The Outer Space Legal Regime and UN Register of Space Objects

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Legal Regime of Outer Space and Registration

Outer Space Treaty

Article VI “International responsibility”

Article VII “International liability”

Article VIII “Jurisdiction and control”

Liability Convention

Article II “Absolute liability”

Article III “Fault liability”

Article IV “Joint and several liability”

Registration Convention

Preamble

Article I “Definitions” (LIAB Art. I)

Articles II, III, IV (fundamental registration requirements)

Rescue Agreement, NPS Principles, GA resolution 59/115, 62/101 and 68/74, COPUOS debris mitigation guidelines, Safety Framework on NPS

Status of the Registration Convention

- **As of December 2014, there are 62 States Parties and 4 Signatory States:**
  - Algeria, Antigua and Barbuda, Argentina, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Burundi (Signature only), Canada, Chile, China, Colombia, Costa Rica, Cuba, Cyprus, Czech Republic, Democratic People's Republic of Korea, Denmark, France, Germany, Greece, Hungary, India, Indonesia, Islamic Republic of Iran (S), Italy, Japan, Kazakhstan, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Mexico, Mongolia, Montenegro, Morocco, Netherlands, Nicaragua (S), Niger, Nigeria, Norway, Pakistan, Peru, Poland, Qatar, Republic of Korea, Russian Federation, Saint Vincent and the Grenadines, Saudi Arabia, Serbia, Seychelles, Singapore (S), Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay.

- **Three international intergovernmental organizations have declared their acceptance of rights and obligations:**
  - European Space Agency (ESA);
  - European Organization for the Exploitation of Meteorological Satellites (EUMETSAT);
  - European Telecommunications Satellite Organization (EUTELSAT-IGO).

Some figures

- "Resolution Register" established in 1961 in accordance with GA resolution 1721 B (XVI) of 20 December 1961. To date 427 documents issued containing registration data on nearly 6,000 space objects (series A/AC.105/INF/…)

- "Convention Register" established in 1976 under the Registration Convention. To date 730 documents issued containing registration data on nearly 8,000 space objects (series ST/SG/SER.E/…).

- Since 1957, over 40,000 space objects have been tracked in Earth orbit or beyond. Over 7,000 are "functional" (satellites, probes, manned spacecraft and space station components). Remaining are "non-functional" (rocket boosters, shrouds and detached components or other residual components resulting from the launch, operation or termination of the space object). Presently, approximately 3,900 functional (or previously functional space objects) remain in Earth orbit or beyond.

- Approximately 90% of all functional space objects (satellites, probes/landers, manned spacecraft, space station components etc.) have been registered with the Secretary-General of the United Nations.

- 24 States Parties to REG have notified the Secretary-General of the establishment of national registries. ESA and EUMETSAT have also notified. The following States have used OOSA registration template: Algeria, Austria, Azerbaijan, China, Denmark, Germany, Japan, Poland, South Africa, Sweden, Turkey and the United Kingdom. ESA also uses the template.

Function of the United Nations Register on Objects Launched into Outer Space

The main function of the Register is:

- Establish link between launching State and space object;
- To make provision for the national registration by launching States of objects launched into outer space (REG Preamble; REG Article II – OST Article VIII);
- To serve as a central register of objects launched into outer space (REG Article III);
- To provide for State parties additional means and procedures to assist in the identification of space objects (REG Article IV – Article VI)
- To provide data needed for the implementation and application of other treaties (REG Preamble – OST, ARRA, LIAB)

Handout on operation of small and very small satellites (UNOOSA and ITU)

- Registration, authorization, space debris mitigation, frequency management for the benefit of space actors intending to operate small and very small satellites
- Information specifically on registration:
  - Only one State of registry should exist for a particular satellite
  - Only registration information provided by Diplomatic Missions accredited to the United Nations will be considered valid registration submissions
  - Registration information provided directly by national agencies, private corporations, academic institutions or individuals will not be considered valid registration submissions
  - Types of information (REG Article IV and resolution 62/101) and space object registration form

Practices and developments

General Assembly resolution 62/101 of 17 December 2007 on "Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects", inter alia:

- Harmonization of practices and uniformity in information exchange
- GSO location, change of status in operation, date of decay or re-entry, date and physical condition of moving a space object to a disposal orbit
- Determination of State of registry, separate registration in case of joint launches
- Launch service provider to advise owner and/or operator to address the appropriate State on the registration
- Providing information on date of change in supervision, the identification of the new owner or operator, any change of orbital position, any change of function of the space object

Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities (A/68/189), inter alia:

- Information on orbital parameters and potential orbital conjunctions
- Notifications on scheduled manoeuvres that may result in risk to the flight safety of other space objects
- Notifications and monitoring of uncontrolled high-risk re-entry events
- Notifications in the case of emergency situations

UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

Registration Information Submission Form (as at 1 January 2009)

Note: This form is available from http://www.unoosa.org/oosa/SORegister/resources.html. Please see annex for instructions and definitions. Completed forms should be sent by hardcopy through Permanent Missions to UNOOSA **and** electronically to soregister@unoosa.org.

