

PLENARY MEETING

**Addendum 5 to
Document 6187(Add.21)-
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Member States of the Inter-American Telecommunication Commission (CITEL)

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 9.1(9.1.5)

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:

9.1 on the activities of the Radiocommunication Sector since WRC-15;

9.1 (9.1.5) Resolution **764 (WRC-15)** - Consideration of the technical and regulatory impacts of referencing Recommendations ITU-R M.1638 1 and ITU-R M.1849 1 in Nos. **5.447F** and **5.450A** of the Radio Regulations

BACKGROUND

Issue 9.1.5 relates to consideration of the technical and regulatory impacts of updating the references to the latest version of Recommendation ITU-R M.1638-1 “Characteristics of and protection criteria for sharing studies for radiolocation, aeronautical radionavigation and meteorological radars operating in the frequency bands between 5 250 and 5 850 MHz” and adding a reference to Recommendation ITU-R M.1849-1 “Technical and operational aspects of ground-based meteorological radars” in footnotes **5.447F** and **5.450A** of the Radio Regulations.

Radio Local Area Networks (RLANs) and radars in the 5 250-5 350 MHz and 5 470-5 725 MHz bands provide valuable services as part of national infrastructures. The global demand for RLANs is evidenced by widespread adoption of devices, increasing connection speeds, data traffic volumes and other metrics. More than half of the world’s total internet traffic and over 60% of the mobile data traffic will be carried via Wi-Fi. The surging popularity of Wi-Fi means that Wi-Fi is an essential component of the global telecom infrastructure that requires a stable regulatory framework to continue to bring users the benefits of spectrum access and functionality. Radiolocation radars in the bands 5 250-5 350 MHz and 5 470-5 725 MHz perform a variety of functions, such as tracking space launch vehicles and aeronautical vehicles, sea and air surveillance, environmental measurements in the study of ocean water cycles and weather phenomena such as hurricanes, and Earth imaging. Airborne meteorological radars are used for both hurricane research and reconnaissance. New radar technologies for ground, ship, and airborne platforms are being developed in support of the above functions as part of the critical infrastructure.

The sharing of spectrum by RLANs under the mobile service and radars under the radiolocation service in these bands is pursuant to **RR Nos. 5.447F and 5.450A**.

RR No. 5.447F In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638-0 and ITU-R RS.1632-0. (WRC-03)

RR No. 5.450A In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU-R M.1638-0. (WRC-03)

For the bands 5 150-5 350 MHz and 5 470-5 725 MHz, the coexistence between WAS/RLAN and the radiolocation service is regulated by No. **5.446A**.

RR No. 5.446A The use of the bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution 229 (Rev.WRC 12).

During the ITU-R study cycle leading up to WRC-15, Recommendation ITU-R M.1638-0, which is incorporated by reference into both RR Nos. **5.447F** and **5.450A**, was revised. In this revision process, several new radars with different system characteristics were included in Recommendations ITU-R M.1638-1 and M.1849-1.¹ In light of proposals to modify **Nos. 5.447F and 5.450A** to replace the reference to ITU-R M.1638-0 with ITU-R M.1638-1 and M.1849-1, WRC-15 adopted agenda item 9.1.5 and associated Resolution **764 (WRC-15)** with the objective to investigate the technical and regulatory impacts on RLANs that would result from changing these references. It is important to emphasize that WRC-15 explicitly sought to ensure that no undue constraints are imposed on the services referenced in these footnotes as the result of this modification (see Resolution **764 (WRC-15)**, *resolves 1 and 2*).

There is also a primary mobile allocation in the frequency bands 5 250-5 350 MHz and 5 470-5 725 MHz for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). Recommendation ITU-R M.1849-1 (referenced as well in the updated Recommendation ITU-R M.1638-1) recommends that the aggregate protection criteria for ground-based meteorological radars should be an interference-to-noise ratio (I/N) of -10 dB.

Therefore, an appropriate regulatory approach to satisfy WRC-19 Agenda Item 9.1/Issue 9.1.5 is needed which will address the following objectives:

- a) Maintain the regulatory requirement that the mobile service cannot claim protection from the radiolocation service;
- b) Maintain the regulatory requirement not to place any additional burden on the mobile service (RLANs) through changes in the radio regulations;
- c) Keeps intact the current methods of providing co-existence between RLANs and the radiolocation service in these RR footnotes;
- d) Alleviate the need to revise RR Nos. **5.447F** and **5.450A** at future WRCs as radiolocation and mobile services evolve.

¹ Consistent with the provisions of Resolution **27 (Rev.WRC-12)**, the reference in the Radio Regulations shall continue to apply to the earlier version incorporated by reference until such time as a competent WRC agrees to incorporate the new version.

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations

(See No. 2.1)

MOD IAP/6187A21A5/1

5.447F In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) while the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) shall not impose more stringent technical and operational limits upon the mobile service than those in No. 5.446A. ~~These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638-0 and ITU-R RS.1632-0. (WRC-195)~~

Reasons: This revision of No. 5.447F maintains the current methods of providing co-existence between RLANs and the radiolocation service; ensures that no undue constraints are imposed on these services; and alleviates the need to revise this provision again at a future Conferences.

MOD IAP/6187A21A5/2

5.450A In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services while the radiodetermination services shall not impose more stringent technical and operational limits upon the mobile service than those in No. 5.446A. ~~Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU-R M.1638-0. (WRC-195)~~

Reasons: This revision of No. 5.450A maintains the current methods of providing co-existence between RLANs and the radiolocation service; ensures that no undue constraints are imposed on these services; and alleviate the need to revise this provision again at a future Conferences.

SUP IAP/6187A21A5/3

RESOLUTION 764 (WRC-15)

Consideration of the technical and regulatory impacts of referencing Recommendations ITU-R M.1638-1 and ITU-R M.1849-1 in Nos. 5.447F and 5.450A of the Radio Regulations

The World Radiocommunication Conference (Geneva, 2015),

Reasons: Consequential: consideration of the subject issues has been completed.