OBJECTIVES OF THE SPACE FREQUENCY COORDINATION GROUP (SFCG)

FOR THE 2023 WORLD RADIOCOMMUNICATION CONFERENCE

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Introduction

This document presents the objectives of SFCG members concerning issues affecting space science services on the agenda of the World Radiocommunication Conference 2023 (WRC-23). The contents may be used by SFCG members to inform their Administrations and regional groups, and to facilitate conference preparation and WRC consideration.

The presentation is organized to align with the Agenda for the WRC-23 as presented in Resolution **811 (WRC-19)** and the preliminary Agenda for the WRC-27 as presented in Resolution **812 (WRC-19)**. Not all the Agenda items are of interest to the SFCG and therefore only those relevant ones, relating to SFCG issues, are discussed herein.

The SFCG is concerned with the effective use and management of those radio frequency bands that are allocated by the Radio Regulations (RR) of the ITU to the Space Research, Space Operation, Earth Exploration-Satellite, Meteorological-Satellite, Inter-Satellite, Radionavigation-Satellite and Radio Astronomy (to the extent that it is relevant to spacecraft missions) services. SFCG promotes spectrum efficiency and recognizes the need for and the value of sharing frequency bands between more than one radio service, in cases where mutually agreed sharing and protection criteria have been established based upon the results of ITU-R studies.

However, in frequency bands allocated to the space science services or in adjacent frequency bands, and where sharing has been shown not to be feasible, the SFCG holds the view that such sharing should not be implemented. In such cases, the SFCG would support any review by Administrations that might lead to a reduction in the number of such not feasible sharing situations in the Table of Frequency Allocations contained in the ITU Radio Regulations.

SFCG attaches a particular importance to the protection of frequency bands used by space-based passive sensors to provide vital ecological and environmental data that is unobtainable by any other means. The successful operation of these passive sensors depends on the use of specific frequency bands that are defined by physical laws.

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Agenda Item 1.2 to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)**;

Resolution **245 (WRC-19)** resolves that the appropriate sharing and compatibility studies should be conducted with a view to ensuring the protection of services to which the frequency band is allocated on a primary basis, without imposing additional regulatory or technical constraints on those services, and also, as appropriate, on services in adjacent bands, for the frequency bands:

– 3 600-3 800 MHz and 3 300-3 400 MHz (Region 2);
– 3 300-3 400 MHz (amend footnote in Region 1);
– 7 025-7 125 MHz (globally);
– 6 425-7 025 MHz (Region 1);
– 10 000-10 500 MHz (Region 2).

The appropriate sharing and compatibility studies are to include studies with respect to services in adjacent bands, as appropriate.

Footnote RR No. **5.458** indicates that Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425-7 075 MHz and 7 075-7 250 MHz as passive microwave sensor measurements are carried out in these frequency bands.

As a result, from the SFCG point of view, the following elements have to be considered during the studies pertaining to WRC-23 AI 1.2:

- compatibility between EESS (passive) and SRS (passive) in 6425-7250 MHz and IMT operating in 6425-7125 MHz;
- protection of EESS (active) in 10-10.4 GHz from IMT in 10-10.5 GHz in Region 2;
- protection of EESS (passive) and SRS (passive) in 10.6-10.7 GHz from unwanted emissions of IMT in 10-10.5 GHz in Region 2;
- protection of SOS in 7100-7155 MHz (used in accordance with RR No. **5.459**) from IMT in 7025-7125 MHz.

Additional studies may also be relevant under WRC-23 AI 1.2 in order to address the protection of SRS (deep space) during near-Earth operations in 7145-7190 MHz from IMT in 7025-7125 MHz.

SFCG Objective

SFCG supports the development of studies in ITU-R to address that the existing space science service primary allocations are appropriately protected and not further constrained:

- EESS (active) in the band 10-10.4 GHz from a potential new identification to IMT in the band 10-10.5 GHz in Region 2;
- EESS (passive) and SRS (passive) in the band 10.6-10.7 GHz from unwanted emissions of a potential new identification to IMT in the band 10-10.5 GHz in Region 2;
- SOS in 7100-7155 MHz (in accordance with RR No. **5.459**) from a potential new identification to IMT in the band 7025-7125 MHz.

In addition, taking into account RR No. **5.458**, SFCG also supports the development of studies in

ITU-R to address the compatibility between EESS (passive) and SRS (passive) in the 6 425-7 075 MHz and 7 075-7 250 MHz frequency bands and potential IMT deployments in the bands 6 425-7 025 MHz (Region 1) and 7 025-7 125 MHz (globally).