Part A: Information provided in conformity with the Registration Convention or General Assembly resolution 1721 B (XVI)

New registration of space object	**Yes** ☐	Check box
Additional information for previously registered space object (see below for reference sources)	**Submitted under the Convention: ST/SG/SER.E/** _____ **Submitted under resolution 1721B: A/AC.105/INF.** _____	UN document number in which previous registration data was distributed to Member States

Launching State/ States / international intergovernmental organization		
State of registry or international intergovernmental organization		Under the Registration Convention, only one State of registry can exist for a space object. Please see annex.
Other launching States (where applicable. Please see attached notes.)		

Designator		
Name		
COSPAR international designator (see below for reference sources)		
National designator/ registration number as used by State of registry		

Date and territory or location of launch		
Date of launch (hours, minutes, seconds optional)	dd/mm/yyyy hrs min sec	Coordinated Universal Time (UTC)
Territory or location of launch (see below for reference sources)		

Basic orbital parameters		
Nodal period		minutes
Inclination		degrees
Apogee		kilometres
Perigee		kilometres

General function	
General function of space object (if more space is required, please include text in a separate MSWord document)	

Change of status		
Date of decay/ reentry/ deorbit (hours, minutes, seconds optional)	dd/mm/yyyy hrs min sec	Coordinated Universal Time (UTC)

Sources of information	
UN registration documents	http://www.unoosa.org/oosa/SORegister/docsstatidx.html
COSPAR international designators	http://nssdc.gsfc.nasa.gov/spacewarn/
Text of the Registration Convention and resolution 1721 B (XVI)	http://www.unoosa.org/oosa/SORegister/resources.html
Global launch locations	http://www.unoosa.org/oosa/SORegister/resources.html
Online Index of Objects Launched into Outer Space	http://www.unoosa.org/oosa/osoindex.html

UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

Part B: Additional information for use in the United Nations Register of Objects Launched into Outer Space, as recommended in General Assembly resolution 62/101

Change of status in operations		
Date when space object is no longer functional (hours, minutes, seconds optional)	dd/mm/yyyy hrs min sec	Coordinated Universal Time (UTC)
Date when space object is moved to a disposal orbit (hours, minutes, seconds optional)	dd/mm/yyyy hrs min sec	Coordinated Universal Time (UTC)
Physical conditions when space object is moved to a disposal orbit (see COPUOS Space Debris Mitigation Guidelines)		

Basic orbital parameters		
Geostationary position (where applicable, planned/actual)		degrees East

Additional information		
Web-site:		

Part C: Information relating to the change of supervision of a space object, as recommended in General Assembly resolution 62/101

Change of supervision of the space object		
Date of change in supervision (hours, minutes, seconds optional)	dd/mm/yyyy hrs min sec	Coordinated Universal Time (UTC)
Identity of the new owner or operator		
Change of orbital position		
Previous orbital position		degrees East
New orbital position		degrees East
Change of function of the space object		

Part D: Additional voluntary information for use in the United Nations Register of Objects Launched into Outer Space

Basic information	
Space object owner or operator	
Launch vehicle	
Celestial body space object is orbiting (if not Earth, please specify)	
Other information (information that the State of registry may wish to furnish to the United Nations)	

Sources of information	
General Assembly resolution 62/101	http://www.unoosa.org/oosa/SORegister/resources.html
COPUOS Space Debris Mitigation Guidelines	http://www.unoosa.org/oosa/SORegister/resources.html
Texts of the Registration Convention and relevant resolutions	http://www.unoosa.org/oosa/SORegister/resources.html

Annex

Section A. Instructions for completing the form

1. Download the electronic version of the form from http://www.unoosa.org/oosa/SORegister/resources.html.
2. Reference sources and other resources for completion of the form are available from the above web-link.
3. Review definitions in Section B below and complete the form. If there are any queries, please email soregister@unoosa.org.
4. The **completed hardcopy form** should be sent through official government channels to the relevant Permanent Mission to the United Nations (Vienna) to be formally transmitted to the United Nations.
5. The **completed electronic form** should be sent by the appropriate government entity to the United Nations Office for Outer Space Affairs using email soregister@unoosa.org.

