



UNITED NATIONS
Office for Outer Space Affairs



International
Telecommunication
Union

Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites

Introduction

Small satellites and their applications have opened the door for many countries and their governmental and non-governmental organizations, including universities, education and research institutes and private industry, with limited funds for space activities to join in the exploration and the peaceful uses of outer space and to become developers of space technology.

Satellites may be grouped into different categories based on their mass (for example, mini satellites <1000 kg, micro satellites < 100 kg, nano satellites < 10 kg, pico satellites < 1 kg, femto satellites < 0,1 kg). However, as of today, there is no consensus or universally accepted standard on the definition of a small or very small satellite. A small satellite is not necessarily physically small as it may have deployable structures, it is not necessarily low-weight and neither does it have to be less complex or less capable compared to a satellite that is not considered to be small. Typical characteristics of small satellite missions include: a) reasonably short development times; b) relatively small development teams; c) modest development and testing infrastructure requirements; and d) affordable development and operation costs for the developers, in other terms “faster, cheaper and smaller”.

Some other characteristics often seen in small satellite missions are: a) they often involve actors new to space activities mainly non-governmental actors (academic institutions, private companies etc.); b) for various reasons, very often due to inexperience or unfamiliarity with the national and international regulatory framework, they are not always conducted in full compliance with international obligations, regulations and relevant voluntary guidelines (authorization, supervision, registration, ITU radio regulations, space debris mitigation guidelines etc.); and c) they have raised concerns to worsening the space debris situation.

For the launch and operation of satellites, certain requirements under international law exist. These include:

1. Notification and recording of the radio frequencies used by a satellite at the International Telecommunications Union (ITU);
2. Consideration of space debris mitigation measures in the design and operation of a satellite;
3. Registration of a satellite with the Secretary-General of the United Nations.

Presently, a legal or regulatory definition of a small satellite does not exist. The information in this handout relates to all satellites, including small and very small satellites. Under the United Nations treaties, principles and resolutions relating to international space law, the term “space object” refers to satellites, launch vehicles and their component parts.

The ITU Radio Regulations refers to spacecraft (RR No. 1.178) as “a man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere”; also to satellite (RR No. 1.179) as “a body which revolves around another body of preponderant mass and which has a motion primarily and permanently determined by the force of attraction of that other body”.

This handout serves as a guideline for small satellite developers and operators on issues related to registration, authorization, debris mitigation and frequency management of small and very small satellites.

International legal regime relating to space activities and space objects

Legal issues relating to responsibility and liability at a national and international level should be considered at the “Project Definition” stage of a satellite mission design process.

Under the provisions of the 1967 Outer Space Treaty¹, a State bears “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 is also required to authorize and continually supervise the space activities of non-governmental entities.² In addition, a State is “internationally liable” for damage caused by a space object that it launches or procures the launching of or from whose territory or facility an object is launched.³ The issues of liability for damage caused by space objects are expanded upon in the 1972 “Liability Convention”.⁴

When a space object is launched into Earth orbit or beyond, a State is required to register it with the Secretary-General of the United Nations under the 1976 “Registration Convention” or in accordance with General Assembly resolution 1721B (XVI).⁵

For a list of Parties to the Outer Space Treaty, Liability Convention and Registration Convention, see the [UNOOSA website](#).

Authorization, implementation of space debris mitigation measures and space object registration

Authorization/licensing of satellite missions

Depending on national legislation, satellite missions may require licensing/authorization by a national authority. This agency may be the national radio-telecommunications regulatory entity, the national

1 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, see [UNOOSA website](#).

2 Article VI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies

3 Article VII of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies

4 Convention on International Liability for Damage Caused by Space Objects, see [UNOOSA website](#).

5 Convention on Registration of Objects Launched into Outer Space, see [UNOOSA website](#).

space agency or the national science and technology entity. For a list of online national legislation relating to space activities, see the [UNOOSA website](#).

