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| --- | --- | --- | --- |
| **42 MEETING OF PERMANENT**  **CONSULTATIVE COMMITTEE II:**  **RADIOCOMMUNICATIONS**  **August 28 to September 01, 2023**  **Ottawa, Canada** | | **OEA/Ser.L/XVII.4.2.42**  **CCP.II-RADIO /doc. 5894/23**  **06 August 2023**  **Original: English** | |
|  | | | |
|  | **PROPOSED MODIFICATIONS TO PRELIMINARY PROPOSAL FOR WRC-23 AGENDA ITEM 1.8** | |  |
|  | **(Item on the Agenda: 3.1 (SGT-2))** | |  |
|  | **(Document submitted by the delegation of the United States of America)** | |  |

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| **Executive Summary:** |
| The United States proposes the attached updates to its preliminary proposal on 1.8. More information on this proposal and these updates can be found in the accompanying information document submitted to this meeting. |

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| **Impact on the sector:** |
| This document supports the work of CITEL’s PCC.II Working Group for WRC under 3.1 of the agenda. |

**Proposed Modifications to Preliminary Proposal shown in Aqua highlight (the baseline is the existing radio regulatory text). Most redline changes are coming from CPM Method B Option B3 with some modifications on top of those)**

Source: GT-CMR23-2022-40-058

Support:

USA

**Agenda Item 1.8:** *to consider, on the basis of ITU R studies in accordance with Resolution* ***171 (WRC 19)****, appropriate regulatory actions, with a view to reviewing and, if necessary, revising Resolution* ***155 (Rev.WRC-19)*** *and No.* ***5.484B*** *to accommodate the use of fixed-satellite service (FSS) networks by control and non-payload communications of unmanned aircraft systems*;

**Background**: Agenda item 1.8 was established to revise Resolution **155 (Rev.WRC-19)**. This resolution was initially adopted by WRC-15 on the use of geostationary-satellite networks in the fixed-satellite service in certain frequency bands for the control and non-payload communications (CNPC) of unmanned aircraft systems (UAS). Report ITU-R M.2171 identifies the spectrum requirements for unmanned aircraft (UA) command and non-payload communication (CNPC) that would be needed to support flight through non-segregated airspace.

Studies on technical and regulatory conditions carried out in advance of WRC-15 showed that the use of FSS networks for UA CNPC is feasible under certain conditions. These conditions include flight scenarios which were provided by ICAO and the existing FSS framework. Furthermore, ICAO studies showed that – based on given FSS characteristic envelopes – the FSS based UAS CNPC can be a working solution compliant to the Standards and Recommended Practices (SARPs) for the RPAS C2 Link[[1]](#footnote-1).

WRC-15, under its agenda item 1.5, considered the possibility to use fixed-satellite service (FSS) networks to provide UAS CNPC links and adopted Resolution **155 (WRC-15)** in order to benefit the opportunity of using existing satellite transponders. Recognizing the need for further studies on regulatory provisions and technical criteria both within ICAO and ITU, WRC-15 decided that consideration of the outcome of these studies, also taking into account the progress obtained by ICAO in the completion of its SARPs on the use of FSS for the UAS CNPC links, would again be considered by WRC‑23.

WRC-23 agenda item 1.8 was therefore established by WRC-19 to, in accordance with Resolution **171** **(WRC‑19)**, consider appropriate regulatory actions, with a view to reviewing and, if necessary, revising Resolution **155 (Rev.WRC‑19)** and No. **5.484B** to accommodate the use of FSS networks by control and non-payload communications of unmanned aircraft systems.

On the basis of the studies called for by Resolutions **171 (WRC-19)** and **155 (Rev.WRC-19)** that define the conditions for operating in the FSS (see *resolves* 19 of Resolution **155 (Rev.WRC-19)**) in the frequency bands for which No. **5.484B** already applies, revisions to Resolution **155 (Rev.WRC-19)** and RR No. **5.484B** are proposed to accommodate the use of FSS networks by UAS CNPC systems.

