ADD

RESOLUTION 130 (WRC-23)

Studies relating to the use of the frequency band 51.4-52.4 GHz to enable its use by gateway earth stations transmitting to non-geostationary-satellite orbit systems in the fixed-satellite service (Earth-to-space)

The World Radiocommunication Conference (Dubai, 2023),

considering

a) that satellite systems are increasingly being used to deliver broadband services and can help enable universal broadband access;

b) that next-generation fixed-satellite service (FSS) technologies for broadband will increase speeds, with faster rates expected in the near future;

c) that technological developments such as advances in spot-beam technologies and frequency reuse are used by the FSS in frequency bands above 30 GHz to increase the efficient use of spectrum;

d) that fixed-satellite applications in frequency bands above 30 GHz, such as feeder links, may be easier to share with other radiocommunication services than high-density FSS (HDFSS) applications;

e) that the current frequency allocations to the FSS in the frequency band 51.4-52.4 GHz do not enable its use by non-geostationary-satellite orbit (non-GSO) gateway operations, and as such do not meet the expected needs of such systems;

f) that the protection of the Earth exploration-satellite service (EESS) (passive) in the adjacent frequency bands 50.2-50.4 GHz and 52.6-54.25 GHz is vital to weather prediction and disaster management,

recognizing

a) the need to protect existing services when considering frequency bands for possible additional allocations to any service;

b) that the conditions in No. **5.555C** with respect to geostationary-satellite orbit (GSO) networks should not be changed;

c) that the frequency band 51.4-52.4 GHz is allocated to the fixed and mobile services, which will need to be protected, and is available for high-density applications in the fixed service, as indicated in No. **5.547**;

d) that No. **5.340** applies to the frequency bands 50.2-50.4 GHz and 52.6-54.25 GHz;

e) that in the frequency band 51.4-54.25 GHz, radio astronomy observations are carried out under national arrangements, as indicated in No. **5.556**, and that appropriate measures may have to be defined to protect the radio astronomy service;

f) that Report ITU-R S.2461 identifies the spectrum needs in the frequency band 51.4-52.4 GHz for additional FSS spectrum (Earth-to-space) for both GSO networks and non-GSO systems;

g) that the use of the frequency band 51.4-52.4 GHz by the FSS (Earth-to-space) is limited only to GSO networks and associated gateway earth stations with a minimum antenna diameter of 2.4 metres, in accordance with No. **5.555C**, as a result of WRC-19 studies;

h) that, in the frequency band 51.4-52.4 GHz, Resolution **750 (Rev.WRC-19)** applies as indicated in No. **5.338A**;

i) that the frequency band 50.2-50.4 GHz is also allocated to the EESS (passive) with the applicable non-GSO FSS unwanted emission limits provided in Resolution **750 (Rev.WRC-19)**;

j) that the frequency band 52.6-54.25 GHz is allocated to the EESS (passive), which needs to be protected, as indicated in No. **5.340**, through revision of Resolution **750 (Rev.WRC-19)**, with a view to including the non-GSO FSS unwanted emission limit for the frequency band 52.6-54.25 GHz together with possible modification of the GSO FSS unwanted emission limit for the frequency band 52.6-54.25 GHz, subject to the result of the studies, taking into account the aggregation of interference into EESS (passive);

k) that the existing limits for GSO FSS networks to protect EESS (passive) operating in the frequency band 52.6-54.25 GHz established in Resolution **750 (Rev.WRC-19)** continue to apply for those GSO FSS networks that were notified/brought into use before a date to be defined at WRC-27;

l) that Report ITU-R S.2462 contains studies on sharing and compatibility between GSO FSS networks and non-GSO FSS systems in the frequency bands 37.5-42.5 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz;

m) that, although the studies prior to WRC-19 were conducted only for GSO FSS earth stations, as noted in Report ITU-R S.2463, spectrum needs for both GSO and non-GSO FSS earth stations in the frequency band 51.4-52.4 GHz were ultimately identified, as indicated in *recognizing f)*;

n) that the need for additional uplink spectrum in the 50 GHz frequency range for non-GSO FSS gateway earth station use continues,

resolves to invite the ITU Radiocommunication Sector to complete in time for the 2027 world radiocommunication conference

1 sharing and compatibility studies with existing services, including in adjacent bands, including protection of the fixed and mobile services, and studies relating to the suitability of revising conditions associated with the primary allocation to the FSS in the frequency band 51.4-52.4 GHz (Earth-to-space) to enable its use by gateway earth stations of non-GSO FSS systems (Earth-to-space), and the relevant regulatory studies;

2 compatibility studies between non-GSO FSS gateway operation in the frequency band 51.4-52.4 GHz and the existing primary passive services operating in the frequency band 52.6-54.25 GHz in order to review and revise Resolution **750 (Rev.WRC-19)** to protect the EESS (passive), considering the aggregated interference from GSO gateway earth stations and non-GSO FSS gateway earth stations and taking into account that the existing limits for GSO FSS networks to protect the EESS (passive) operating in the frequency band 52.6-54.25 GHz established in Resolution **750 (Rev.WRC-19)** continue to apply for those GSO FSS networks that were notified/brought into use before a date to be defined at WRC-27;

3 studies on sharing and compatibility between non-GSO FSS gateway operation in the frequency band 51.4-52.4 GHz and the radio astronomy observations carried out in the frequency band 51.4-54.25 GHz in conformity with No. **5.556**, in order to determine the conditions to ensure the protection of these observations;

4 studies regarding the protection of GSO FSS space stations from the emissions of non-GSO FSS gateway earth stations, including possible associated regulatory actions and possible inclusion of the frequency band 51.4-52.4 GHz in the scope of Resolutions **769 (WRC-19)** and **770 (Rev.WRC-23)**,

invites administrations

to participate actively in the studies and provide the information required for the studies listed under *resolves to invite the ITU Radiocommunication Sector to complete in time for the 2027 world radiocommunication conference* by submitting contributions to the ITU Radiocommunication Sector (ITU-R),

invites the 2027 world radiocommunication conference

to consider, based on the results of the ITU-R studies, the possible revision of the conditions related to allocations to the FSS in the frequency band 51.4-52.4 GHz to enable its use by non-GSO FSS gateway earth stations on a primary basis and any other related regulatory provisions.