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| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 1 to Document 16(Add.18)-E** |
|  | **7 October 2019** |
|  | **Original: English** |
|  | |
| European Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 4 | |

4 in accordance with Resolution **95 (Rev.WRC-07)**, to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

# Resolution 155 (WRC-15)

Introduction

CEPT and ITU-R performed studies on the power-flux density (pfd) limits in Annex 2 of Resolution **155 (WRC-15)**. Based on those studies, CEPT proposes revised limits. Consequential changes limited to the content of *resolves* 15 and 16 of Resolution **155 (WRC-15)** are proposed.

Proposals

MOD EUR/16A18A1/1

RESOLUTION 155 (rev.WRC-19)

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[[1]](#footnote-1)\*

The World Radiocommunication Conference (Sharm el-Sheikh, 2019),

...

resolves

...

15 that, in order to implement *resolves* 14 above, the power flux-density hard limits developed for UAS CNPC links to protect the fixed service are provided in Annex 2;

16 that, in order to protect the radio astronomy service in the frequency band 14.47‑14.5 GHz, administrations operating UAS 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;

17 to consider the progress obtained by ICAO in the process of preparation of SARPs for UAS CNPC links, to review this Resolution at WRC‑23, taking into account the results of the implementation of Resolution **156 (WRC‑15)**, and to take necessary actions as appropriate;

18 that ITU Radiocommunication Sector (ITU‑R) studies on technical, operational and regulatory aspects in relation to the implementation of this Resolution shall be completed, together with the adoption of relevant ITU‑R Recommendations defining the technical characteristics of CNPC links and conditions of sharing with other services,

...

instructs the Director of the Radiocommunication Bureau

...

4 not to process satellite network filing submissions by administrations with a new class of a station for earth stations providing UA CNPC links before *resolves* 1-12 and 14-18 of this Resolution are implemented;

...

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

UAS CNPC links

Figure 1

Elements of UAS architecture using the FSS



Annex 2 to Resolution 155 (rev. WRC‑19)

Protection of the fixed service from UAS CNPC emissions

The fixed service is allocated by table entries and footnotes in several countries with co-primary status with FSS. Conditions of UA using CNPC shall be such that the fixed service is protected from any harmful interference as follows:

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

for 0° ≤ ≤ 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 band14.3-14.4GHz in Regions 1 and 3;

– in the frequency band 14.4-14.47GHz worldwide,

shall comply with the power flux-density limits described below:

for 0° ≤ ≤ 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.

**Reasons:** *resolves* 16 of Resolution **155 (WRC-15)** instructs for a revision of the examples for pfd hard limits contained in Annex 2 of this Resolution. CEPT and ITU-R performed studies on pfd hard limits respecting the requirements for the protection of the applications in the fixed service. The revised pfd hard limits reflect the results of these studies.

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1. \* May also be used consistent with international standards and practices approved by the responsible civil aviation authority. [↑](#footnote-ref-1)