**Proposal**:

Support:

USA

**MOD** PP/1.8/1

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations  
(See No. 2.1)

10.7-11.7 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| … | … | |
| 10.95-11.2  FIXED  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B (Earth-to-space) 5.484  MOBILE except aeronautical mobile | 10.95-11.2  FIXED  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B  MOBILE except aeronautical mobile | |
| … | … | |
| 11.45-11.7  FIXED  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B (Earth-to-space) 5.484  MOBILE except aeronautical mobile | 11.45-11.7  FIXED  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B  MOBILE except aeronautical mobile | |

11.7-13.4 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 11.7-12.5  FIXED  MOBILE except aeronautical mobile  BROADCASTING  BROADCASTING-SATELLITE 5.492 | 11.7-12.1  FIXED 5.486  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B 5.488  Mobile except aeronautical mobile  5.485 | 11.7-12.2  FIXED  MOBILE except aeronautical mobile  BROADCASTING  BROADCASTING-SATELLITE 5.492 | |
| 12.1-12.2  FIXED-SATELLITE  (space-to-Earth) 5.484A MOD 5.484B 5.488 |
| 5.485 5.489 | 5.487 5.487A | |
| 12.2-12.7  FIXED  MOBILE except aeronautical mobile  BROADCASTING  BROADCASTING-SATELLITE 5.492 | 12.2-12.5  FIXED  FIXED-SATELLITE (space-to-Earth) MOD 5.484B  MOBILE except aeronautical mobile  BROADCASTING | |
| 5.487 5.487A | 5.487 5.484A | |
| 12.5-12.75  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B (Earth-to-space)    5.494 5.495 5.496 | 5.487A 5.488 5.490 | 12.5-12.75  FIXED  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B  MOBILE except aeronautical mobile  BROADCASTING- SATELLITE 5.493 | |
| 12.7-12.75  FIXED  FIXED-SATELLITE (Earth-to-space)  MOBILE except aeronautical mobile |
| … | | |

Support:

USA

**MOD** PP/1.8/2

14-14.5 GHz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Allocation to services | | | | |
| Region 1 | Region 2 | | Region 3 | |
| 14-14.25 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A MOD 5.484B 5.506  5.506B  RADIONAVIGATION 5.504  Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A  Space research  5.504A 5.505 | | | | |
| 14.25-14.3FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A MOD 5.484B 5.506  5.506B  RADIONAVIGATION 5.504  Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A  Space research  5.504A 5.505 5.508 | | | | |
| 14.3-14.4  FIXED  FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A MOD 5.484B 5.506 5.506B  MOBILE except aeronautical mobile  Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A  Radionavigation-satellite  5.504A | | 14.3-14.4  FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A MOD 5.484B 5.506 5.506B  Mobile-satellite (Earth-to-space) 5.506A  Radionavigation-satellite    5.504A | | 14.3-14.4  FIXED  FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A MOD 5.484B 5.506 5.506B  MOBILE except aeronautical mobile  Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A  Radionavigation-satellite  5.504A |
| 14.4-14.47 FIXED  FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A   MOD 5.484B 5.506  5.506B  MOBILE except aeronautical mobile  Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A  Space research (space-to-Earth)  5.504A | | | | |
| … | | | | |

Support:

USA

**MOD** PP/1.8/3

18.4-22 GHz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Allocation to services | | | | |
| Region 1 | Region 2 | | Region 3 | |
| … | | | | |
| 19.7-20.1  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B 5.516B 5.527A  Mobile-satellite (space-to-Earth) | | 19.7-20.1  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B 5.516B 5.527A  MOBILE-SATELLITE (space-to-Earth) | | 19.7-20.1  FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B 5.516B 5.527A  Mobile-satellite (space-to-Earth) |
| 5.524 | | 5.524 5.525 5.526 5.527 5.528 5.529 | | 5.524 |
| 20.1-20.2FIXED-SATELLITE (space-to-Earth) 5.484A MOD 5.484B 5.516B 5.527A  MOBILE-SATELLITE (space-to-Earth)  5.524 5.525 5.526 5.527 5.528 | | | | |
| … | | | | |

Support:

USA

**MOD** PP/1.8/4

24.75-29.9 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| **…** | | |
| 29.5-29.9  FIXED-SATELLITE (Earth-to-space) 5.484A MOD 5.484B 5.516B 5.527A 5.539  Earth exploration-satellite (Earth-to-space) 5.541  Mobile-satellite (Earth-to-space) | 29.5-29.9  FIXED-SATELLITE (Earth-to-space) 5.484A MOD 5.484B 5.516B 5.527A 5.539  MOBILE-SATELLITE (Earth-to-space)  Earth exploration-satellite (Earth-to-space) 5.541 | 29.5-29.9  FIXED-SATELLITE (Earth-to-space) 5.484A MOD 5.484B 5.516B 5.527A 5.539  Earth exploration-satellite (Earth-to-space) 5.541  Mobile-satellite (Earth-to-space) |
| 5.540 5.542 | 5.525 5.526 5.527 5.529 5.540 | 5.540 5.542 |

