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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| **PLENARY MEETING** | **Addendum 13 to Document 9-E** |
|  | **24 June 2015** |
|  | **Original: English** |
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| European Common Proposals | |
| Proposals for the work of the conference | |
|  | |
| Agenda item 1.13 | |

1.13 to review No. **5.268** with a view to examining the possibility for increasing the 5 km distance limitation and allowing space research service (space-to-space) use for proximity operations by space vehicles communicating with an orbiting manned space vehicle, in accordance with Resolution **652 (WRC‑12)**;

Introduction

The band 410-420 MHz is allocated to the fixed, mobile (except aeronautical mobile) and space research (space-to-space) services on a primary basis subject to No. 5.268. This provision restricts the space research service (SRS) (space-to-space) to operations within 5 km of an orbiting manned space vehicle and identifies further use of the band by SRS (space-to-space) for extra-vehicular activities (EVA).

The use of the band 410-420 MHz for proximity operations by space vehicles approaching orbiting manned space vehicles, such as the International Space Station (ISS), would be advantageous as the propagation and physical properties of this frequency range enable comparable coverage performance in the highly multipath environment of the ISS. The space vehicles, whether manned or robotic, operating in the vicinity or approaching the ISS or other orbiting manned space vehicles, need to communicate over distances greater than 5 km to ensure safe operations and docking manoeuvers.

The power flux-density (pfd) limits contained in No. 5.268 ensure the protection of terrestrial stations operating in the fixed and mobile services independently of the distance from, or the source of, space-to-space communications in the SRS.

These European Proposals are to remove the distance restriction contained in No. 5.268 while keeping the pfd limits unchanged and to remove the limitation to extra-vehicular activities.

ARTICLE 5

Frequency allocations

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

MOD EUR/9A13/1

410-460 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 410-420 FIXED  MOBILE except aeronautical mobile  SPACE RESEARCH (space-to-space) MOD 5.268 | | |

MOD EUR/9A13/2

5.268 Use of the band 410-420 MHz by the space research service is limited to space-to-space links for communications with an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from stations of the space research service (space-to-space) in the band 410-420 MHz shall not exceed −153 dB(W/m2) for 0° ≤ δ ≤ 5°, −153 + 0.077 (δ − 5) dB(W/m2) for 5° ≤ δ ≤ 70° and −148 dB(W/m2) for 70° ≤ δ ≤ 90°, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. No. **4.10** does not apply.     (WRC‑15)

**Reasons:** To remove the distance restriction while maintaining the same level of protection to terrestrial services by keeping the pfd limits unchanged.

SUP EUR/9A13/3

RESOLUTION 652 (WRC‑12)

Use of the band 410-420 MHz by the space research service (space-to-space)

**Reasons:** Studies on this agenda item are completed.

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