General Assembly resolution 68/74 of 11 December 2013 “Recommendations on national legislation relevant to the peaceful exploration and use of outer space”, provides elements for consideration, as appropriate, by States when enacting regulatory frameworks for national space activities, in accordance with their national law, taking into account their specific needs and requirements. The resolution covers the scope of space activities targeted by regulatory frameworks; national jurisdiction for regulating the space activities of governmental and non-governmental entities; procedures for authorization and licensing of national space activities, including to ensure continuing supervision and monitoring of authorized space activities; registration of objects launched into outer space and establishment of national registries; liability and indemnifications procedures; and procedures with regard to the change in status of the operation of a space object in orbit.

Space debris mitigation measures

As part of the authorization mechanism, national authorities may also require implementation of space debris mitigation measures based on national standards and/or on the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space ([ST/SPACE/49](#)). For a compendium of national space debris mitigation standards, see the [UNOOSA website](#). This compendium and the resources on the dedicated webpage of the website of the Office for Outer Space Affairs, serves as a collection of relevant regulative information provided by States and international intergovernmental organizations, as well as relevant international instruments.

Implementation of space debris mitigation measures should be considered at the “Preliminary Design Review” stage, especially for missions that require deorbiting/passivation of onboard systems during the mission termination phase.

As agreed by the General Assembly in its resolution 62/217 of 22 December 2007, the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space reflect the existing practices as developed by a number of national and international organizations. From a technical point of view, the guidelines are applicable to mission planning and the operation of newly designed spacecraft and orbital stages and, if possible, to existing ones. There is a total of seven guidelines: a) to limit debris released during nominal spacecraft/orbital stages operations; b) to minimize the potential for break-ups during operational phases; c) to limit the probability of accidental collision in orbit; d) to avoid intentional destruction and other harmful activities; e) to minimize the potential for post-mission break-ups resulting from stored energy; and f) & g) to limit the long-term presence of spacecraft and launch vehicle orbital stages in the low-Earth orbit (LEO) region/geosynchronous Earth orbit (GEO) region after the end of their mission. The guidelines are not legally binding under international law. Through resolution 62/217 the Assembly invites Member States to implement those voluntary guidelines through relevant national mechanisms, to the greatest extent feasible, and through space debris mitigation practices and procedures.

Space object registration

The Registration Convention requires that when a satellite is launched into Earth orbit or beyond, the State of registry shall provide relevant information to the Secretary-General of the United Nations for entry in the United Nations Register of Objects Launched into Outer Space. The term State of registry means a launching State on whose registry a space object is carried in accordance with Article II of the Registration Convention. Article II stipulates conditions for when a launching State is to be considered a State of registry. The registration of a satellite may be part of a State's authorization/licensing mechanism.

If a State is not Party to the Registration Convention, meaning that it has not acceded to or ratified the Convention, it can voluntarily provide registration information on the space object under General Assembly resolution 1721B (XVI) of 20 December 1961.

In cases where a satellite mission uses "foreign" launch services or when there is more than one State involved in the mission, the Registration Convention requires that the involved States jointly determine which of them should be the State of registry. In general, States providing launch services do not register satellites launched on behalf of foreign clients.

Those requirements also apply to an international intergovernmental organization which conducts space activities and has declared its acceptance of the rights and obligations under the Registration Convention.

Note: Only one State of registry should exist for a particular satellite.

General Assembly resolution 68/74 stipulates in paragraph 6 that a national registry of objects launched into outer space should be maintained by an appropriate national authority; operators or owners of space objects for which the State is considered to be the launching State or the State responsible for national activities in outer space under the United Nations treaties on outer space should be requested to submit information to the authority to enable the State on whose registry such objects are carried to submit the relevant information to the Secretary-General of the United Nations in accordance with applicable international instruments, including the Registration Convention, and in consideration of General Assembly resolutions 1721B (XVI) and 62/101 of 17 December 2007; the State may also request information on any change in the main characteristics of space objects, in particular when they have become non-functional.

Procedure for registering a satellite with the Secretary-General of the United Nations

Upon launch of a satellite into Earth orbit or beyond, the national competent authority of the State of registry should send the relevant information to the Secretary-General through a Diplomatic Mission accredited to the United Nations.