Support:

USA

**MOD** PP/1.8/5

29.9-34.2 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 29.9-30 FIXED-SATELLITE (Earth-to-space) 5.484A MOD 5.484B 5.516B 5.527A 5.539  MOBILE-SATELLITE (Earth-to-space)  Earth exploration-satellite (Earth-to-space) 5.541 5.543  5.525 5.526 5.527 5.538 5.540 5.542 | | |
| … | | |

Source: 5828

Support:

USA

**MOD** PP/1.8/6

5.484B Earth stations on board unmanned aircraft for control and non-payload communications operating with geostationary fixed-satellite service (FSS) space stations within the frequency bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.5 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Regions 1 and 3 and 19.7-20.2 GHz (space-to-Earth), and in the frequency bands 14-14.47 GHz (Earth-to-space) and 29.5-30.0 GHz (Earth-to-space) are an application of the FSS, are limited to internationally standardized aeronautical systems, and Resolution **155 (Rev.WRC 23)** shall apply.     (WRC‑23)

Reason: Modification of the footnote improves the clarity to the services and systems for which it applies. Modifications to the Table of Frequency Allocations are to reflect the modified footnote.

Support:

USA

**MOD** PP/1.8/7

RESOLUTION 155 (REV.WRC‑23)

Regulatory provisions related to earth stations on board unmanned aircraft which operate with geostationary-satellite networks in the fixed-satellite   
service in certain frequency bands not subject to a Plan of Appendices 30,   
30A and 30B for the control and non-payload communications of   
unmanned aircraft systems in non-segregated airspaces[[2]](#footnote-3)\*

The World Radiocommunication Conference (Dubai, 2023),

considering

*a)* that the operation of unmanned aircraft systems (UAS) requires reliable control and non-payload communication (CNPC) links, as shown in Annex 1 of this Resolution, in particular to relay air traffic control communications and for the remote pilot to control the flight;

*b)* that the use of FSS for CNPC links would not preclude the use of other available service allocations to accommodate CNPC Links,

considering further

*a)* that GSO FSS networks with which UAS CNPC earth stations communicate may provide service within more than one country;

*b)* that for the operation of UAS CNPC earth stations, notification of any frequency assignment under Article 11 of the Radio Regulations can only be made by one single notifying administration;

*c)* that, an administration authorizing the operation of UAS CNPC earth stations within the territory under its jurisdiction may modify or withdraw that authorization at any time,

noting

*a)* that WRC‑15 adopted Resolution **156 (WRC‑15)** on the use of earth stations in motion communicating with geostationary satellite orbit (GSO) FSS space stations in the frequency bands 19.7-20.2 GHz and 29.5-30.0 GHz does not apply for UAS CNPC links;

*b)* that Report ITU‑R M.2171 provides information on characteristics of UAS and spectrum requirements to support their safe operation in non-segregated airspace;

c) that CNPC links using earth stations onboard unmanned aircraft are not subject to the regulatory provisions that apply to earth stations in motion (ESIM),

recognizing

*a)* that the frequency bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.5 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Regions 1 and 3 and 19.7-20.2 GHz (space-to-Earth), and in the frequency bands 14-14.47 GHz (Earth-to-space) and 29.5-30.0 GHz (Earth-to-space) are allocated to the fixed-satellite service (FSS on a primary basis);

*b)* that the frequency bands 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.1 GHz (Region 2), 12.1-12.2 GHz (on the territory of the country listed in No. **5.489**), 12.2-12.5 GHz (Region 3), 12.5-12.75 GHz (on the territory of the countries listed in No. **5.494** and in Region 3) considered for FSS downlink are allocated to the fixed and/or mobile except aeronautical mobile on a primary basis;

*c)* that the frequency bands 14.0-14.3 GHz (on the territory of countries listed in No. **5.505**), 14.25-14.3 GHz (on the territory of countries listed in No. **5.508**), 14.3-14.4 GHz (Regions 1 and 3), and 14.4-14.47 GHz considered for FSS uplink are allocated to the fixed and/or mobile except aeronautical mobile on a primary basis,

recognizing further

*a)* that the UAS CNPC links support safe operation of UAS;

*b)* that, in this Resolution, conditions are provided for operations of CNPC links without prejudging whether the International Civil Aviation Organization (ICAO) would be able to ensure safe operation of UAS under these conditions,