SFCG is also considering whether ITU-R studies are required for the protection of SRS (deep space) during near-Earth operations in the band 7 145-7 190 MHz from potential new identification to IMT in the band 7 025-7 125 MHz.

Agenda Item 1.4 to consider, in accordance with Resolution **247 (WRC-19)**, the use of high-altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT, on a global or regional level;

This agenda item seeks to extend the opportunities for the use of high-altitude platform stations as IMT base stations (HIBS) in certain frequency bands below 2.7 GHz, or portions thereof, already identified for IMT. It contains two main aspects:

- sharing and compatibility studies to ensure protection of services to which the frequency band is allocated on a primary basis and adjacent services, as appropriate, in the bands 694-960 MHz, 1 710-1 885 MHz (1 710-1 815 MHz to be used for uplink only in Region 3) and 2 500-2 690 MHz (2 500-2 535 MHz to be used for uplink only in Region 3, except 2 655-2 690 MHz in Region 3).
- Review of the conditions set up for HIBS in RR Nos. **5.388A, 5,388B** and in Resolution **221 (Rev.WRC-07)** in the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and in the bands 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2.

Concerning the potential new bands for HIBS, SFCG is interested in the protection of the MetSat service in the 1 675-1 710 MHz from HIBS operated in the 1 710-1 885 MHz band and in the protection of the EESS (passive) and SRS (passive) in the purely passive band 2690-2700 MHz from HIBS operated in the 2500-2690 MHz band.
Concerning the review of the conditions of the existing bands for HIBS, SFCG is interested in the protection of the 2110-2120 MHz band allocated to SRS (deep space, earth-space) and in its licensing to SRS earth stations. Also, SFCG is interested in addressing possible impact into and protection of the EESS/SRS/SOS services in the 2025-2110 MHz band.

SFCG Objective

SFCG supports the development of studies in ITU-R to address the protection of the MetSat service in the 1 675-1 710 MHz from HIBS operated in the 1 710-1 885 MHz band and the protection of the EESS (passive) and SRS (passive) in the band 2690-2700 MHz from HIBS operated in the 2500-2690 MHz band.

SFCG is of the view that any review of the conditions for HIBS set out in RR Nos. **5.388A, 5.388B** and in Resolution **221 (Rev.WRC-07)** should not adversely impact the SRS (deep space, earth- to-space) in the band 2110-2120 MHz, as well as EESS/SRS/SOS services in the 2025-2110 MHz band.

Agenda Item 1.6 to consider, in accordance with Resolution **772 (WRC-19)**, regulatory provisions to facilitate radiocommunications for sub-orbital vehicles;

Resolution **772 (WRC-19)** resolves to invite ITU-R to study:

– "spectrum needs for communications between stations on board sub-orbital vehicles and terrestrial/space stations providing functions such as, *inter alia*, voice/data communications, navigation, surveillance and TT&C";

– "appropriate modification, if any, to the Radio Regulations, excluding any new allocations or changes to the existing allocations in Article **5**, to accommodate stations on board sub-orbital vehicles, whilst avoiding any impact on conventional space launch systems".

SFCG Objective

SFCG supports studies in the ITU-R on the development of regulatory provisions for radiocommunications for sub-orbital vehicles in order to facilitate the safe integration of sub-orbital vehicles into the existing air traffic management system.

Any negative impact on EESS, SOS, SRS and MetSat operations must be avoided. It is also important that any regulatory changes associated with this agenda item will not adversely impact the operation of launch vehicles or sounding rockets.

Agenda Item 1.10 to conduct studies on spectrum needs, coexistence with radiocommunication services and regulatory measures for possible new allocations for the aeronautical mobile service for the use of non-safety aeronautical mobile applications, in accordance with Resolution **430 (WRC-19)**;

Resolution **430 (WRC-19)** invites the ITU-R, *inter alia*, to conduct sharing and compatibility studies related to the potential use of the bands 15.4-15.7 GHz and 22-22.21 GHz by non-safety aeronautical applications in the aeronautical mobile service. These frequency bands are adjacent to the 15.35-15.4 GHz and 22.21-22.5 GHz bands respectively, where these two frequency bands are both allocated to the EESS (passive) and SRS (passive). Further, the band 15.35-15.4 GHz is subject to RR No. 5.340 which states, "all emissions are prohibited."

