of the State from which they were launched.

4. The European Telecommunications Satellite Organization (EUTELSAT) and France have agreed that France will register EUTELSAT satellites on a temporary basis until EUTELSAT is fully eligible to register them itself. That arrangement also applies to EUTELSAT satellites launched from foreign territory using a foreign launcher.

5. With regard to foreign satellites placed in orbit by a launcher launched from French territory, the launch operator includes in its launch contract a clause on the declaration and registration of the space object(s) placed in orbit during the launch by the State whose jurisdiction applies to the company/companies or organization(s) that have arranged the launch. This is in line with article II, paragraph 2, of the Registration Convention.

6. France informs the Secretary-General of previously registered space objects that are no longer in Earth orbit as soon as it is aware of such cases. Such declarations concern in particular space objects that have been in Earth orbit and have re-entered the atmosphere.

7. As far as possible, France informs the Secretary-General of additional information about space objects included in its register, such as de-orbit manoeuvres, modification of the orbital position of a geostationary satellite and orbital manoeuvres designed to place such inactive satellites in a “graveyard” orbit.

2. Implementation of these practices

8. In France, the Centre national d’études spatiales (CNES) is the clearing house for all information allowing the registration of space objects in accordance with the principles described above. To that effect, CNES has created a catalogue in which all the information and necessary updates are entered.

9. After an internal CNES verification process, the information is recorded in the CNES catalogue and then communicated to the Ministry of Foreign Affairs.

10. The official national register, held by the Ministry, is established and updated on the basis of the data contained in the catalogue.

11. The national register is then communicated by the Ministry of Foreign Affairs to the Secretary-General.

(a) Declaration and registration of launchers launched from French territory and of national satellites

(i) Advance notification of launches

12. There is an informal agreement between CNES and the National Aeronautics and Space Administration (NASA) of the United States of America that, whenever possible, a few days before a forthcoming launch CNES informs United States Space Command (USSpaceCom), via NASA, of any such launch and its characteristics in terms of the launch date, launcher performance, payloads and the orbits targeted on separation of the various space objects in question.

(ii) Declaration of national satellites

13. National satellite operators, whether public or private, communicate the following minimum information to CNES as soon as possible after launch: the satellite identifier, launch date and site, general function of the space object, transfer orbit on separation (apogee, perigee, inclination and nodal period) and final mission orbit, possibly with the orbital position longitude for geostationary satellites.

(iii) Declaration of launchers and launcher elements

14. The launch operator declares, as soon as possible after launch, the launch date, time and site and the space objects that are launcher components and were placed in orbit during the launch.

15. Such objects are generally associated with the launcher's upper stage and the boosters attached to it, as well as the inter-satellite structure(s).

16. For each of the objects, the launch operator communicates the orbital parameters on separation (apogee, perigee, inclination and nodal period).

17. The launch operator also indicates, for information purposes, what satellites were placed in orbit during the launch.

(b) Monitoring of objects in orbit

18. CNES monitors on a regular basis the progress of space objects for which France is liable as the launching State.

19. That monitoring is carried out through notifications from satellite operators for matters relating to the evolution of the orbit characteristics of active satellites and through various documents published by NASA—the *Satellite Situation Report*, the *SPACEWARN Bulletin*, the *60-Day Decay Forecast Report* and *Decay Prediction Report Response*—for all matters relating to inactive satellites and launcher elements, in terms of the evolution of orbit characteristics, fragmentation and re-entry into the atmosphere.

(c) Registration

20. In France, CNES collected and now updates the data that allow French space objects to be included in the United Nations register. Twice a year, CNES communicates a summary of new entries for the past six months to the Ministry of Foreign Affairs. The Ministry is responsible for communicating those data on the registration of space objects to the Secretary-General.

21. In practice, for each object, including significant launcher debris, CNES furnishes the registration number (for this purpose, the national chronological number has recently been replaced by the international number allocated by the Committee on Space Research, with a view to simplification), the launch date and site, the launcher type, the orbital parameters (apogee, perigee, inclination and nodal period) and the function of the space object, in accordance with article IV of the Registration Convention.

22. For information purposes, CNES also indicates in its catalogue, for any launch from French territory, the name(s) of the satellite(s) involved and the name(s) of the State(s) that arranged the launch.

23. In addition, CNES updates its catalogue whenever a previously registered space object re-enters the atmosphere. Information on such re-entries includes, as a minimum, the registration number of the object and the date of re-entry into the atmosphere as it appears in the *Satellite Situation Report* and the *SPACEWARN Bulletin*, which are published regularly by NASA.

