Registration of Space Objects

Space Law Conference
8-10 December 2020

UNITED NATIONS
Office for Outer Space Affairs

Background

- Why registration?
  - Assist in their identification
  - Contribute to the application and development of international law

Preamble, Registration Convention

- Important for implementation of the other space treaties
- Facilitates transparency in the conduct of outer space activities

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Two pathways

- General Assembly resolution 1721B (XVI) of 20 December 1961 (non State Parties)
  - Voluntary
  - First registrations received in 1962

- Registration Convention which entered into force on 15 September 1976 (State Parties)
  - Mandatory
  - First registrations received in 1977

Who registers?

- Article VI of the Outer Space Treaty (…activities of non-governmental entities ….require authorization and continuing supervision by the appropriate State Party.)
- Article VIII of the Outer Space Treaty (…State Party … on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object)
- Article II, paragraph 2 of the Registration Convention ([States] shall jointly determine which one of them shall register the object…..bearing in mind the provisions of article VIII of the [Outer Space Treaty])
- Multi-State
  - issues of liability and registration usually are part of cooperative agreements
- State practice (in general)
  - register space objects launched/operated by private companies incorporated within that State's territory

How to register: national space object registry

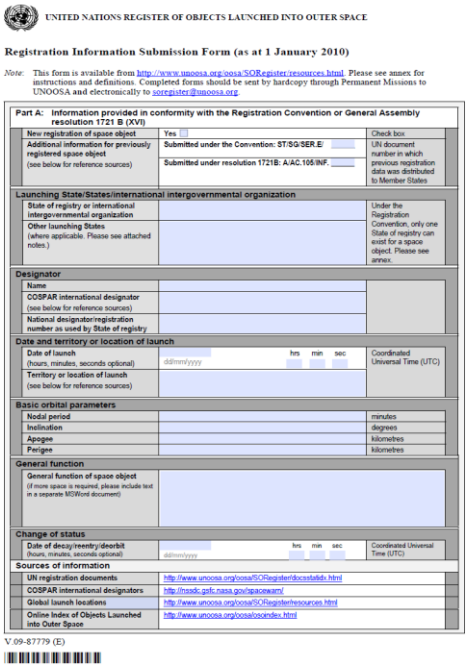
- Establish a national space object registry
- Maintenance?
  - Depends on the State:
    - National Space Agency
    - Ministry of External Relations/Foreign Affairs
    - Ministry of Business/Economy
    - Other entities
- Other issues to consider
  - Open access or restricted?
  - Link to a satellite permit/licensing regime?

How to register: national space object registry

- Level?
  - Enactment through national legislation or an executive decree/order?
- Notification of establishment
  - Secretary-General of the UN
- Non-parties
  - Not required but recommended

How to register: submission of information to the SG

- Mechanism:
  - Sent by: Permanent Mission accredited to the United Nations addressed to the SG of UN
  - Send to: UNOOSA (email/hardcopy)
    - Can use the registration form developed by UNOOSA {OR}
    - Own form to provide technical information on their space objects
- Language:
  - Any of following: Arabic, Chinese, English, French, Spanish and Russian



UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

Registration Information Submission Form (as at 1 January 2010)

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/ ____	UN document number in which previous registration data was distributed to Member States
	Submitted under resolution 1721B: A/AC.105/INF. ____	
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/docstatlists.html	
COSPAR international designators	http://nssdc.gsfc.nasa.gov/spacewarn/	
Global launch locations	http://www.unoosa.org/oosa/SORegister/resources.html	
Online Index of Objects Launched into Outer Space	http://www.unoosa.org/oosa/oosaindex.html	

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What to register

- 1721B (XVI) does not specify
  - Can provide information comparable to that required under the Registration Convention
- Article IV, Registration Convention
  - name of launching State or States
  - an appropriate designator of the space object or its registration number
  - date and territory or location of launch
  - basic orbital parameters, including nodal period, inclination, apogee & perigee
  - general function of the space object
  - additional information chosen by the State of registry
- Plus
  - Notify SG when a registered space object is no longer in Earth orbit.

When to register

- Register soon after launch with initial orbit?
- Register after satellite has reached operational orbit?
- Register soon after launch with intended operational orbit?

