

UNITED STATES OF AMERICA
PROPOSALS FOR THE WORK OF THE CONFERENCE

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*

Background Information: The results of ITU-R studies indicate that the minimum spectrum requirement for RLAN using the 5 GHz frequency range in the year 2018 is estimated at 880 MHz. This figure includes spectrum of 455-580 MHz already utilised by non-IMT mobile broadband applications operating in the 5 GHz range resulting in 300-425 MHz additional spectrum being required.¹

To address this demand WRC-15 Agenda Item 1.1 considered additional primary mobile service allocations for terrestrial mobile broadband capabilities, including the possible expansion of RLAN use into the 5350-5470 MHz frequency range. The 5 350-5 470 MHz frequency range is particularly attractive for RLANs for reasons that include:

- RLAN devices already operate in spectrum immediately adjacent to the 5 350-5 470 MHz frequency range (i.e. 5 150-5 350 MHz and 5 470-5 725 MHz) subject to Resolution **229 (Rev.WRC-12)**. Equipment cost and complexity for development of RLAN devices in 5 350-5 470 MHz may be less complicated than other bands not adjacent to the existing RLAN bands.
- A new international allocation to the mobile service for 5 350-5 470 MHz would facilitate contiguous spectrum for RLANs, which would increase the number of non-overlapping channels available for use. The contiguous spectrum would enable two additional 80 MHz channels as well as one additional 160 MHz channel.

Initial studies conducted in Joint Task Group (JTG) 4-5-6-7 indicated that sharing was not possible between RLANs and incumbent services in the 5350-5470 MHz frequency range utilizing existing mitigation measures. The existing mitigation techniques studied included a 200 mW power limit, indoor restriction, and Dynamic Frequency Selection (DFS) designed for the 5150-5350 MHz and 5470-5725 MHz frequency bands. Additionally, ITU-R Working Party 5A has begun exploring possible new mitigation techniques to enable sharing between RLANs and incumbent services in the 5350-5470 MHz frequency range. Unfortunately, the WRC-15 study cycle provided insufficient time to complete the development and consideration of the proposed mitigation techniques and further study is required. There is a need to continue the studies on additional mitigation measures for RLANs.

Given the increased demand for high throughput RLAN services, along with the need to ensure protection of important incumbent services, the United States of America proposes a WRC-19 agenda item to consider an additional primary allocation to the mobile service and identification

¹ The ranges above are due to some of the frequency bands being utilized by RLAN only in some countries.

for the implementation of wireless access systems (WAS) including radio local area networks (RLAN) in the 5350-5470 MHz frequency range while ensuring protection of existing services.

Proposal:

MOD USA/10/1

RESOLUTION 806 (WRC-15)

Agenda for the 2019 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2015),

ADD USA/10/2

1.[5 GHz] to consider additional spectrum allocations to the mobile service on a primary basis and related regulatory provisions for implementation of wireless access systems (WAS) including radio local area networks (RLAN) in the 5350-5470 MHz frequency range to facilitate the development of terrestrial mobile broadband applications in accordance with Resolution **[5GHz] (WRC-2015)**;

Reasons: To enable contiguous spectrum for RLAN, which would allow the use of wider channels to support high throughput, while ensuring protection of incumbent services in the 5350-5470 MHz frequency range (note: current identification for RLANs are in 5150-5350 MHz and 5470-5725 MHz, see RR No. **5.446A**).

ADD USA/10/3

RESOLUTION [5GHZ] (WRC-15)

Consideration of additional primary allocations to the mobile service and identification for the implementation of wireless access systems (WAS) including radio local area networks (RLAN) in the 5350-5470 MHz frequency range

The World Radiocommunication Conference (Geneva, 2003),

considering

- a) that since WRC-07 there has been tremendous growth in the demand for mobile broadband applications with multimedia capabilities;
- b) that in many developing markets the main delivery mechanism for broadband access is expected to be through mobile devices;

- c) that adequate and timely availability of spectrum and supporting regulatory provisions is essential to support future growth of mobile broadband systems;
- d) that the band 5 350-5 460 MHz is allocated worldwide on a co-primary basis to the Earth exploration-satellite service (active) (No. **5.448B**), the space research service (active) (No. **5.448C**), and the aeronautical radionavigation service (No. **5.449**);
- e) that the band 5 350-5 470 MHz is also allocated worldwide on a primary basis to the radiolocation service (No. **5.448D**);
- f) that the band 5 460-5 470 MHz is allocated worldwide on a primary basis to the radionavigation service (No. **5.449**), the EESS (active), SRS (active), and radiolocation service (No. **5.448D**);
- g) that there is a need to protect the existing primary services in the 5 350-5 470 MHz frequency range;
- h) that there is a need to specify potential technical and operational restrictions for WAS, including RLANs, in the mobile service in the 5 350-5 470 MHz frequency range in order to protect incumbent service systems;