IMPORTANT: Registration information submitted directly to the United Nations by national agencies, private corporations, academic institutions or individuals will not be considered valid submissions. Only information provided through Diplomatic Missions accredited to the United Nations will be considered valid registration submissions.

The information should be addressed to the Secretary-General of the United Nations and sent to:

Ms. Simonetta DI PIPPO
Director
United Nations Office for Outer Space Affairs
United Nations Office at Vienna
Wagramerstrasse 5
1220 Vienna
Austria

Fax: +43-1-26060-5830
Email: ooa@unvienna.org
soregister@unoosa.org

Types of information provided and United Nations space object registration form

Article IV, paragraph 1 of the Registration Convention requires specific information to be provided to the Secretary-General. In addition, Article IV, paragraph 2 allows the State of registry to provide additional information on a particular satellite. The 2007 General Assembly resolution 62/101 on “Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects” expands upon the types and formats of such additional information. Article IV, paragraph 3 requests that information on when a satellite is no longer in Earth orbit (date of decay/reentry) be provided.

To assist States submitting registration information, the Office has produced registration forms in all official languages of the United Nations (see [UNOOSA website](#)). The form indicates what information is required under the Registration Convention, recommended units of measure, additional information recommended in resolution 62/101 and other voluntarily information that will facilitate the use of the United Nations Register of Objects Launched into Outer Space. The registration form and its integrated annex with instructions and definition of terms is provided below for information purposes only.



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/docsstatidx.html		
COSPAR international designators	http://nssdc.gsfc.nasa.gov/spacwarn/		
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
Date when space object is moved to a disposal orbit (hours, minutes, seconds optional)	dd/mm/yyyy	hrs	min	sec
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				
Website:				
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
Identity of the new owner or operator				Coordinated Universal Time (UTC)
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 e-mail 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 e-mail 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 established by the Committee on Space Research (COSPAR) for 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/osindex.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.



UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE

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.

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:	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/osa/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 (e.g. +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 $\pm$ degrees East along the equator from the Greenwich meridian (e.g. for 10.5 degrees West, use -10.5 degrees East).
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Additional Information

Website:	Address on the World Wide Web for information on the space object/mission/operator.
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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 $\pm$ degrees East along the equator from the Greenwich meridian.
New orbital position:	The new operational location of the space object in $\pm$ 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.

Radio-frequency management

The rights and obligations of the Member States of ITU in the domain of international frequency management of the spectrum/orbit resource are incorporated in the Constitution (CS) and Convention (CV) [1] of the ITU and in the Radio Regulations (RR) [3] that complement them. These instruments contain the main principles and lay down the specific regulations governing the following major elements:

- frequency spectrum allocations to different categories of radiocommunication services;
- rights and obligations of member administrations in obtaining access to the spectrum/orbit resource;

For a list of all ITU legal and regulatory documents related to space service, see the ITU BR SSD website - <http://www.itu.int/ITU-R/go/space/en>

- international recognition of these rights by recording frequency assignments and, as appropriate, any associated orbits, including the geostationary-satellite orbits used or intended to be used in the Master International Frequency Register (MIFR).

The ultimate goal of the ITU RR regulations is to ensure an interference-free environment for the operation of the satellite network, whilst ensuring a rational, equitable, efficient and economical use of the radio-frequency spectrum and satellite-orbit resources.

The fact that the ITU CS and CV, and the Radio Regulations that complement them, are intergovernmental treaties ratified by governments - means that those governments shall undertake to:

- apply the provisions in their countries; and
- adopt adequate national legislation that includes, as the basic minimum, the essential provisions of this international treaty.

Depending on national legislation, the governmental authority responsible for radio-frequency management is typically the national radio-telecommunications regulatory entity. For more information see Preface (Space Services) [3] Table 1 and 12A&12B at: <http://www.itu.int/ITU-R/go/space-preface/en> and for a contact address of notifying administration for space services matters see: http://www.itu.int/online/mm/scripts/org_br_admin.list.