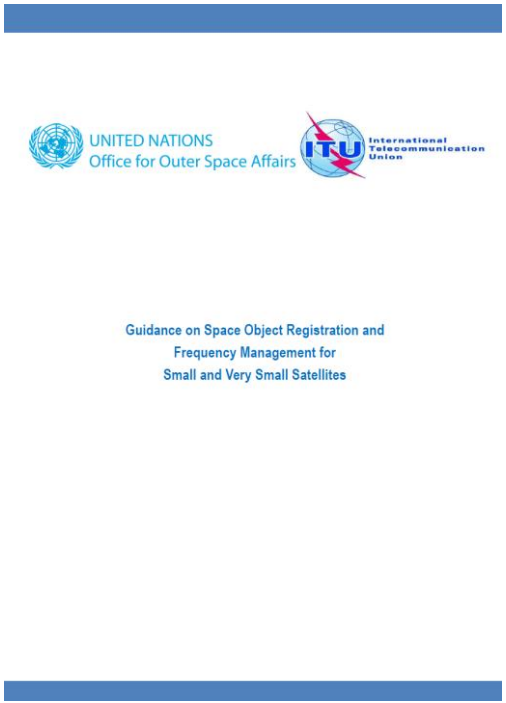
- UNOOSA recommendation:
  - As soon as possible after launch providing intended operational orbit
  - If operational orbit is not achieved, an additional notification can be made later

UN Secretariat's registration process

- What happens after submission?
  - Origin validation
  - Data verification
  - Data entered in the Register and the Online Index of Objects Launched into Outer Space.
  - Submission is edited and translated into all six official languages of the United Nations.
  - Public dissemination

Resources

- **UNOOSA/ITU Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites**
  - See under Space Object Register resources: www.unoosa.org
- Registration submissions by Parties
- Information Submission Form
- Texts of UN Treaties, Principles and Resolutions
- Status of ratification of the Treaties (updated annually)
- Collection of national space legislation from 26 Member States



Resources: Online Index

- Web-based tool
- Fusion of official and unofficial data
  - All registered and unregistered functional space objects from 1957 to present
- Each space object record contains (when available) information from the State of registry:
  - Initial registration document; documents containing additional information; document containing date of decay/re-entry/deorbit
  - Links to documents by other States containing information related to the space object
- Searchable (by name, international designator, launching State, date of launch, orbital status, etc.)

http://www.unoosa.org/oosa/osoindex/index.jspx

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Registration Convention

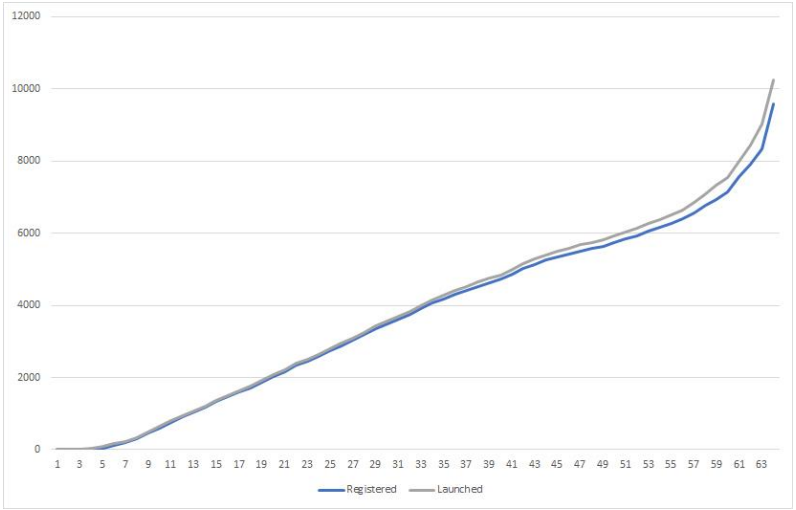
- Status as of 1 December 2020:
  - 69 States Parties
  - 3 Signatories
  - 4 IGOs: ESA, EUMETSAT, EUTELSAT & INTERSPUTNIK.
- Most recent State Party: Slovenia
- Number of African States Parties: 6

Dashboard: African States

- States that have space objects: approx. **10**
- States that have registered space objects: **6**
- States submitting under the Registration Convention: **2**
- States submitting information under resolution 1721B (XVI): **4**
- Most recent registration submissions received under resolution 1721B (XVI):
  - Ethiopia for the Ethiopian Remote Sensing Satellite 1 (ETRSS-1)
  - Egypt for the Tiba-1 geostationary communications satellite

Registration dashboard

- Total functional objects launched: over. 10,100
  - Total registered: approx. 87%
- In 2020, UNOOSA has processed registration data on over **1,100** satellites
- Space objects on deep space/planetary missions ✔
- Nuclear powered satellites ✔
- Crewed spacecraft ✔
- Space station flight elements ✔
- Military/national security satellites ✔
- Satellites that fail after entering orbit ✔



Thank you

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