



# International Amateur Radio Union

## Summary Meeting Report

### ITU-R WP5A #29: 9th – 19th May 2023 (Hybrid Meeting)

#### Relating to the 23cm Band RNSS Coexistence Aspects and WRC23 AI 9.1b

The IARU was represented in person by Barry Lewis (G4SJH – WRC23 AI9.1b Lead) and by Hans Blondeel Timmerman (PB2T – CEPT Co-coordinator).

#### Background

As detailed in the report from WRC23 CPM-1, ITU-R WP5A is the lead group responsible for developing the CPM report on agenda item 9.1 topic b and is working in collaboration with WP4C on the studies identified under *invites 2* of Resolution 774 (WRC19).

The contributions relating to this WRC23 agenda item 9.1 topic b work are dealt with in working group WG5A-1 which met for thirteen sessions over the ten meeting days.

WG5A-1 also deals with other aspects related to the amateur and amateur satellite services reported elsewhere.

IARU provided two contributions to this meeting. Other contributions were provided by Japan, Canada, France/Korea and Russian Federation. These were presented in WG5A-1 and used as the basis for further discussion and development of the WG5A-1 deliverables. The deliverables under development relating to AI9.1b are:

1. draft technical report **ITU-R M.[AMATEUR.CHARACTERISTICS]**
2. draft ITU-R Recommendation **ITU-R M.[AS\_GUIDANCE]**

#### Working documents from the previous meeting

The following working documents carried over from the previous meeting #28 formed the basis for the work to progress:

**Document 5A/708-E, Annex 5** - The draft technical report **ITU-R M.[AMATEUR.CHARACTERISTICS]**.

**Document 5A/708-E, Annex 6** - The draft recommendation **ITU-R M.[AS\_GUIDANCE]**.

#### Input contributions

**Doc 5A/724** – Canada– proposals for the draft recommendation ITU-R M.[AS\_GUIDANCE]

**Doc 5A/729** – IARU - proposals for the draft recommendation ITU-R M.[AS\_GUIDANCE]

**Doc 5A/730** – IARU - proposals for the draft report ITU-R M.[AMATEUR.CHARACTERISTICS]

**Doc 5A/731** – Japan - proposals for the draft recommendation ITU-R M.[AS\_GUIDANCE]  
**Doc 5A/735** – Russian Federation - proposals for the draft recommendation ITU-R M.[AS\_GUIDANCE]  
**Doc 5A/744** – China - proposals for the draft recommendation ITU-R M.[AS\_GUIDANCE]  
**Doc 5A/754** – France - proposals for a draft liaison to WP4C.  
**Doc 5A/755** – France - proposals for the draft report ITU-R M.[AMATEUR.CHARACTERISTICS]  
**Doc 5A/756** – France/Korea - proposals for the draft recommendation ITU-R M.[AS\_GUIDANCE]

### **IARU objectives**

The IARU provided two contributions to this meeting. Doc 5A/729 proposed modifications to the draft recommendation ITU-R M.[AS\_GUIDANCE] to account for EME operations. Doc 5A/730 proposed an new Annex to the draft report ITU-R M.[AMATEUR.CHARACTERISTICS] providing a Monte Carlo style study of the impact of amateur transmissions on a population of RNSS receivers in the Galileo part of the band. Both contributions had been agreed in the IARU WRC-23 A19.1b task group and can be found [here](#) (ITU-R M.[AS\_GUIDANCE]) and [here](#) (ITU-R M.[AMATEUR.CHARACTERISTICS]).

The IARU objective was for both these contributions to be accepted into the relevant working document. In addition many aspects of the guidance recommendation remained unresolved from the previous meeting and several IARU proposals still stand for discussion.

### **Meeting Activity**

#### **a) Recommendation ITU-R M.[AS\_GUIDANCE]**

The IARU supports the development of this Recommendation which is aiming to identify specific frequency ranges in the 23cm band, maximum power levels and bandwidth restrictions where amateur applications can continue with a minimum of potential interference to the primary RNSS receivers.

