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| **World Radiocommunication Conference (WRC-15) Geneva, 2–27 November 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| PLENARY MEETING | **Addendum 1 to Document 85-E** |
|  | **16 October 2015** |
|  | **Original: English** |
|  | |
| Burundi (Republic of), Kenya (Republic of), Uganda (Republic of),  Rwanda (Republic of), Tanzania (United Republic of) | |
| Proposals for the work of the conference | |
|  | |
| 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)**;

Introduction

East African Communications Organization (EACO) member countries namely Burundi, Kenya, Uganda, Rwanda and Tanzania have considered all the proposed candidate bands for IMT. EACO member countries’ positions on each band are summarized in the table below:

| Candidate Band | EACO proposed method in CPM report  to satisfy the agenda item |
| --- | --- |
| 470-694/698 | A1 |
| 1 350-1 400 | A |
| 1 427-1 452 | C1b |
| 1 452-1 492 | C1 |
| 1 492-1 518 | A |
| 1 518-1 525 | A |
| 1 695-1 710 | A |
| 2 700-2 900 | A |
| 3300-3400 | C2 |
| 3400-3600 | No common position |
| 3 600-3 700 | A |
| 3 700-3 800 | A |
| 3 800-4 200 | A |
| 4 400-4 500 | A |
| 4 500-4 800 | A |
| 4 800-4 990 | A |
| 5 350-5 470 | A |
| 5 725-5 850 | A |
| 5 925-6 425 | A |

Proposals

Burundi (Republic of), Kenya (Republic of), Uganda (Republic of), Rwanda (Republic of), Tanzania (United Republic of) (EACO member countries) propose the following on each candidate band for IMT:

Band 470-694/698 MHz

ARTICLE 5

Frequency allocations

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

NOC BDI/KEN/UGA/RRW/TZA/85A1/1

460-890 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 460-470 FIXED  MOBILE 5.286AA  Meteorological-satellite (space-to-Earth)  5.287 5.288 5.289 5.290 | | |
| 470-790  BROADCASTING  5.149 5.291A 5.294 5.296  5.300 5.304 5.306 5.311A 5.312 5.312A | 470-512  BROADCASTING  Fixed  Mobile  5.292 5.293 | 470-585  FIXED  MOBILE  BROADCASTING  5.291 5.298 |
| 512-608  BROADCASTING  5.297 |
| 585-610  FIXED  MOBILE  BROADCASTING  RADIONAVIGATION  5.149 5.305 5.306 5.307 |
| 608-614  RADIO ASTRONOMY  Mobile-satellite except aeronautical mobile-satellite (Earth-to-space) |
| 610-890  FIXED  MOBILE 5.313A 5.317A  BROADCASTING |
| 614-698  BROADCASTING  Fixed  Mobile  5.293 5.309 5.311A |

**Reasons:** The band 470-694 MHz is the only band reserved for Digital Terrestrial Television (DTT) Broadcasting in Region 1. This band is extensively used for DTT in EACO member countries to the extent that it is not even enough for some EACO countries. Studies conducted on the sharing between IMT services and existing broadcasting services in the band show that the co-channel sharing in the same geographical location is not feasible.

Band 1 350-1 400 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/2

1 300-1 525 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 1 350-1 400  FIXED  MOBILE  RADIOLOCATION  5.149 5.338 5.338A 5.339 | 1 350-1 400  RADIOLOCATION 5.338A  5.149 5.334 5.339 | |

**Reasons:** The band is assigned to Military and Civil Aviation Radars in Some EACO Member countries. The sharing between IMT services and Radiolocation Services in the same geographical area is not feasible.

Band 1 427-1 452 MHz

ADD BDI/KEN/UGA/RRW/TZA/85A1/3

5.I11 In *Burundi (Republic of), Kenya (Republic of), Uganda (Republic of), Rwanda (Republic of), Tanzania (United Republic of)*, the frequency band 1 427‑1 452 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Such use is subject to the application of Resolution 750 (Rev.WRC‑15), which includes conditions of use, as appropriate.     (WRC‑15)

**Reasons:** Fixed services allocated to this band are phasing out. For efficiency frequency spectrum usage, this band can be used for Mobile Broadband (IMT).

Band 1 452-1 492 MHz

ARTICLE 21

Terrestrial and space services sharing frequency bands above 1 GHz

Section V − Limits of power flux-density from space stations

MOD BDI/KEN/UGA/RRW/TZA/85A1/4

TABLE **21-4**     (Rev.WRC‑15)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Frequency band | Service\* | Limit in dB(W/m2) for angles of arrival (δ) above the horizontal plane | | | | | Reference bandwidth |
| 0°-5° | | 5°-25° | 25°-90° | |
| 1 452‑1 492 MHz7A | Broadcasting-satellite | [−113] | [−113] | | [−113] | 1 MHz | |

ADD BDI/KEN/UGA/RRW/TZA/85A1/5

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7A21.16.1A These limits do not apply over the territory of Burundi (Republic of), Kenya (Republic of), Uganda (Republic of), Rwanda (Republic of), Tanzania (United Republic of).