ITU RR and small satellites

There is no regulatory definition for small satellites in the ITU RR. The RR is recognizing only geostationary (GSO) and non-GSO satellites or systems. This outline text explains allocation of frequency bands to non-GSO satellites or systems and to specific radiocommunication service as described in the Article 5 of the RR. Sharing and protection and criteria for different non-GSO satellite services are contained in various ITU-R Recommendations⁶. These recommendations result from studies by the ITU-R Study Groups (SG)⁷ related to interference and sharing between different radiocommunication systems and services.

Geosynchronous satellite: An earth satellite whose period of revolution is equal to the period of rotation of the Earth about its axis. (RR No. 1.188)

Geostationary satellite: A geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth; by extension, a geosynchronous satellite which remains approximately fixed relative to the Earth. (RR No. 1.189)

Geostationary-satellite orbit: The orbit of a geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator. (No. 1.190)

The ITU Radio Regulations (RR)

Leading international Radio Regulatory instrument

The ITU RR is a binding intergovernmental treaty governing the use of spectrum/orbit resources by administrations, defining the rights and obligations of Member States in respect of the use of these resources with the goal of recording the frequency assignment in the Master International Frequency Register (MIFR) to obtain an international recognition. As a leading instrument in the international radio regulatory set-up, are based on the use of two main concepts:

- The concept of block allocations of frequencies that are intended for use by defined radio services -Table of Frequency Allocations (Table) as contained in Article 5 of the RR. This concept generally provides common frequency allocations to mutually compatible services operating with similar technical characteristics in specific parts of the spectrum. It also provides a stable planning environment for administrations, equipment manufacturers and users.

⁶ ITU-R Recommendations : <<http://www.itu.int/pub/R-REC>>

⁷ ITU-R Study Groups: <<http://www.itu.int/en/ITU-R/study-groups/>>

- The concept of voluntary or mandatory regulatory procedures (for coordination, notification and recording of frequency assignments in the Master International Frequency Register (MIFR)) adapted to the allocation structure.

Allocation structure and principles

The allocation structure (Article 5 of the RR) and associated principles represent a basis for the planning and implementation of radiocommunication services. The current approach is based on a block allocation methodology with footnotes. The regulated frequency band (8.3 kHz - 3 000 GHz) is segmented into smaller bands and allocated to over forty defined radiocommunication services (Article 1 of the RR). The radio services are identified as primary or secondary (the latter shall cause no harmful interference to, or claim protection from, the former) and footnotes are used to further specify how the frequencies are to be assigned or used. The Table is organized into three Regions of the world (see Figure 1).