*c)* that the provisions within the Standards and Recommended Practices contained in the International Convention on Civil Aviation for unmanned aircraft systems addresses the safe operation of UAS;

*Editor’s Note: Recognizing further d), e), and f) are shown as not used only to maintain alignment with the CPM text; however, at the 42nd meeting of CITEL PCC.II, these will be fully removed and renumbered when preparing the final version.*

*d)*  *not used*

*e)* *not used*

*f)* *not used*

*g)* that administrations operating terrestrial stations cannot provide an accurate prediction of the interference that might be present in the airspace being used by Unmanned Aircraft (UA) everywhere, anytime UA could fly;

*h)* that the environment in which GSO FSS is operated within the frequency bands identified by this resolution cannot support the implementation of No. **4.10**;

*i)* that Section VI of Article **22** contains limits on equivalent isotropically radiated power at off-axis angles of 3 degrees or more for earth stations of a geostationary-satellite network in the fixed-satellite service in the frequency bands 14-14.47 GHz and 29.5-30 GHz,

resolves

1 that frequency assignments to stations of GSO FSS networks operating in the frequency bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.5 GHz (space-to-Earth) in Region 3, 12.5‑12.75 GHz (space-to-Earth) in Regions 1 and 3 and 19.7-20.2 GHz (space-to-Earth), and in the frequency bands 14‑14.47 GHz (Earth-to-space) and 29.5-30.0 GHz (Earth-to-space), are permitted to be used for UAS CNPC links to communicate with earth stations on board UA operating in non-segregated airspace under the following conditions

2 that UAS CNPC operating in the frequency bands specified in *resolves* 1 are an application of the primary frequency allocations to the FSS and Resolution **156** **(WRC-15)** shall not apply;

3 that frequency assignments to UA CNPC earth stations subject to this Resolution shall be notified under No. **11.2** by the notifying administration of the FSS satellite network with which these earth stations communicate;

4 that the notifying administration for the GSO FSS network with which the UAS CNPC earth station communicates shall send to the Radiocommunication Bureau (BR) the relevant Appendix **4** notification information related to the characteristics of the UAS CNPC earth station identified as class of station “UG”;

5 that the operation of a UAS CNPC earth station within the territory under the jurisdiction of an administration shall be subject to obtaining by the notifying administration of the GSO FSS network, an explicit authorization from that administration;

*Editor’s Note: Resolves 6 is shown as not used only to maintain alignment with the CPM text; however, at the 42nd meeting of CITEL PCC.II, this Resolves will be fully removed and the Resolves will be renumbered when preparing the final version.*

6 *not used*

7 that, with respect to other satellite networks in the frequency bands referred to in *resolves* 1, the notifying administration of the GSO FSS network with which the UA CNPC earth station communicates shall ensure that its UA CNPC earth stations comply with the following conditions:

7.1 the UA CNPC earth station characteristics shall remain within the envelope of characteristics of the typical earth stations of the associated FSS satellite network as notified and published by the Radiocommunication Bureau (BR);

7.2 the operation of UA CNPC earth stations shall not cause more interference to and shall not claim more protection than that of the typical earth stations of that GSO FSS network in the same area;

7.3 the use of assignments of an FSS satellite network by UAS CNPC links shall not constrain other satellite networks beyond what is already imposed by the typical earth stations of the associated FSS satellite network during the application of the provisions of Articles **9** and **11**;

7.4 the operation of the UA CNPC earth station shall comply with the coordination agreements for the frequency assignments of the typical earth station of the associated GSO FSS network obtained under the relevant provisions of the Radio Regulations;

7.5 the operation of UAS CNPC links shall not have any impact on the relevant existing agreements reached during the FSS satellite coordination process or on the future coordination of FSS networks during the application of the provisions of the Radio Regulations;

8 that, with respect to terrestrial services in the frequency bands referred to in *resolves* 1, the notifying administration of the GSO FSS network with which the UA CNPC earth station communicates shall ensure that its UA CNPC earth stations comply with the following conditions:

8.1 the use of UAS CNPC links shall not result in additional coordination constraints on terrestrial services under Articles **9** and **11**;

8.2 unless otherwise agreed between the administrations concerned, UA CNPC earth stations shall reduce interference to terrestrial services of other administrations by meeting the power flux-density (pfd) masks contained in Annex 2 to this Resolution;

8.3 UA CNPC earth stations receiving in the frequency bands referred to in recognizing b) shall not claim protection from transmitting stations of terrestrial services operating in conformity with the Radio Regulations, No. **5.43A** does not apply and there is therefore no change of the regulatory status of UA CNPC earth stations with respect to stations of the terrestrial service;