SFCG Objective

SFCG supports the development of studies in ITU-R to address the protection of the EESS (passive) in the bands 15.35-15.4 GHz and 22.21-22.5 GHz from the potential operation of non-safety aeronautical applications in the aeronautical mobile service in the bands 15.4-15.7 GHz and 22-22.21 GHz.

Agenda Item 1.12 to conduct, and complete in time for WRC-23, studies for a possible new secondary allocation to the Earth exploration-satellite (active) service for spaceborne radar sounders within the range of frequencies around 45 MHz, taking into account the protection of incumbent services, including in adjacent bands, in accordance with Resolution **656 (Rev.WRC-19)**;

The frequency range under consideration has incumbents which include fixed, mobile, and broadcasting services on a primary basis, as well as space research service as a secondary service. Country footnotes for the 40-50 MHz frequency range provide primary allocations for the aeronautical radionavigation and radiolocation services in certain parts of the world.

SFCG Objective

SFCG supports the development of studies in ITU-R in order to assess the compatibility between spaceborne radar sounders and incumbent services around 45 MHz with a view of creating a secondary allocation to the EESS (active) at WRC-23.

Agenda Item 1.13 to consider a possible upgrade of the allocation of the frequency band 14.8-15.35 GHz to the space research service, in accordance with Resolution **661 (WRC-19)**;

Resolution **661 (WRC-19)** invites ITU-R to conduct sharing and compatibility studies in order to determine the feasibility of upgrading the SRS allocation to primary status in the frequency band 14.8-15.35 GHz, with a view to ensuring protection of the primary services in the band (fixed and mobile services) and in the adjacent band 15.35-15.4 GHz (EESS (passive), SRS (passive), RAS).

SFCG Objective

SFCG supports the development of studies in ITU-R in order to assess the compatibility between SRS and incumbent services in the band 14.8-15.35 GHz with a view of upgrading the allocation to SRS in the band to a primary allocation.

SFCG supports that those studies should address the protection of the EESS (passive) in the band 15.35-15.4 GHz.

Consideration should also be given to the secondary allocation to the EESS (passive) and SRS (passive) in the band 15.2-15.35 GHz.

Agenda Item 1.14 to review and consider possible adjustments of the existing or possible new primary frequency allocations to EESS (passive) in the frequency range 231.5-252 GHz, to ensure alignment with more up-to-date remote-sensing observation requirements, in accordance with Resolution **662 (WRC-19)**;

Resolution **662 (WRC-19)** invites the ITU-R to:

- review the existing primary allocations to the EESS (passive) in the frequency range 231.5-252 GHz in order to analyse if these allocations are aligned with observation requirements of passive microwave sensors;
- study the impact that any change to the EESS (passive) allocations in the frequency range 231.5-252 GHz might have on the other primary services in these frequency bands;
- study, as appropriate, possible adjustments to the EESS (passive) allocations in the frequency range 231.5-252 GHz.

The main purpose of the agenda item is to better align the EESS (passive) allocations with passive sensor design requirements or adding possible new allocations to the EESS (passive) in the 231.5-252 GHz frequency range. The allocations to the EESS (passive) were created 20 years ago at a time when operational requirements were unclear.

SFCG Objective

SFCG supports the development of studies in ITU-R in order to align the allocations to the EESS (passive) in the frequency range 231.5-252 GHz with current operational requirements, either through an adjustment of the existing allocations or the addition of new allocations to EESS (passive) in the range.

Agenda Item 1.15 to harmonize the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service globally, in accordance with Resolution **172 (WRC-19)**;

Whilst Resolution **172 (WRC-19)** focusses mainly on the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service, its *Recognising f)* states that 'the transmitting GSO space station communicating with earth stations on aircraft and vessels should protect the adjacent EESS (passive) operations in the 10.6-10.7 GHz.'

Potential impact from ES on aircraft and vessels into SRS (active) and EESS (active) sensors, in the adjacent band 13.25-13.75 GHz, should be studied.

SFCG Objective

SFCG intends to monitor the ITU-R discussions on whether studies related to the impact from the FSS (space-to-Earth) allocation in 10.7-10.95 GHz into the operation of EESS (passive) in the adjacent 10.6-10.7 GHz are within the scope of WRC-23 agenda item 1.15.

SFCG supports the development of studies in the ITU-R in order to address the potential impact from Earth stations on aircrafts and vessels into EESS (active) and SRS (active) in the adjacent band 13.25-13.75 GHz band.