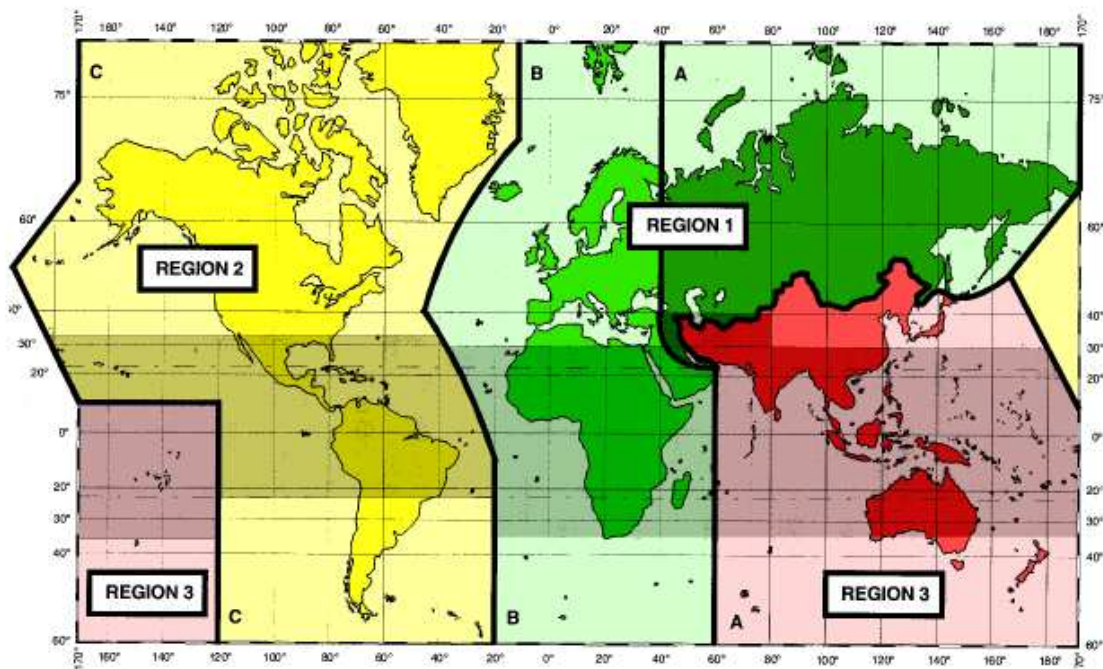


FIGURE 1: ITU Regions for purposes of frequency allocation of the RR

Basic principles related to use of the Table

Using the Table as a starting point, the frequency spectrum management authority of each country selects appropriate frequencies with a view to assigning them to stations of a given service. Before taking the final decision to assign a frequency to a station in a given radiocommunication service in a given frequency band and to issue an appropriate licence, the authority concerned should be aware of all other conditions regulating the use of frequencies in the band concerned, e.g.:

- Are there other mandatory RR provisions governing the use of the frequencies?
- Is there a need for effecting the coordination procedure prior to notification of the concerned assignment to the Radiocommunication Bureau (Bureau) or prior to its bringing into use?
- Is the procedure mandatory or voluntary? Is the procedure specified in the RR or in a special agreement?
- Is there a need to notify the frequency assignment to the Bureau, when should such notification be effected, which characteristics are to be notified, what action should be foreseen after the recording or otherwise of the frequency assignment concerned?

Regulatory principles and coordination procedures applicable for the filing of small satellite networks

The procedures for coordinating the use of frequencies

The procedures for coordinating the use of frequencies represent a basic component of the international radio regulatory framework, as they enable the implementation of new radiocommunication systems while avoiding harmful interference with regard to other existing and planned users.

The relevant procedures involve three basic steps:

- Advance Publication Information (API) (Section I, Article 9);
- Coordination (Section II of Article 9);
- Notification and recording in the MIFR (Article 11)

Please note: The Coordination procedure (Section II of Article 9) is applicable to the non-geostationary-small satellite networks only in the specific bands, where the requirement to coordinate is included in a footnote to the Table referring to provision No. **9.11A** – see the ITU Rules of Procedure at: <http://www.itu.int/pub/R-REG-ROP/en>.

Advance Publication of Information

The aim of the API procedure prescribed under Section I of Article 9 of the RR is to inform all administrations of any planned satellite system using a GSO or a non-GSO satellite and of its general description. This mandatory ('starting a clock') procedure provides a formal mechanism whereby any administration can make a preliminary assessment of the effect that a planned satellite network is likely to have on the stations of existing or planned satellite systems and their terrestrial stations in certain frequency bands and comment accordingly. To this end, the administration responsible for the planned satellite network has to submit to the Bureau, for API/A publication in the BR IFIC, the API data stipulated in Appendix 4 to the RR not sooner than seven years before the planned date of bringing into use of the network or system – see a simplified filing process approach applying to frequency bands and services not subject to a required form of coordination in the amateur-satellite service below.

WHEN TO INITIATE THE NOTIFICATION PROCEDURE? *Simplified filing process approach*

