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| **World Radiocommunication Conference (WRC-15)Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Document 44-E** |
|  | **8 October 2015** |
|  | **Original: Arabic** |
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| United Arab Emirates/Mauritania (Islamic Republic of) |
| Proposals for the work of the conference |
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| Agenda item 1.1 |

1.1 to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC‑12)**;

Frequency band 3 400-3 600 MHz

Resolution **233 (WRC-12):** Studies on frequency-related matters on International Mobile Telecommunications and other terrestrial mobile broadband applications.

Introduction

Mobile communications including mobile broadband communications contribute positively to the economic and social developments of both developed and developing countries.

Resolution 233 (WRC-12) states that adequate and timely availability of spectrum and supporting regulatory provisions, as well as improved technologies, is essential to support future growth of IMT and other mobile broadband systems. Harmonized worldwide frequency bands and harmonized frequency arrangements for these systems are highly desirable in order to facilitate global roaming and the benefits of economies of scale.

Studies on future spectrum requirements and potential candidate frequency bands for IMT and other terrestrial mobile broadband applications were conducted and, pursuant to paragraph 2 of *resolves to invite ITU-R* of Resolution 233 (WRC-12) administrations proposed to study the following frequency bands: 470-694/698 MHZ, 1 300-1 525 MHZ, 1 695-1 710 MHz, 2 025-2 110 MHz, 2 200-2 290 MHz, 2 700-2 900 MHz, 2 900-3 100 MHz, 3 300-3 400 MHZ, 3 400-3 600 MHz, 3 600-4 200 MHz, 4 400-4 900 MHz, 4 800-5 000 MHz, 5 350-5 470 MHz, 5 725-5 850 MHz and 5 925-6 425 MHz.

Among the bands studied was the 3 400-3 600 MHz frequency range. Sharing studies between fixed-satellite service and mobile service/IMT in the band 3 400-3 600 MHz have shown that this frequency band has been used by the FSS for space-to-Earth links, together with the 5 850-6 725 MHz frequency band for Earth-to-space links, since the 1970s. The related technology is mature and equipment is available at low cost.

Furthermore, the wide coverage of satellites in these frequency bands enables services to be provided to developing countries, to sparsely populated areas and over large distances (e.g. providing programme content and data distribution between continents).

Sharing studies have been carried out in ITU-R that show high incompatibility between the IMT and satellite services. The separation distances between the FSS and IMT stations need to be of the order of hundreds of kilometers

Proposal

Based on the results of the studies and the analysis thereof concerning this point, the signatory parties propose no modification of the Radio Regulations for the band 3 400-3 600 MHz.

There follow the procedural and regulatory considerations resulting from the proposal:

ARTICLE 5

Frequency allocations

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

NOC UAE/MTN/44/1

2 700-4 800 MHz

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| --- |
| Allocation to services |
| Region 1 | Region 2 | Region 3 |
| 3 400-3 600FIXEDFIXED-SATELLITE(space-to-Earth)Mobile 5.430ARadiolocation5.431 | 3 400-3 500FIXEDFIXED-SATELLITE (space-to-Earth)AmateurMobile 5.431ARadiolocation 5.4335.282 | 3 400-3 500FIXEDFIXED-SATELLITE (space-to-Earth)AmateurMobile 5.432BRadiolocation 5.4335.282 5.432 5.432A |
| 3 500-3 700FIXEDFIXED-SATELLITE (space-to-Earth)MOBILE except aeronautical mobileRadiolocation 5.433 | 3 500-3 600FIXEDFIXED-SATELLITE (space-to-Earth)MOBILE except aeronautical mobile 5.433ARadiolocation 5.433 |

**Reasons:** No change in relation to the frequency band 3 400-3 600 MHz because:

– The frequency band 3 400-3 600 MHz was dealt with under agenda item 1.4 of WRC-07. After lengthy and extensive discussion, consensus emerged for Regions 1 and 3 to allocate the frequency band to the MS and/or identify it for IMT in footnotes (RR Nos. 5.430A, 5.432A, 5.432B, 5.433A), as the case may be. The principles based on which consensus was reached at WRC-07 need to be maintained.

– Certain conclusions of the studies indicate high incompatibility between the IMT and satellite services, where FSS is and will be extensively deployed.

– The earth stations in this band are already deployed worldwide in all countries providing critical services (including safety).

– The band enjoys a high degree of resistance to signal fading as a result of rain, thus increasing reliance on this band in regions of heavy rain or in vital services requiring a high availability ratio, such as telemetry, tracking and command systems for satellite services and banking systems. It is also used for feeder links for the mobile satellite service.

– Numerous applications and diverse services are offered by the various satellite operators. These applications and services include the following:

• Financial and banking services use this band to serve vast and remote regions and improve the connectivity of rural areas in all parts of the country;

• Very small aperture terminal (VSAT) networks;

• Internet services, point to point links;

• Satellite news gathering, television and data broadcasting to satellite;

• Satellite direct-to-home (DTH) receivers;

• Feeder links for the mobile-satellite service;

• Satellites operating in this band are used extensively for safety and disaster relief operations;

• This band is also used for telemetry, tracking and command (TT&C) under the FSS allocation.

– It is not possible to provide satellite services operating in this band, in other satellite bands or by terrestrial means in view of the fact that the technology is mature and equipment is available at prices 20% to 100% less than comparable equipment. Accordingly, it is easier and more feasible to deploy it in developing countries where price is an important factor. The enormous number of satellites represents approximately USD 42-51 billion worth of investment in equipment used in orbit, in addition to investment in ground infrastructure.

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