Agenda Item 1.16 to study and develop technical, operational and regulatory measures, as appropriate, to facilitate the use of the frequency bands 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) by non-GSO FSS earth stations in motion, while ensuring due protection of existing services in those frequency bands, in accordance with Resolution **173 (WRC-19)**;

Resolution **173 (WRC-19)** resolves to invite ITU-R to study:

- "the technical and operational characteristics and user requirements of the different types of earth stations in motion that plan to operate within non-GSO FSS systems in the frequency bands 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space), or parts thereof";
- "sharing and compatibility between earth stations in motion operating with non-GSO FSS systems and current and planned stations of primary services allocated in the frequency bands 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space), or parts thereof, to ensure protection of, and not impose additional constraints on, GSO systems and other services, including terrestrial services, in those frequency bands and in adjacent bands, including passive services".

Within the frequency bands under consideration, the bands 17.7-18.6 GHz and 18.8-19.3 GHz are adjacent to the band 18.6-18.8 GHz, which is allocated to the Earth exploration-satellite service (passive) on a primary basis in all three Regions and to the space research service (passive) on a secondary basis in Regions 1 and 3 and on a primary basis in Region 2. The band 28.5-29.5 GHz is further allocated on a secondary basis to the Earth exploration-satellite service in the Earth-to-space direction.

SFCG Objective

SFCG supports the development of studies in ITU-R to ensure that non-GSO FSS ESIM deployment in the bands 17.7-18.6 GHz and 18.8-19.3 GHz (space-to-Earth) will not result in increased adjacent band interference to EESS (passive) operations in the 18.6-18.8 GHz band.
SFCG also supports that these studies should take into account interference to EESS (passive) potentially caused by surface water reflections from satellite downlinks.

Agenda Item 1.17 to determine and carry out, on the basis of the ITU-R studies in accordance with Resolution **773 (WRC-19)**, the appropriate regulatory actions for the provision of inter-satellite links in specific frequency bands, or portions thereof, by adding an inter-satellite service allocation where appropriate;

The primary goal of this agenda item is to develop, based on the results of relevant sharing and compatibility studies, the technical conditions and regulatory provisions for satellite-to-satellite operations in the frequency bands 27.5-30 GHz (Earth-to-space) and 11.7-12.7 GHz, 18.1-18.6 GHz and 18.8-20.2 GHz (space-to-Earth) allocated to the FSS.

As satellites with scientific missions generate increasing volumes of data and requirements for reduced data latency become more restrictive, the space science community would benefit if their future missions could make use of available commercial satellite communications service providers to operate as data relays. Frequency bands 18.1-18.6, 18.8-20.2, 27.5-30 GHz could be used for forward and return links from LEO science satellites through commercial FSS service providers in the same manner as they would through a data relay satellite network.

Within the frequency bands under consideration, the bands 18.1-18.6 GHz and 18.8-19.3 GHz are adjacent to the band 18.6-18.8 GHz, which is allocated to the Earth exploration-satellite service (passive) on a primary basis in all three Regions and to the space research service (passive) on a secondary basis in Regions 1 and 3 and on a primary basis in Region 2. The band 28.5-29.5 GHz is further allocated on a secondary basis to the Earth exploration-satellite service in the Earth-to-space direction, although there are currently no known or planned uses of this allocation by SFCG member agencies.

SFCG Objective

SFCG supports the studies to develop the technical conditions and regulatory provisions for satellite-to-satellite operations in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, or portions thereof, including new ISS allocations, as appropriate.

SFCG supports that the space-to-space links should comply with the same directionality indicators as the existing FSS allocations (*i.e.*, Earth-to-space = from lower altitude to higher altitude, space-to-Earth = from higher altitude to lower altitude).

SFCG also supports that those studies should ensure that satellite-to-satellite operations in the 18.1-18.6 GHz and 18.8-20.2 GHz will not result in increased adjacent band interference to EESS (passive) operations in the 18.6-18.8 GHz band. Frequency overlap with agenda item 1.16 needs to be taken into account.

Agenda Item 1.18 to consider studies relating to spectrum needs and potential new allocations to the mobile-satellite service for future development of narrowband mobile-satellite systems, in accordance with Resolution **248 (WRC-19)**;

This agenda item calls for studies for consideration of new allocations to the mobile satellite service, for low-data rate systems for the collection of data from, and management of, terrestrial devices, in the following bands:

- 1 695-1 710 MHz in Region 2,
- 2 010-2 025 MHz in Region 1,
- 3 300-3 315 MHz, 3 385-3 400 MHz in Region 2;

Corresponding sharing and compatibility studies with existing primary services have to be carried out to determine the suitability of new allocations to the MSS, with a view to protecting the primary services, in and adjacent to the bands under consideration.