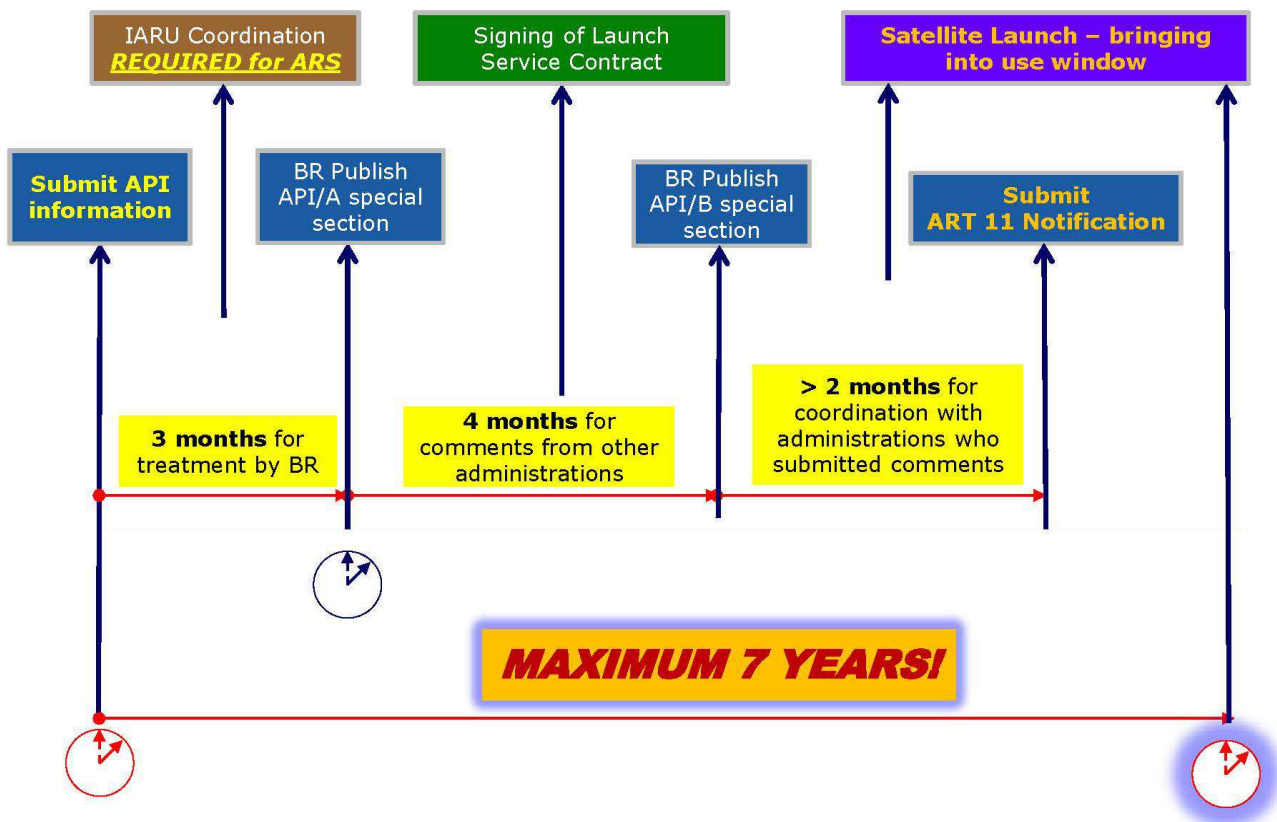


FIGURE 2: Simplified filing process approach

Notification and registration procedures

The Master International Frequency Register

The MIFR represents one of the pillars of the international radio regulatory framework as it contains all frequency usage notified to ITU. It should be consulted before selecting a frequency for any new user. For these reasons, notification of frequency assignments to the Bureau, with a view to their recording in the MIFR, represents an important obligation for administrations, especially in respect to those frequency assignments that have international implications.

Notification procedures

The process of notification of frequency assignments are contained in Article 11.

11.2 Any frequency assignment to a transmitting station and to its associated receiving stations except for those mentioned in Nos. **11.13** and **11.14** **shall be notified to the Bureau:**

11.3 *a)* if the use of that assignment is capable of causing harmful interference to any service of another administration; or

11.4 *b)* if that assignment is to be used for international radiocommunication; or

11.5 *c)* if that assignment is subject to a world or regional frequency allotment or assignment plan which does not have its own notification procedure; or

11.6 *d)* if that assignment is subject to the coordination procedure of Article 9 or is involved in such a case; or

11.7 *e)* if it is desired to obtain international recognition for that assignment; or

11.8 *f)* if it is a non-conforming assignment under No. **8.4** and if the administration wishes to have it recorded for information.