Section B. Definition of terms

Part A: Information provided in conformity with the Registration Convention or General Assembly resolution 1721B (XVI)

Launching State/ States / international intergovernmental organization

State of registry/ international intergovernmental organization:	The State of registry is the launching State which carries the space object on its national registry of objects launched into outer space. The international intergovernmental organization is an organization which has declared its acceptance of the rights and obligations provided for in accordance with Article VII of the Registration Convention. **Note:** In accordance with Article II of the Registration Convention, **only one State of registry can exist for a space object**. When more than one launching State exists, they should jointly determine which State should register the space object.
Other Launching States:	As defined in the Registration Convention, "launching State" means: (i) A State which launches or procures the launching of a space object; (ii) A State from whose territory or facility a space object is launched;

Designator

Name:	The common name/names used to identify the space object.
COSPAR international designator:	Alphanumeric designator assigned by the Committee on Space Research (COSPAR) to space objects that successfully reach Earth orbit or beyond. The SPACEWARN Bulletin (available at http://nssdc.gsfc.nasa.gov/spacewarn) confirms the designators assigned by the World Warning Agency for Satellites on behalf of COSPAR. The designator can also be obtained from the Online Index of Objects Launched into Outer Space at http://www.unoosa.org/oosa/osoindex.html
National designator/ registration number:	Designator or registration number assigned to a space object by the State of registry.

Date and territory or location of launch

Date of launch:	The date of launch of the space object using Coordinated Universal Time (UTC) (also referred to as Greenwich Mean Time (GMT)).
Territory or location of launch:	The territory or location of the launch of the space object. For a table of global launch locations, see http://www.unoosa.org/oosa/SORegister/resources.html.

Basic orbital parameters: Basic data on the space object's orbit around the Earth or a celestial body such as the Sun, Moon, etc. If object is orbiting a body other than Earth, please specify. The parameters are:

Nodal period:	Time taken by the space object to complete one revolution around the body it is orbiting.
Inclination:	The angle relative to the equator of the Earth or celestial body the space object is orbiting. Measured counter-clockwise from the equator.
Apogee:	The furthest distance in the space object's orbit from the surface of the body it is orbiting.
Perigee:	The closest distance in the space object's orbit from the surface of the body it is orbiting.
General function:	General information on the space object. Can include mission objectives, frequency plans, etc. If required, please attach text in a separate page.
Change of Status:	The date of the space object's decay, reentry, recovery, deorbit or landing.

UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

Part B: Additional information for use in the United Nations Register of Objects Launched into Outer Space, as specified in General Assembly resolution 62/101

Change of status in operations

Date when space object is no longer functional:	The date using Coordinated Universal Time (UTC) (also referred to as Greenwich Mean Time (GMT)) when the space object ceases to perform operational functions for the State of registry.
Date when space object is moved to a disposal orbit:	The date using Coordinated Universal Time (UTC) when the space object is moved into a disposal orbit. See COPUOS Space Debris Mitigation Guidelines for recommendations on disposal orbits, http://www.unoosa.org/oosa/SORegister/resources.html.
Physical conditions when space object is moved to a disposal orbit:	The physical conditions when the space object is moved into a disposal orbit. Conditions can include the change in orbit (eg. +300 km above GSO), passivation of the space object and other measures as recommended in the COPUOS Space Debris Mitigation Guidelines.

Basic orbital parameters

Geostationary position:	Applicable only to space objects in the geostationary orbit. Planned and/or actual location of space object in ± degrees East along the equator from the Greenwich meridian (eg. for 10.5 degrees West, use -10.5 degrees East).

Additional Information

Web-site:	Address on the World Wide Web for information on the space object/mission/operator.

Part C: Information relating to the change of supervision of a space object, as recommended in General Assembly resolution 62/101

Change of supervision of the space object

Date of change in supervision:	The date using Coordinated Universal Time (UTC) (also referred to as Greenwich Mean Time (GMT)) when the new owner or operator takes supervision of the space object.
Identity of the new owner or operator:	The identity of the new owner or operator of the space object.

Change of orbital position in the geostationary orbit

Previous orbital position:	The previous operational location of the space object in ± degrees East along the equator from the Greenwich meridian.
New orbital position:	The new operational location of the space object in ± degrees East along the equator from the Greenwich meridian.
Change of function of the space object:	The function of the space object following change in supervision.

Part D: Additional voluntary information for use in the United Nations Register of Objects Launched into Outer Space

Basic information

Space object owner or operator:	The entity that owns or operates the space object.
Launch vehicle:	The launch vehicle used to launch the space object into Earth orbit or beyond.
Celestial body space object is orbiting:	The body that the space object is in orbit around, if not Earth (i.e. the Moon, the Sun, Mars, Jupiter, etc.) .
Other information:	Information relating to the space object that the State of registry may wish to furnish to the United Nations.

THANK YOU

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