24. The Ministry of Foreign Affairs, through the Permanent Mission of France to the United Nations (Vienna), hereby communicates the updated contents of the national register to the Office for Outer Space Affairs.

Netherlands

[Original: English]

1. The Netherlands has not communicated any information on space objects or the establishment of a national registry in accordance with the Convention on the Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex) or General Assembly resolution 1721 B (XVI) of 20 December 1961. It has, however, made observations with respect to the inclusion of certain space objects in the Online Index of Objects Launched into Outer Space (see A/AC.105/806) and has provided information on the decay of a space object that was subject to its jurisdiction and control at the time of its decay (see A/AC.105/824).

2. The following space objects have been or are operated under the jurisdiction or control of the Netherlands for a part or the whole of their life cycle.

	Name	*Launch site*	*Launch date*	*Registered with the United Nations*	*Status*	*Date of decay or change*
1.	ANS	Vandenberg Air Force Base, United States of America	30 August 1974	No	decayed	14 June 1977
2.	IRAS	Vandenberg Air Force Base, United States of America	25 January 1983	No	in orbit	
3.	NSS 513	Kourou, French Guiana	17 May 1988	No	decayed	14 July 2003

	Name	*Launch site*	*Launch date*	*Registered with the United Nations*	*Status*	*Date of decay or change*
4.	NSS 703	Cape Kennedy, United States of America	6 October 1994	No	in GSO	
5.	NSS 803	Kourou, French Guiana	23 September 1997	No	in GSO	
6.	NSS 806	Cape Kennedy, United States of America	28 February 1998	No	in GSO	
7.	NSS 7	Kourou, French Guiana	17 April 2002	No	in GSO	
8.	NSS 6	Kourou, French Guiana	17 December 2002	No	in GSO	

3. The space objects numbered 3-6 were transferred in orbit to New Skies Satellites after they were launched, positioned in orbit and operated by persons who were not subject to the jurisdiction or control of the Netherlands. New Skies Satellites is a company that is incorporated in the Netherlands.

Republic of Korea

[Original: English]

1. As the Republic of Korea only recently began active activities in outer space, those activities have been conducted and regulated mainly by the Government or by public agencies without any separate national law implementing the Registration Convention and other United Nations treaties and principles relating to outer space. The activities comply fully with all related United Nations international legal instruments.

2. However, for the purpose of preparing for the scheduled construction of the Korea Space Center and in view of the expected expansion of private outer space activities, the Republic of Korea plans to enact an outer space act by 2005.

3. Following the enactment of the outer space act, practices of registration, including the establishment of the national registry, and the authorization and licensing regime for private outer space activities will materialize and be more institutionalized in accordance with the legislation.

4. With respect to the registration of space objects with the United Nations, the Republic of Korea notifies as follows:

Focal point:	Ministry of Science and Technology.
Time of notification to the United Nations:	Usually within one month after each launch.
Contents and scope of the notification:	Country name, name of the space object, date of launch, place of launch, launch vehicle, basic orbital characteristics, general function of the object.

III. Replies received from international organizations

European Space Agency

[Original: French]

1. Introduction

1. The European Space Agency (ESA) is an intergovernmental international organization that has been assigned by its member States the purpose of defining and conducting space research and development activities in the area of technology and applications. These activities notably concern science, communications, meteorology, navigation, launchers and space transport systems. The programmes are funded by the member States. For launching purposes, the Agency has a base at the Guiana Space Centre in the French overseas department of Guiana, from which the Ariane rockets built by the Agency are launched. For commercial satellite launches for the Agency or other organizations, the launches are carried out by the Arianespace company constituted under French law. The Agency's launch activities in Kourou are governed by two agreements concluded with the French Government—one on the utilization of the Guiana Space Centre, the other on the Ensemble de Lancement Ariane (ELA) launch site—supplemented by various agreements on the Ariane downrange stations, which track the launcher's trajectory.

2. When the relevant conditions had been fulfilled, ESA deposited a Declaration of Acceptance[1] adopted by the ESA Council on 12 December 1978, deposited on 2 January 1979, concerning the following legal instruments: Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (General Assembly resolution 2345 (XXII), annex), the Convention on International Liability for Damage Caused by Space Objects (resolution 2777 (XVI), annex), and the Convention on Registration of Objects Launched in Outer Space (resolution 3235 (XXIX), annex).

3. The Agency fulfils some of the criteria in the Registration Convention defining a "launching State": utilization of its facilities, performance of launches by itself for its own satellites that it has designed and developed or by a commercial company such as Arianespace from the Guiana Space Centre or from another launch site (e.g. Baikonur for the launch of the Integral satellite).

[1] The Declaration of Acceptance furnished to the Office for Outer Space Affairs by ESA will be made available to the Legal Subcommittee at its forty-third session.

