

RESOLUTION ITU-R 74

Activities related to the sustainable use of radio-frequency spectrum and associated satellite-orbit resources used by space services

(2023)

The ITU Radiocommunication Assembly,

recalling

a) Resolution 219 (Bucharest, 2022) of the Plenipotentiary Conference, on sustainability of the radio-frequency spectrum and associated satellite-orbit resources used by space services;

b) Resolution 218 (Bucharest, 2022) of the Plenipotentiary Conference, on ITU's role in the implementation of the "Space2030" Agenda: space as a driver of sustainable development, and its follow-up and review process,

considering

a) that technologies used by both non-geostationary orbit (non-GSO) fixed-satellite service (FSS) systems and geostationary orbit (GSO) FSS and broadcasting-satellite service (BSS) networks are rapidly evolving, and consequently the associated ITU Radiocommunication Sector (ITU-R) Recommendations and Reports need to be updated to reflect the evolving nature of the characteristics and operations of such systems and networks;

b) that Member States can deorbit their satellites at the end of life and develop criteria and methodologies, including sharing data, to facilitate frequency coordination and compatible use of satellite systems; furthermore, Member States can submit contributions to the relevant study groups to initiate or continue ITU-R studies to develop recommendations that support the long-term sustainability of the radio-frequency spectrum and associated orbit resources;

c) the development of new technologies of in-orbit servicing (IOS) of space radiocommunication service spacecraft, including active space debris removal;

d) that the available radio-frequency spectrum and associated orbit resources are limited and must be shared among all nations;

e) that it is important to consider long-term space sustainability in the formation of policies and procedures for the efficient use of radio-frequency spectrum and satellite-orbit resources,

recognizing

- a) that No. 78 of the ITU Constitution (Article 12), on the functions and structure of the Radiocommunication Sector, states: *“The functions of the Radiocommunication Sector shall be, bearing in mind the particular concerns of developing countries, to fulfil the purposes of the Union, as stated in Article 1 of this Constitution, relating to radiocommunication: by ensuring the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including those using the geostationary-satellite or other satellite orbits, subject to the provisions of Article 44 of this Constitution, and by carrying out studies without limit of frequency range and adopting recommendations on radiocommunication matters”*;
- b) that No. 196 of the Constitution (Article 44), on the use of the radio-frequency spectrum and of the GSO and other satellite orbits, states that *“radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries”*;
- c) that Resolution 219 (Bucharest, 2022) of the Plenipotentiary Conference instructs the Radiocommunication Assembly, as a matter of urgency, to perform the necessary studies through relevant Radiocommunication study groups on the issue of the increasing use of radio-frequency spectrum and associated orbit resources in non-GSO orbits and the long-term sustainability of these resources, as well as on equitable access to, and rational and compatible use of, the GSO and non-GSO orbit and spectrum resources, consistent with the objectives of Article 44 of the Constitution;
- d) that Recommendation ITU-R S.1003-2 (2010) on environmental protection of the GSO provides guidance about disposal orbits for satellites in the GSO, and comments on the increase in debris due to fragments resulting from increased numbers of satellites and their associated launches, and that there is no equivalent recommendation applicable to non-GSO orbits;
- e) that Radiocommunication study groups dealing with space radiocommunication services throughout the years have been developing and plan to continue developing studies, including those on the use and management of spectrum and associated orbit resources, which contribute to the promotion of long-term sustainability of these resources;
- f) that those studies developed by Radiocommunication study groups dealing with space radiocommunication services address technical compatibility and regulatory procedures for non-GSO satellite systems, and are intended to ensure equitable access for all countries or groups of countries to radio frequencies and any associated orbits;

g) the existing mandate and current work being done within the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) to advance the long-term sustainability of outer space, including through the 2019 adoption by the COPUOS and subsequent consideration by the United Nations General Assembly of the 21 Guidelines for the Long-Term Sustainability of Outer Space Activities, and the importance of not duplicating work already being done elsewhere in the UN system¹;

h) that the Radiocommunication Bureau has recently received an ever-increasing number of filings for non-GSO systems, including systems composed of hundreds or thousands of space stations and multiple configurations, and observed a continued and expanded launch and operation of non-geostationary satellites in outer space,

noting

a) that Resolution ITU-R 9 resolves that the Radiocommunication Study Groups, or groups established by the Study Groups, may liaise, collaborate and exchange information, in accordance with established principles, with other organizations, such as standards development organizations, universities and industry organizations, and with partnership projects, forums, consortia and research collaborations;

b) that there is already a substantial amount of work related to long-term space sustainability being carried out in the Radiocommunication Study Groups,

resolves, as a matter of urgency, to invite the ITU Radiocommunication Sector

1 taking into due account Article 12 of the Constitution, to continue technical activities, including those on interference assessment and mitigation techniques among non-GSO systems in support of long-term sustainability in the scope of ITU-R with a focus on the prevention of harmful interference, and ensuring the rational, equitable, efficient and economical use of the radio-frequency spectrum and associated orbit resources, with a focus on non-GSO systems, in accordance with the provisions of the Radio Regulations and applicable ITU-R Recommendations, taking into account the special needs of the developing countries and the geographical situation of particular countries;

2 to develop and finalize during the next study cycle a Handbook on best practices for the sustainable use of frequencies and associated non-GSO orbits by space radiocommunication services, including individual experiences and guidelines adopted by Member States and Sector Members,

instructs the relevant Radiocommunication study groups

taking into account *recognizing g)* above, *instructs the Director of the Radiocommunication Bureau* 3 below, Recommendation ITU-R S.1003 and advancements in technology, to conduct studies towards the development of a new Recommendation providing guidance on safe and efficient deorbit and/or disposal strategies and methodologies for non-GSO space stations involved in radiocommunication services after the end of their life, focusing on the radio-frequency spectrum and associated satellite-orbit resources used by space services,

¹ See also the United Nations Office of Outer Space Affairs, <https://www.unoosa.org/>.

instructs the Director of the Radiocommunication Bureau

1 to report to the Radiocommunication Advisory Group and to the 2027 radiocommunication assembly on the developments and results of the studies and actions taken in the implementation of this Resolution;

2 to create a website available through a link from the main ITU-R website, containing a compendium of links to available and reliable information on the subjects described in *resolves, as a matter of urgency, to invite the ITU Radiocommunication Sector 2* of this Resolution;

3 to collaborate and exchange information with other United Nations organizations dealing with space activities, as well as with the United Nations Office for Outer Space Affairs and COPUOS, during the studies performed in the scope of this resolution,

encourages Members of the ITU Radiocommunication Sector

to actively participate in the implementation of this Resolution by, among others, submitting contributions to concerned Radiocommunication study groups,

requests the ITU Secretary-General

to bring this Resolution to the attention of the United Nations Office for Outer Space Affairs.