The Bureau shall publish the notice in the BR IFIC, thereby ensuring that all administrations are informed of the use of the assignments and that they are taken into account in any future planning conducted at the national, regional or international level.

This notification (in electronic format using the BRsoft) shall contain relevant characteristics, as specified in Appendix 4 of the RR.

List of the BR software used for filing of space notices (API and Notification) to the Bureau⁸

Notification Software Tools & Aids	Description
Space Capture Software (SpaceCap) (recommended)	PC-based software for electronic capture of AP4 forms of notices for API, CR or Notification
Space filing Validation Software (SpaceVal) (mandatory)	PC-based software for validating electronic notices captured by the Space-Cap software
Space data Query Software (SpaceQry)	PC-based software package which allows the query/access to the Bureau's Space Radiocommunication Stations database
Space Publication Software (SpacePub)	PC-based software utility for printing satellite networks / earth stations data

Cost recovery principles and fees for satellite network filings

The ITU Council determines the cost recovery principles and fees for satellite network filings.⁹ For a non-GSO satellite networks or systems not subject to coordination, the fees are as follows:

- API for non-GSO /570 CHF and for Notification /7030 CHF;
- Each Member State is entitled to the publication of special sections or parts of the BR IFIC; (space services) for one satellite network filing each year without the charges referred to above.
- No cost recovery charges for the publication of Special Sections/Notification for the Amateur-satellite service.

Small satellite ground segment

There is no specific provision relating to small satellite ground segment as such. All provisions applying to satellite networks and systems are so relevant to small satellite ground segment. However, in conformity with No. 25.11 of the RR, any small amateur-satellite operator shall set up at least one or more specific amateur-satellite TT&C Earth command stations to ensure that any harmful interference caused by emissions from its satellite can be terminated immediately (see No. 22.1). These specific amateur TT&C Earth command stations, have to be operated by an operator with a valid amateur license (duly authorized person) (Nos. 1.56 and 1.57 and Article 25 of the RR) and callsign (Article 19 of RR).

⁸ BR software: < <http://www.itu.int/ITU-R/go/space-software/en> >

⁹ ITU Cost recovery fees: <<http://www.itu.int/ITU-R/go/space-cost-recovery/en>>

ITU Acronyms

ITU - International Telecommunication Union - <http://www.itu.int/>

CS - Constitution of the ITU and CV - Convention of the ITU

RR – ITU Radio Regulations

Administration - Any governmental department or service responsible for discharging the obligations undertaken in the CS and CV of the ITU and in the Administrative Regulations

Bureau - Radiocommunication Bureau of the ITU

WRC - World Radiocommunication Conference of the ITU

GSO - Geostationary-Satellite Orbit

Non-GSO – Non-Geostationary-Satellite Orbit

Table - Table of Frequency Allocations as contained in Article 5 of the RR

API - Advance Publication of Information as contained in Article 9 of the RR

Notification - Notification procedures as contained in Article 11 of the RR

MIFR - Master International Frequency Register of the Bureau

BR IFIC - International Frequency Information Circular of the Bureau

ITU Bibliography

[1] ITU Constitution, Collection of the Basic Texts of the International Telecommunication Union adopted by the Plenipotentiary Conference, Edition of 2011,
Printed in Switzerland, ISBN 92-61-13231-6 <<http://www.itu.int/pub/S-CONF-PLEN-2011>>

[2] ITU Radio Regulations, Edition of 2012,
Printed in Switzerland, Geneva, 2012, ISBN 978-92-61-14021-2 <<http://www.itu.int/pub/R-REG-RR/en>>

[3] ITU, Preface to the BR IFIC (Space services) : <<http://www.itu.int/ITU-R/go/space-preface/en>>

[4] ITU-R Amateur-satellite service support page:

<<http://www.itu.int/en/ITU-R/space/Pages/SupportAmateur.aspx>>

[5] ITU, Amateur and Amateur-satellite service Handbook : <<http://www.itu.int/pub/R-HDB-52/en>>