4. It is worth recalling that, prior to the aforementioned Declaration of Acceptance, launches of European Space Research Organization (ESRO) space objects were reported to the Secretary-General via the French Government pursuant to General Assembly resolution 1721 B (XVI) of 20 December 1961.

2. ESA register

5. The ESRO secretariat (the Legal Adviser) took the initial step of asking the United Nations Legal Counsel for clarification of the possibility of the Organization keeping such a register. Following the latter's reply that this was indeed possible, ESA (ESRO at the time) consequently opened a register, placed under the authority of the Director-General.

6. The task of keeping the ESA register was entrusted by the Director-General to the service otherwise dealing with notification of frequency allocation. That service collects the information required by article IV of the Registration Convention and communicates it to the ESA Legal Adviser, now the Head of Legal Affairs, who forwards it to the Office for Outer Space Affairs for publication purposes. The ESA register is not open to the public, but obviously delegations have access to and can discuss its content.

7. The layout follows the content of article IV of the Registration Convention. Nevertheless, a specific question arose concerning the jurisdiction and control of the space object, under the Spacelab Agreement between the United States of America and the ESRO member States, with Europe's participation in the United States post-Apollo programme as to whether Spacelab was a "space object" subject to registration and, if so, by which European State (drawing on the Shuttle's resources, it was not considered by the United States authorities as subject to registration). The issue arises again with Europe's participation in the International Space Station programme (see the intergovernmental agreements of 1988 and 1992). In that case (which sets the precedent), the answer is provided by article 5 of the intergovernmental agreements, together with its annex listing the elements provided by each Partner. Thus, Europe retains jurisdiction and control over its elements, whether attached to the International Space Station or not, these currently being the Columbus Orbital Facility module and the Automated Transfer Vehicle. Similarly, Canada's robot arm is considered a space object, subject to registration, by Canada. Concerning which ESA member State should be recorded as the "State of registry", ESA's deliberative bodies took the view that the issue should be addressed case by case. Thus, this item in the register is now left blank. The general principle adopted with the Agency's consent and reflected in cooperation agreements is that the registration is done by the Agency acting on behalf of its member States.

8. In practice, ESA enters in its register the space objects developed and launched under its authority (whether from Kourou or not), namely, satellites (science or other applications); and, concerning the Ariane launcher, its third stage and vehicle equipment bay. For commercial launches contracted for example to Arianespace, the Agency registers the satellite developed, funded by its resources and launched under contract. The launch contract requires the customer (here ESA) to take care of registration. This requirement is spelled out in various cooperation agreements (memorandums of understanding) concluded by ESA, for example, with NASA and the Russian Space Agency (Rosaviakosmos).

9. Entry in the ESA register takes place after the launch and may depend on certain events, such as the satellite functioning properly (see the case of Artemis) and whether it has reached the target altitude and the transponders are all operational—an issue that could give rise to recovery operations.

10. The register may include other information that will be forwarded to the Office for Outer Space Affairs, such as a fuller description of the mission, the orbit parameters, the frequencies used and finally the end of operational life of a satellite consigned to a graveyard orbit.

11. In addition, ESA keeps a record of objects in space, after launch, that will now include items of space debris.

12. An attempt has been made over recent years to convert that practice into an internal instruction, but an end result has not for the time being materialized.

13. The latest notification entries show that ESA has improved the identification of a space object's mission and the completion of the frequency plan. The information to be entered in the register could be extended to include data on crewed space objects, propulsion systems, radioisotope thermocouple generator presence, thermo-electrics and/or their return.

14. It should also be noted that, pursuant to a bilateral agreement, ESA has included satellites (Marecs, Eutelsat) of the European Telecommunications Satellite Organization (EUTELSAT) on its register.

3. Relations with the Office for Outer Space Affairs

15. The Office for Outer Space Affairs publishes the information communicated by ESA (this may concern several satellites or updates).

16. Information already provided by ESA can be found in the following documents: ST/SG/SER.E/31, ST/SG/SER.E/51, ST/SG/SER.E/61, ST/SG/SER.E/73, ST/SG/SER.E/85, ST/SG/SER.E/86, ST/SG/SER.E/93, ST/SG/SER.E/95, ST/SG/SER.E/100, ST/SG/SER.E/112, ST/SG/SER.E/115, ST/SG/SER.E/130, ST/SG/SER.E/132, ST/SG/SER.E/187, ST/SG/SER.E/188, ST/SG/SER.E/266, ST/SG/SER.E/285, ST/SG/SER.E/303, ST/SG/SER.E/375, ST/SG/SER.E/432 and ST/SG/SER.E/443.