



UNITED NATIONS  
Office for Outer Space Affairs

United Nations/Brazil Symposium on  
Basic Space Technology  
11-14 September 2018

# Registration of Space Objects with the United Nations

**NATERCIA RODRIGUES**

United Nations Office for Outer Space Affairs  
[www.unoosa.org](http://www.unoosa.org)



- When a space object is launched into Earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. [RegCon Art II]
- Each State of Registry shall furnish to the Secretary-General of the United Nations, as soon as practicable, the following information concerning each space object carried on its registry: ... [RegCon Art IV]



## Historical Overview

### 1961 (resolution 1721B)

- first call to States launching objects into orbit to furnish information for registration
- first public registry space established
- still a means for non-parties to the Registration Convention

### 1976 Convention on Registration of Objects Launched into Outer Space

- Expanded on Resolution 1721B (XVI) and the Outer Space Treaty
- Established under treaty the United Nations Register of Objects Launched into Outer Space



# Why registration?

## 1967: Outer Space Treaty

### Article VI:

- A State “shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities”
- A State shall assure “that national activities are carried out in conformity with the provisions set forth in the present Treaty.”
- “The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty.

### Article VII:

- a State that launches or procures the launching of an object into outer space is “internationally liable for damage”



## 1967: Outer Space Treaty

### Article VIII:

- A State of registry shall “retain jurisdiction and control over such object”
- Ownership of object is “not affected by their presence in outer space or on a celestial body or by their return to the Earth”.
- Recovered space object should be “returned to that State Party” which is the State of registry.

## 1968: Rescue Agreement

- Expanded on Article V & VIII, Outer Space Treaty
- Article V: recovery and return of space objects

## 1972: Liability Convention

- Expanded on Article VII, Outer Space Treaty: States internationally liable for damage

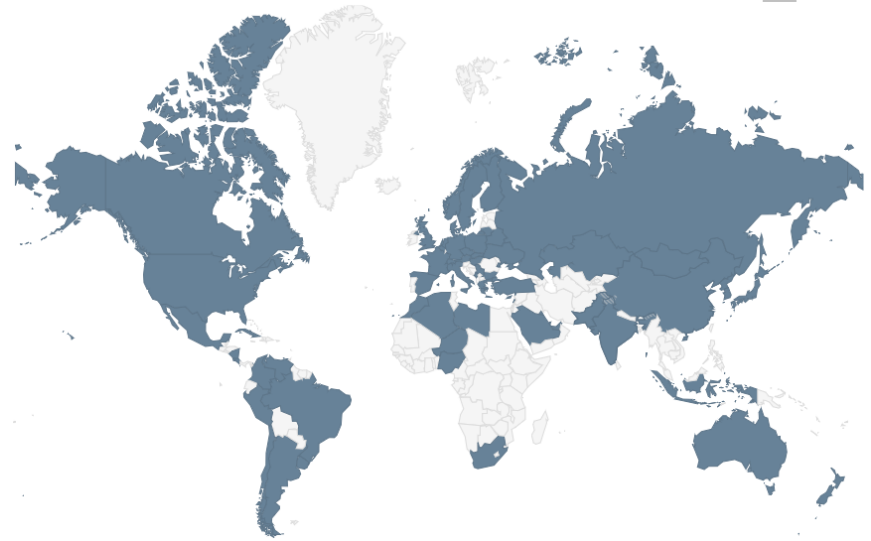


	OST	Liability	REGCON		OST	Liability	REGCON
Argentina	✓	✓	✓	Kenya	✓	✓	
Bolivia	S		1721B	Mexico	✓	✓	✓
Brazil	✓	✓	✓	Nigeria	✓	✓	✓
Bulgaria	✓	✓	✓	Paraguay	✓		
Chile	✓	✓	✓	Peru	✓	✓	✓
China	✓	✓	✓	Republic of Korea	✓	✓	✓
Colombia	S	S	✓	South Africa	✓	✓	✓
Costa Rica		S	✓	Spain	✓	✓	✓
Germany	✓	✓	✓	Sudan			
Guatemala		S		Tunisia	✓	✓	
India	✓	✓	✓	Turkey	✓	✓	✓
Italy	✓	✓	✓	Ukraine	✓	✓	✓
Japan	✓	✓	✓	United Kingdom	✓	✓	✓
				United States	✓	✓	✓