9 that the use of frequency bands specified in *resolves* 1 by the UAS CNPC links shall be in accordance with the Convention on International Civil Aviation and its annexes that includes Standards and Recommended Practices (SARPs);

10 use frequency assignments associated with the GSO FSS networks for UAS CNPC links (see Figure 1 in Annex 1), including frequency assignments to space stations, specific or typical earth stations and earth stations on board UA, that have applied the coordination procedure under Article **9** and notification procedure under Article **11**;

11 that earth stations on board UA shall be designed and operated so as to be able to accept the interference caused by terrestrial services operating in conformity with the Radio Regulationsin the frequency bands listed in *resolves*1without complaints under Article **15**;

12 that earth stations on board UA shall be designed and operated so as to be able to operate with interference caused by other satellite networks resulting from application of Articles **9** and **11**;

13 that Article No. **4.10** does not apply to the use of networks of the FSS for the UAS CNPC links operated in the frequency bands listed in resolves 1;

14 that administrations responsible for operating UAS CNPC links shall:

*Editor’s Note: Resolves 14.1 is shown as not used only to maintain alignment with the CPM text; however, at the 42nd meeting of CITEL PCC.II, this Resolves will be fully removed and the Resolves will be renumbered when preparing the final version.*

14.1 *not used*;

14.2 act immediately when their attention is drawn to any such harmful interference, as freedom from harmful interference to UAS CNPC links is imperative to ensure their safe operation;

14.3 ensure that real-time interference monitoring, estimation and prediction of interference risks and planning solutions for potential interference scenarios are addressed by the FSS operators and the UAS operators with guidance from aviation authorities;

14.4 use techniques to maintain antenna pointing accuracy for the operation of CNPC UA ES with the associated GSO FSS satellites, without inadvertently tracking adjacent GSO satellites;

14.5 take all necessary measures so that CNPC UA ES are subject to permanent monitoring and control by a network control and monitoring centre (NCMC) or equivalent facility in order to comply with the provisions in this Resolution;

14.6 provide NCMC or equivalent facility permanent points of contact for the purpose of tracing any suspected cases of harmful interference from CNPC UA ES;

15 that, in order to protect the radio astronomy service in the frequency band 14.47‑14.5 GHz, administrations authorizing the operation of CNPC UA ES in accordance with this Resolution in the frequency band 14-14.47 GHz within line-of-sight of radio astronomy stations are urged to take all practicable steps to ensure that the emissions from the UA in the frequency band 14.47-14.5 GHz do not exceed the levels and percentage of data loss given in the most recent versions of Recommendations ITU‑R RA.769 and ITU‑R RA.1513;

instructs the Director of the Radiocommunication Bureau

1 upon receipt of the notification information referred to in *resolves*3, the BR shall examine it with respect to conformity with *resolves*7.1, conformity with *resolves* 10, and commitment to the conformity with the power flux-density (pfd) limits on the Earth’s surface specified in Annex 2 and with any agreements obtained as referred to in *resolves* 8.2;

2 if the finding from the examination in *instructs* 1 is favourable, the BR shall publish the modified or additional assignment along with the results of such examinations in the International Frequency Information Circular (BR IFIC) and the modified or additional assignment shall retain the priority date of protection with that of the existing assignment,

instructs the Secretary-General

to bring this Resolution to the attention of the Secretary General of ICAO

Annex 1 to Resolution 155 (rev.WRC‑19)

UAS CNPC links

Figure 1

Elements of UAS architecture using the FSS

Diagram

Description automatically generated

Annex 2 to Resolution 155 (rev.WRC‑23)

Protection of terrestrial services from CNPC UA ES emissions

An earth station on board UA in the frequency band 14.0-14.3 GHz shall comply with the pfd limits described below, on the territory of countries listed in No.**5.505**:

     for 0° ≤ θ ≤ 90°

where θ is the angle of arrival of the radio-frequency wave (degrees above the horizontal).

An earth station on board UA:

– in the frequency band 14.25-14.3 GHz on the territory of countries listed in No. **5.508**;

– in the frequency band 14.3-14.4 GHz in Regions 1 and 3;

– in the frequency band 14.4-14.47 GHz worldwide,

shall comply with the pfd limits described below:

     for 0° ≤ θ ≤ 90°

where θ is the angle of arrival of the radio-frequency wave (degrees above the horizontal).

