

### Radiocommunication Bureau (BR)

Circular Letter 4/LCCE/130

29 April 2021

To Administrations of Member States of the ITU, Radiocommunication Sector Members, ITU-R Associates participating in the work of Radiocommunication Study Group 4 and ITU Academia

Subject: Invitation for submission of proposals for an ITU-R Small Satellite Handbook

#### 1 Introduction

ITU-R has commenced the process of developing an ITU-R Small Satellite Handbook, in response to the provisions of Resolution <u>ITU-R 68</u> on "Improving the dissemination of knowledge concerning the applicable regulatory procedures for small satellites, including nanosatellites and picosatellites". The purposes of this Small Satellite Handbook are as follows:

- to extend international cooperation among all ITU Member States, entities and organizations for the development and rational use of small satellites;
- to raise international awareness on current practices and applications and promote the adoption of small satellite technologies on a worldwide basis while striving to meet in a rational, equitable, effective, efficient, economic, and timely way the use of radio-frequency spectrum and satellite-orbit resources;
- to provide a detailed guidance on the regulatory environment and procedures, specifically the application of the Radio Regulations, for administrations/national regulators, small satellite operators and service providers in the operation, study/research, design, launch and management of applications of small satellites;
- to promote and to offer technical assistance to developing countries, enterprises and individuals in the field of small satellite utilization;
- to help administrations/new entrants with information on the relevant space services with allocated radio-frequency spectrum, types of small satellites, characteristics of space and earth segments, types of missions, space object registration, launch considerations, as well as space debris mitigation;
- to ensure interference-free operations of small satellite systems by implementing the Radio Regulations and regional agreements, as well as updating the system in an efficient and timely manner through the processes of world and regional information sharing and cooperation.

Within the ITU-R, the work on the development of this ITU-R Small Satellite Handbook is being conducted in ITU-R Working Party 4A (WP 4A) of Study Group 4 (SG 4) as the group responsible for this work. The table of contents of the draft ITU-R Small Satellite Handbook is provided in the Attachment to this Circular Letter.

#### 2 Purpose of this Circular Letter

The purpose of this Circular Letter is to invite the submission of proposals for the above-mentioned ITU-R Small Satellite Handbook. In that regard and considering that the work on the development of this ITU-R Small Satellite Handbook could highly benefit from the submission of proposals not only from Member States of the ITU, Radiocommunication Sector Members, ITU-R Associates participating in the work of Radiocommunication Study Group 4 and ITU Academia, but also from other organizations/entities which are not members of ITU-R, attention is drawn to the provisions of Resolution ITU-R 9-6 on "Liaison and collaboration with other relevant organizations, in particular ISO, IEC and CISPR".

In particular, resolves 1, 3 and 4 of Resolution ITU-R 9-6 state:

- "1 that administrations should encourage organizations dealing with matters affecting radiocommunications to take into account the global activities of the Radiocommunication Study Groups and the continuing need to cooperate on measures to avoid radio interference;
- 3 that Radiocommunication Study Groups or groups established by the Study Groups, may liaise, collaborate, and exchange information in accordance with established principles (see Annex 1) with other organizations such as standard development organizations, universities, and industry organizations, and with partnership projects, forums, consortia, research collaborations;
- 4 that Annex 1 "Principles for interaction of ITU-R with other organizations" should be used as guidance for liaison and collaboration activities with other organizations".

### 3 Web page for the ITU-R Small Satellite Handbook

The Radiocommunication Bureau has established a "Web page for the Small Satellite Handbook" to facilitate the development of proposals. The Small Satellite Handbook web page provides details of the on-going work, related resolutions/reports/documents, contact information and other relevant information on the development of the ITU-R Small Satellite Handbook.

#### 4 Procedure for submitting proposals

The submission of proposals from ITU-R members should be made directly to WP 4A in accordance with Resolution ITU-R 1-8.

Submissions from other organizations/entities which are not members of ITU-R are encouraged to be addressed to <a href="mailto:smallsathb@itu.int">smallsathb@itu.int</a>. These submissions will be prepared as inputs to WP 4A and will also be made available on the Small Satellite Handbook web page. At the suggestion of WP 4A, SG 4 supported the candidacy of Dr Ali Ebadi of Malaysia to serve as the editor of this handbook.

Mario Maniewicz Director

Attachment:

1

# Attachment

# **Draft Small Satellite Handbook**

## TABLE OF CONTENTS

1	Introduction
1.1	Purpose of this Handbook
1.2	Historical perspectives on small satellite
1.3	Types of small satellites
1.4	Tutorial on small satellite systems engineering aspects
2	Characteristics of small satellite systems
2.1	Space segment
2.1.1	Orbital types
2.1.2	Space segment
2.2	Ground segment
3	Type of services and spectrum
3.1	Space operation service
3.2	Amateur-satellite service
3.2.1	Specific requirements for Amateur-satellite service in the Radio Regulations
3.2.2	Coordination with the International Amateur Radio Union
3.3	Remote sensing: Earth exploration-satellite service
3.4	Climate monitoring: Meteorological service
3.5	Space exploration and other space research service
3.6	Other services
4	Radio regulatory procedures for small satellite
4.1	Brief Introduction of ITU
4.2	Frequency Allocations
4.3	General principles for utilization of spectrum and orbit resources
4.4	Determination of whether a satellite network is subject to coordination under Section II of RR Article <b>9</b>
4.5	Procedures for satellite networks not subject to coordination under Section II of RR Article <b>9</b>
4.5.1	Submission of the Advance Publication Information
4.5.2	Commenting procedures and resolution of difficulties
4.5.3	Submission of the Notification for recording in the Master Register
4.5.4	RR No. 4.4 (non-conformity with the Table of Frequency Allocations under RR Article 5

4.5.5	Bringing into use of notified frequency assignments
4.5.6	Modifications to the characteristics of the satellite network
4.5.7	Resolution <b>32 (WRC-19)</b> for non-GSO satellites with short-duration missions
4.6	Brief description on procedures for satellite networks subject to coordination under Section II of RR Article <b>9</b>
4.7	List of the BR software used for filing of space notices to the Bureau
4.8	Cost recovery principles and fees for the processing of satellite network filings
4.9	ITU Publications and References
5	Types of missions
5.1	Scientific missions
5.2	Education missions
5.3	Experimental missions
5.4	Commercial missions
5.5	Earth-based, moon-based, inter-planetary or deep space missions
5.6	Short duration missions under Resolution 32 (WRC-19)
6	Space object registration
7	Launch considerations
8	Space debris mitigation
9	Current practice for satellite networks or systems