## Registration Convention

- Built upon resolution 1721B (XVI)
- In force since 15 September 1976.
- **67 States Parties** and 3 Signatories.
- New Zealand, January 2018.
- ESA, EUMETSAT, EUTELSAT & INTERSPUTNIK declared acceptance





## Registration of Space Objects: Status

- Since the establishment of the first UN Register in 1961:
  - functional space objects presently in Earth orbit → 90% registered
  - functional space objects that were in Earth orbit → 96% registered
  - functional space objects that are/were in GSO → 87% registered
  - functional space objects that are in LEO/MEO → 90% registered.
- Space objects on deep space/planetary missions: registered
- All space objects carrying nuclear power sources: registered
- Crewed spacecraft are customarily registered.
- Space station flight elements (including modules and robotic arms): registered





## Registration Practices

- Information on their functional space objects → All States
- Information on non-functional space objects All States → Some States (launch service providers)
- Information on when their space objects cease to exist in orbit → Most States
- Information on the geostationary position of functional space objects → Most States
  
- Since 2007, more States provide information on:
  - Transfer of ownership/supervision
  - Mission termination
  - In-orbit disposal (transfer to graveyard orbit)
  - Estimated re-entry of space objects



## Multiple launching States

“Launching State”:

- A State which launches or procures the launching of a space object
- A State from whose territory or facility a space object is launched

Article II

- Multiple launching States: “shall jointly determine which one of them shall register the object”

“How”?

In most cases, the “home” State of the space object operator is expected to register

- Launch service providers generally do not register foreign satellites
- Global mission? The foreign State of the organizing entity **may** register (Art II agreement)



## Examples

- LituanicaSat-1
  - US Cygnus cargo craft → ISS
  - Japanese Kibo module → deployed
  - Lithuania → registered
- ZA AEROSAT
  - Stellenbosch University, South Africa
  - US Cygnus cargo craft → ISS
  - Japanese Kibo module → deployed
  - Belgium → registered (organizer of the QB50 programme)



## Misconceptions

- Military/national security functions → registered
- Failure after orbit entry → registered
- Failure or are deactivation before are registered → still have to be registered
- Re-enter the Earth's atmosphere before registered → still have to be registered
  
- Satellite operators (even national space agencies) can directly register their satellites with UNOOSA → No
  - Appropriate governmental channels
- Not a Party to the Registration Convention?
  - Register under General Assembly resolution 1721B (XVI)
  - Voluntary



## What can a smallsat developer do to get their satellite registered?

- Be aware of your State's international legal obligations
- Inform your national space/science/telecommunications governmental organization of your project
- Make sure you are in compliance with national regulations
- Inform UNOOSA of your project
  - Technical advice
  - Back-channel with your diplomatic mission to support satellite registration



## More information?

- UNOOSA's website  
<http://www.unoosa.org/oosa/en/spaceobjectregister/resources/index.html>
  - United Nations Register of Objects Launched into Outer Space
  - Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites, prepared by UNOOSA and ITU
  - Online Index of Objects Launched into Outer Space
  - Registration Information Submission Form (recommended template)
  - Texts of Treaties, Principles, Resolutions and Regulations
  - Registration submissions by Parties to the Registration Convention and General Assembly resolution 1721 B (XVI).



## Online Index

- Web-based tool
- Allows States to identify whether a space objects has been registered and who is the State of registry
- Fusion of official and unofficial data
  - Registered and unregistered satellites/probes/spacecraft/space station flight elements from 1957 to present
- Functional space objects only
  - Space debris and non-functional objects are not included.
- Each record contains (when available)
  - Information received from the State of registry
    - Initial registration document (Article IV, para. 1)
    - Documents containing additional information (Article IV, para.2)
    - Document containing date of decay/re-entry/deorbit (Article IV, para.3)



## Online Index

- Documents by other States (link)
  - information related to the space object provided (i.e. mentioned in a State providing launch services)
- Document by States under other treaties and principles (Outer Space Treaty, Rescue Agreement, NPS Principles) (link)
- Search function
  - Parametres: name, international designator, launching State, date of launch, orbital status, etc.

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