NOTE – The aforementioned limits relate to the pfd and angles of arrival that would be obtained under free‑space propagation conditions.

Reason: Modifications to Resolution **155 (Rev.WRC-19)** removes provisions that are no longer required, improves clarity on actionable responsibilities, and eliminates duplications. Makes clear that RR No. 4.10 does not apply, makes clear that UAS CPNC links do not have any higher status than other FSS links, and shall not impact the coordination process or agreements.

Support:

USA

**MOD** PP/1.8/8

APPENDIX 4 (REV.WRC‑19)

Consolidated list and tables of characteristics for use in the  
application of the procedures of Chapter III

ANNEX 2

Characteristics of satellite networks, earth stations  
or radio astronomy stations[[3]](#footnote-6)2    (Rev.WRC‑23)

**Table of characteristics to be submitted for space and radio astronomy services**(Rev.WRC ‑23)

**TABLE A**

**GENERAL CHARACTERISTICS OF THE SATELLITE NETWORK OR SYSTEM,  
EARTH STATION OR RADIO ASTRONOMY STATION**     (Rev.WRC‑23)

| **Items in Appendix** | ***A \_ GENERAL CHARACTERISTICS OF THE SATELLITE NETWORK,  EARTH STATION OR RADIO ASTRONOMY STATION*** | ***Advance publication of a geostationary- satellite network*** | ***Advance publication of a non-geostationary-satellite network subject to coordination under Section II  of Article 9*** | ***Advance publication of a non-geostationary-satellite network not subject to coordination under Section II  of Article 9*** | ***Notification or coordination of a geostationary-satellite network (including space operation functions under Article 2A of Appendices 30 or 30A)*** | ***Notification or coordination of a non-geostationary-satellite network*** | ***Notification or coordination of an earth station (including notification under  Appendices 30A or 30B)*** | ***Notice for a satellite network in the broadcasting-satellite service under  Appendix 30 (Articles 4 and 5)*** | ***Notice for a satellite network  (feeder-link) under Appendix 30A  (Articles 4 and 5)*** | ***Notice for a satellite network in the fixed- satellite service under Appendix 30B  (Articles 6 and 8)*** | ***Items in Appendix*** | ***Radio astronomy*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| \* \* \* | **\* \* \*** |  |  |  |  |  |  |  |  |  | \* \* \* |  |
| **A.25** | **COMPLIANCE WITH NOTIFICATION OF GSO FSS NETWORKS USING EARTH STATIONS USING CNPC LINKS** |  |  |  |  |  |  |  |  |  |  |  |
| A.25.a | information on satellite network assignments for which the UG station class shall be applied  Required only for the bands listed in r*esolves* 1 of Resolution **155** **(Rev.WRC-23)**, when a CNPC UA earth station in the fixed-satellite service communicates with a space station in the fixed-satellite service |  |  |  | **+** |  |  |  |  |  | A.25.a |  |
| A.25.b | a commitment that unless an agreement is received pursuant to *resolves* 8.2 of Resolution **155 (Rev.WRC-23)** that the notifying administration shall meet the pfd limits in Annex 2 of Resolution 155 (Rev.WRC-23)  Required only for the bands and territories listed in *recognizing* b)of Resolution **155 (Rev.WRC-23)** when an earth station in the fixed-satellite service using CNPC links communicates with a space station in the fixed-satellite service |  |  |  | **+** |  |  |  |  |  | A.25.b |  |
| A.25.c | information on Network Control and Monitoring Centre NCMC or equivalent facility permanent points of contact consistent with *resolves* 14.6 of Resolution **155 (Rev.WRC-23)**  Required only for the bands listed in r*esolves* 1 of Resolution **155** **(Rev.WRC-23)**, when a CNPC UA earth station in the fixed-satellite service communicates with a space station in the fixed-satellite service |  |  |  | **+** |  |  |  |  |  | A.25.c |  |

Support:

USA

**SUP** PP/1.8/9

RESOLUTION 171 (WRC‑19)

Review and possible revision of Resolution 155 (Rev.WRC‑19) and  
No. 5.484B in the frequency bands to which they apply

Reason: Consequential action.

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1. In ICAO, an “unmanned aircraft system” (UAS) is referred to as a “*Remotely piloted aircraft system*” (RPAS), the CNPC link is referred to as *C2 Link* (Command and Control). [↑](#footnote-ref-1)
2. \* May also be used consistent with international standards and practices approved by the responsible civil aviation authority. [↑](#footnote-ref-3)
3. [↑](#footnote-ref-6)