noting

- a) that initial studies have begun in the ITU-R based on work for consideration of potential mobile allocations and identification for terrestrial mobile allocations under WRC-15 agenda item 1.1;
- b) that the regulatory provisions for RLANs to enable sharing in the frequency ranges 5150-5350 MHz and 5470-5725 MHz are insufficient to enable sharing in the 5350-5470 MHz frequency range but sharing may be possible if new or advanced RLAN mitigation techniques are deployed;

recognizing

- a) that WAS, including RLANs, play an important role in providing broadband services;
- b) that the results of ITU-R studies indicate that the minimum spectrum requirement for RLAN using the 5 GHz frequency range in the year 2018 is estimated at 880 MHz. This figure includes spectrum of 455-580 MHz already utilised by non-IMT mobile broadband applications operating in the 5 GHz band range resulting in 300-425 MHz additional spectrum being required;
- c) that RLAN devices utilize the following frequency bands in the 5 GHz frequency range: 5 150-5 250 MHz, 5 250-5 350 MHz, 5 470-5 725 MHz and, in some countries, 5 725-5 850 MHz;
- d) that new international allocations to the mobile service in the 5 350-5 470 MHz frequency bands would facilitate contiguous spectrum for RLANs thereby enabling the use of wider channel bandwidths to support higher data throughput.

resolves

- 1) to conduct, and complete in time for WRC-19, studies for additional spectrum allocations to the mobile service on a primary basis and related regulatory provisions for implementation of wireless access systems (WAS) including radio local area networks (RLAN) in the 5350-5470 MHz frequency range while ensuring the protection of incumbent services;

2) to invite WRC-19 to consider the results of the above studies and take appropriate actions,

invites ITU-R

to conduct, and complete in time for WRC-19, the appropriate studies concerning additional spectrum allocations to the mobile service on a primary basis and related regulatory provisions for implementation of wireless access systems (WAS) including radio local area networks (RLAN) to facilitate sharing with the incumbent services in the 5350-5470 MHz frequency range.

invites administrations

to participate actively in these studies by submitting contributions to ITU-R.

ATTACHMENT

PROPOSAL FOR ADDITIONAL AGENDA ITEM FOR CONSIDERATION OF ADDITIONAL PRIMARY ALLOCATIONS TO THE MOBILE SERVICE AND IDENTIFICATION FOR THE IMPLEMENTATION OF WIRELESS ACCESS SYSTEMS INCLUDING RADIO LOCAL AREA NETWORKS IN THE 5350-5470 MHz FREQUENCY RANGE

Subject: Proposed Future WRC Agenda Item for WRC-2019 for consideration of additional primary allocations to the mobile service and identification for the implementation of wireless access systems including radio local area networks in the 5350-5470 MHz frequency range

Origin: United States of America

Proposal: To consider new primary allocations to the mobile service and identification for the implementation of wireless access systems including radio local area networks in the 5350-5470 MHz frequency range.

Background/reason:

Initial studies conducted in Joint Task Group (JTG) 4-5-6-7 indicated that the regulatory provisions for RLANs to enable sharing in the frequency ranges 5150-5350 MHz and 5470-5725 MHz are insufficient to enable sharing in the 5350-5470 MHz frequency range. However, sharing may be possible if new or advanced RLAN mitigation techniques are deployed. ITU-R Working Party 5A has begun exploring possible new or additional RLAN mitigation techniques to enable sharing between RLANs and incumbent services in the 5350-5470 MHz frequency range. Unfortunately, the WRC-15 study cycle provided insufficient time to complete the development and consideration of the proposed mitigation techniques before the JTG 4-5-6-7 completed its work. Further study is required.

Radiocommunication services concerned: Earth Exploration-Satellite Service (active), Space Research Service (active), Aeronautical Radionavigation, Radiolocation and Radionavigation

Indication of possible difficulties: None foreseen.

Previous/ongoing studies on the issue: Studies are underway in WP 5A to examine RLAN mitigation techniques. WP 5B and WP 7C are defining protection criteria for their respective incumbent services. JTG 4-5-6-7 conducted initial sharing studies during WRC-15 study cycle.

Studies to be carried out by: SG 5 | ***with the participation of:*** SG 7

ITU-R Study Groups concerned: SG 5 and SG 7

ITU resource implications, including financial implications (refer to CV126): Minimal

Common regional proposal: Yes/No
Number of countries:

Multicountry proposal: Yes/No

Remarks