The frequency band 1695-1710 MHz is allocated to the MetSat service and is primarily used for non-GSO MetSat data downlinks to earth stations around the world, thus potentially affecting MetSat systems from other regions as well. Also, the frequency band 1695-1700 MHz is allocated to the Meteorological Aids on a primary basis in all three regions.

The protection of the EESS (Earth-to-space and space-to-space), SOS (Earth-space and space-to-space) and Space Research (Earth-to-space and space-to-space) in the adjacent band 2025-2110 MHz also needs to be ensured.

SFCG Objective

SFCG supports compatibility studies to ensure protection of current and future MetSat operations in the band 1695-1710 MHz as well as the operations of EESS (Earth-to-space and space-to-space), SOS (Earth-space and space-to-space) and Space Research (Earth-to-space and space-to-space) in the band 2025-2110 MHz.

Agenda Item 7 to consider possible changes, in response to Resolution **86 (Rev. Marrakesh, 2002)** of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC-07)**, in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit;

This standing agenda item to the WRC deals with any possible changes to the Radio Regulations affecting the advance publication, coordination, notification and recording of satellite networks.

SFCG Objective

SFCG supports possible changes to the Radio Regulations to improve the handling of the advance publication, coordination, notification, and recording procedures for satellite networks. SFCG shall monitor all the issues covered under this agenda item to ensure that any possible change will not adversely impact space science services.

Agenda Item 9.1 (Topic a) In accordance with Resolution **657 (Rev.WRC-19)**, review the results of studies relating to the technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors with a view to describing appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services

Resolution **657 (Rev.WRC-19)** calls for studies on technical and operational characteristics, spectrum requirements and appropriate radio service designations for space weather sensors with a view to describing appropriate recognition and protection in the Radio Regulations without placing additional constraints on incumbent services.

SFCG Objective

SFCG supports the development of ITU-R studies towards providing appropriate recognition and future protection to space weather sensors.

Agenda Item 9.1 (Topic b) In accordance with Resolution **774 (Rev.WRC-19)**, review the amateur service and the amateur-satellite service allocations in the frequency band 1 240 1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service operating in the same band

Resolution **774 (Rev.WRC-19)** calls for the detailed review of the different systems and applications used in the amateur service and amateur-satellite service allocations within the frequency band 1 240-1 300 MHz and studies of possible technical and operational measures to ensure the protection of RNSS (space-to-Earth) receivers from the amateur and amateur-satellite services within the frequency band 1 240-1 300 MHz, without considering the removal of these amateur and amateur-satellite services allocations, taking into account the results of the review.

Concerning 1 240-1 300 MHz which is the frequency band under consideration, this frequency band is allocated to EESS (active) and SRS (active), and the adjacent band 1 215-1 240 MHz is also allocated to EESS (active) and SRS (active), on a primary basis.

SFCG Objective

SFCG shall monitor all the issues covered under this agenda item to ensure that any possible change will not adversely impact the operation of EESS (active) and SRS (active) in the 1 215-1 300 MHz.

Agenda Item 9.1 (Topic c) Study the use of International Mobile Telecommunication system for fixed wireless broadband in the frequency bands allocated to the fixed services on primary basis, in accordance with Resolution **175 (WRC-19)**

Resolution **175 (WRC-19)** invites ITU-R to conduct any necessary studies on the use of International Mobile Telecommunication systems for fixed wireless broadband in the frequency bands allocated to the fixed service on primary basis, taking into account the relevant ITUR studies, Handbooks, Recommendations and Reports.

SFCG Objective

SFCG is concerned by this item since any frequency band allocated to the fixed service is open for consideration for IMT use. Many FS bands are shared with or adjacent to space science services. This topic has the potential to change coexistence conditions, and impact a large number of frequency bands used by space science services (*e.g.*, EESS, MetSat, SRS).
Protection of the space science services shall be ensured.