By the end of the meeting there was reasonably good and stable agreement for the range 1296 to 1300 MHz:

“For narrowband (BW < 150 kHz) applications in the amateur service:

- a) Block 1: 1 296-1 298 MHz; Maximum transmitter power = 50 W
- b) Block 2: 1 298-1 300 MHz; Maximum transmitter power = 150 W

For narrowband earth-moon-earth communications in the amateur service using a symmetric high-performance antenna (e.g. boresight gain at least 30 dBi) pointing at least 15 degrees above the horizontal:

- a) Block 2: 1 298-1 300 MHz; Maximum transmitter power = 500 W”

In addition there was good agreement on the amateur-satellite range from 1260 to 1262 MHz although the final power level and spectral density proposal ( "EIRP" and "dBW/150kHz" ) need addressing:

"For narrowband applications operating (bandwidth  $\leq$  150 kHz) in the amateur-satellite service (Earth-to-space):

- a) Block C: 1 260-1 262 MHz; Maximum EIRP = [28.0] dBW/150 kHz"

Other parts of the band remain for further discussion with less agreement even on the precise frequency ranges. In particular there are various proposals for the frequency block proposed for broadband applications around 1254 to 1260 MHz some of which are 2 MHz wide whilst others are 4 MHz wide. The IARU and France continue to propose 4 MHz and the ability to operate narrowband applications in this range is also under discussion.

The aspects causing the most problems (and probably delay to the progress of the draft) are consideration of the frequencies overlapping with other RNSS systems especially GLONASS and COMPASS, proposals to protect airborne RNSS systems within the GLONASS band, specification of power densities within a specified bandwidth (mainly from the Russian Federation) and powers expressed as EIRP.

In general the IARU has spoken against EIRP proposals apart from within the amateur satellite band where this did not seem to be problematic given the limited set of applications operating here. The IARU does not support spectral density proposals either as these can be confusing and open to misinterpretation in practice. However at present the Russian Federation wants to retain this proposal for further discussion.

Other proposals in the draft refer to operation around airports, air corridors and maximum transmission time for satellite operations. Many of these proposals seem difficult if not impossible to implement in any practical way both for administrations and amateur operators. None of these have been fully discussed yet.

Finally there has been a proposal from the Russian Federation that the protection of space to space RNSS receivers should be covered by the recommendation. This is considered outside the scope of Agenda item 9.1b and is an ongoing topic of contention discussed at the CPM-2 also. Currently this is not accepted into the draft Recommendation.

The draft recommendation is attached as annex 6 to the WP5A chairman's report for further discussion at the next meeting where it is hoped to be finalised.

b) Report **M.[AMATEUR.CHARACTERISTICS]**:

The only substantive contribution came from the IARU proposing an Annex containing a Monte Carlo style study to assess the impact of a number of amateur transmissions on a population of surrounding RNSS receivers. A number of administrations commented to the effect that this work should be within the purview of WP4C which carried out the studies developed into the published report ITU-R M.2513.

The meeting agreed to leave the proposal in the 5A working document but it should be liaised to WP4C for their consideration and as material for a possible revision of the

published report. The IARU agreed with this course of action. There were additional comments on details of the study some of which were resolved by quick simulation re-runs by the IARU providing additional material for the study.

A liaison document to WP4C highlights this study and requests appropriate action at their next meeting towards the end of June.

The document is attached as annex 5 to the WP5A chairman's report with the study included within square brackets indicating non-agreement at this time. If WP4C adopts the work into a revision of M.2513 then the IARU can propose its removal from the 5A work.

### **Summary of the meeting outputs relevant to AI 9.1b**

**Annex 5** to the chairman's report **5A/769**: PDNR ITU-R M.[AMATEUR.CHARACTERISTICS]. This working document forms the basis for ongoing contributions and work at the next meeting.

**Annex 6** to the chairman's report **5A/769**: Working document towards a Recommendation on guidance for the amateur and amateur satellite service use of the 1240-1300 MHz band.

**4C/408** Liaison to ITU-R WP4C on progress of agenda item 9.1, topic b) for WRC-23.

**Next WP-5A meeting:** 18 - 21 September 2023.

During the WP 5A plenary it was proposed to shorten the next meeting to 18-21 September 2023. However, in order to progress the draft Recommendation there is a proposal to hold a formal meeting starting in the previous week from the 15th focused on WG5A-1.

Study Group 5 is scheduled 25-26th September 2023 where it is expected that the deliverables discussed above will be submitted for approval.