Agenda Item 9.1 (Topic d) Protection of EESS (passive) in the frequency band 36-37 GHz from non-GSO FSS space stations

Under studies considered for WRC-19 agenda item 1.6, a preliminary study on the protection of EESS (passive) sensors operating in the band 36-37 GHz from non-GSO FSS space stations in large constellations in the band 37.5-38 GHz was submitted to the ITU-R. This preliminary study indicated that it may be necessary to apply to FSS non-GSO space stations an unwanted e.i.r.p. limit of −34 dB(W/100 MHz), for all angles greater than 71.4 degrees from nadir. In addition, interference into the cold calibration channel of the EESS (passive) sensor operating in the frequency band 36-37 GHz was not studied.

On this basis, WRC-19 invited the ITU-R to conduct further study of this topic and develop Recommendations and/or Reports, as appropriate, and report back to WRC-23 to take action, if necessary. Furthermore, WRC-19 agreed that modifications to Resolution **750 (Rev.WRC-19)** should not be considered under these studies since the frequency band 36-37 GHz is not referenced in RR No. **5.340**.

SFCG Objective

SFCG supports the development of studies to further evaluate the impact of non-GSO FSS operations in the band 37.5-38 GHz on EESS (passive) sensors in the band 36-37 GHz, including the interference impact on the cold-sky calibration of passive sensors.

Agenda Item 10

To recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention.

SFCG Objective

General principles

It is very important to ensure that before any new agenda item is agreed at WRC-23, the following elements are already available:

1. Clear demonstration and quantification of the spectrum requirements.
2. Technical and operational parameters of the new systems for which modification of the RR is proposed.
3. Identification of the exact bands to be considered for regulatory changes.
4. Preliminary studies on the feasibility of sharing in these bands.

Taking into account Resolution **804 (rev. WRC-19)**, SFCG is of the view that adherence to these principles should be made conditional for adoption of any new WRC agenda item.

Preliminary Agenda WRC-27 (Resolution 812 (WRC-19))

The following WRC-27 preliminary agenda items present some interests or concerns for SFCG. SFCG will monitor the developments on these items during the study cycle 2020-2023 in order to develop SFCG objectives on each of them.

Agenda Item 2.1 to consider, in accordance with Resolution **663 (WRC-19)**, additional spectrum allocations to the radiolocation service on a co-primary basis in the frequency band 231.5-275 GHz and identification for radiolocation applications in frequency bands in the range 275-700 GHz for millimetre and sub-millimetre wave imaging systems;

Agenda Item 2.2 to study and develop technical, operational and regulatory measures, as appropriate, to facilitate the use of the frequency bands 37.5-39.5 GHz (space-to-Earth), 40.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) by aeronautical and maritime earth stations in motion communicating with geostationary space stations in the fixed-satellite service, in accordance with Resolution **176 (WRC-19);**

Agenda Items 2.5 and 2.7
2.5 the conditions for the use of the 71-76 GHz and 81-86 GHz frequency bands by stations in the satellite services to ensure compatibility with passive services in accordance with Resolution **776 (WRC-19);**
2.7 to consider the development of regulatory provisions for non-geostationary fixed-satellite system feeder links in the frequency bands 71-76 GHz (space-to-Earth and proposed new Earth-to-space) and 81-86 GHz (Earth-to-space), in accordance with Resolution **178 (WRC-19).**

Agenda Item 2.6 to consider regulatory provisions for appropriate recognition of space weather sensors and their protection in the Radio Regulations, taking into account the results of ITU-R studies reported to WRC–23 under agenda item 9.1 and its corresponding Resolution **657 (Rev.WRC-19);**

Agenda Item 2.8 to study the technical and operational matters, and regulatory provisions, for space-to-space links in the frequency bands [1 525-1 544 MHz], [1 545-1 559 MHz], [1 610-1 645.5 MHz], [1 646.5-1 660.5 MHz] and [2 483.5-2 500 MHz] among non-geostationary and geostationary satellites operating in the mobile-satellite service, in accordance with Resolution **249 (WRC-19)**;

Agenda Item 2.11 to consider a new EESS (Earth-to-space) allocation in the frequency band 22.55-23.15 GHz, in accordance with Resolution **664 (WRC-19);**

Agenda Item 2.13 to consider a possible worldwide allocation to the mobile satellite service for the future development of narrowband mobile-satellite systems in frequency bands between the range 1.5-5 GHz, in accordance with Resolution 248 (WRC-19).

SFCG Objective

The SFCG will monitor the developments on the relevant WRC-27 preliminary agenda items.

Possible new WRC-27 Agenda items

SFCG has not yet identified any possible new items for inclusion on the WRC-27 agenda.