**Reasons:** This band has been reserved for Terrestrial Digital Audio Broadcasting (T-DAB) for a long time. However this technology has never shown any sign of progress. For efficiency frequency spectrum usage, this band can be used for Mobile Broadband (IMT).

Band 1 492-1 518 MHz

ARTICLE 5

Frequency allocations

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

NOC BDI/KEN/UGA/RRW/TZA/85A1/6

1 300-1 525 MHz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Allocation to services | | | | |
| Region 1 | Region 2 | | Region 3 | |
| 1 492-1 518  FIXED  MOBILE except aeronautical mobile  5.341 5.342 | | 1 492-1 518  FIXED  MOBILE 5.343  5.341 5.344 | | 1 492-1 518  FIXED  MOBILE  5.341 |

**Reasons:** Some East African Community member countries have assigned this band for fixed services.

Band 1 518-1 525 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/7

1 300-1 525 MHz

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Allocation to services | | | | |
| Region 1 | Region 2 | | Region 3 | |
| 1 518-1 525  FIXED  MOBILE except aeronautical mobile  MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A  5.341 5.342 | | 1 518-1 525  FIXED  MOBILE 5.343  MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A  5.341 5.344 | | 1 518-1 525  FIXED  MOBILE  MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A  5.341 |

**Reasons:** This band is reserved for Mobile Satellite services in Rwanda. ITU studies show that co-frequency sharing between MSS and IMT services in the same geographical area is not feasible.

Band 1 695-1 710 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/8

1 660-1 710 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 1 690-1 700  METEOROLOGICAL AIDS  METEOROLOGICAL-SATELLITE (space-to-Earth)  Fixed  Mobile except aeronautical mobile | 1 690-1 700  METEOROLOGICAL AIDS  METEOROLOGICAL-SATELLITE (space-to-Earth) | |
| 5.289 5.341 5.382 | 5.289 5.341 5.381 | |
| 1 700-1 710  FIXED  METEOROLOGICAL-SATELLITE (space-to-Earth)  MOBILE except aeronautical mobile | | 1 700-1 710  FIXED  METEOROLOGICAL-SATELLITE (space-to-Earth)  MOBILE except aeronautical mobile |
| 5.289 5.341 | | 5.289 5.341 5.384 |

**Reasons:** The band 1 695-1 710 MHz is allocated to Meteorological Satellite services in EACO member countries. The sharing between Meteorological Satellite services and Mobile Services would be complicated.

Band 2 700-2 900 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/9

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 2 700-2 900 AERONAUTICAL RADIONAVIGATION 5.337  Radiolocation  5.423 5.424 | | |

**Reasons:** The band 2 700-2 900 MHz is reserved for Aeronautical Radionavigation Radars. Studies show that co-channel sharing between Aeronautical Radionavigation services and Mobile Services in the same geographical area is not feasible.

Band 3 300-3 400 MHz

MOD BDI/KEN/UGA/RRW/TZA/85A1/10

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 3 300-3 400  RADIOLOCATION | 3 300-3 400  RADIOLOCATION  Amateur  Fixed  Mobile | 3 300-3 400  RADIOLOCATION  Amateur |
| 5.149 5.429 5.430 5.Y11 | 5.149 | 5.149 5.429 |

ADD BDI/KEN/UGA/RRW/TZA/85A1/11

5.Y11 IMT stationsin the mobile service operating in the frequency band 3 300-3 400 MHz shall be subject to [*measures to be determined, either in this footnote or in an associated WRC Resolution*] to protect the fixed-satellite service in the 3 400-4 200 MHz band.     (WRC‑15)

**Reasons:** Some EACO member countries have fixed wireless access (Wimax) and others have no assignments in the band 3 300-3 400 MHz. EACO member countries would benefit from IMT services in this band on condition that FSS services in adjacent band are protected.

Band 3 600-3 700 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/12

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 3 600-4 200  FIXED  FIXED-SATELLITE (space-to-Earth)  Mobile | ... | 3 600-3 700  FIXED  FIXED-SATELLITE (space-to-Earth)  MOBILE except aeronautical mobile  Radiolocation  5.435 |

**Reasons:** – The band is heavily used by VSAT for internet, links, TVs, SNG and direct-to-home (DTH) receivers.

– Due to its resistance to rain and other atmosphere gaseous attenuation. C band is the preferred band EACO member countries.

– co-channel sharing between IMT and FSS would require hundreds of Km separation distance.

Band 3 700-3 800 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/13

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| ... | 3 700-4 200  FIXED  FIXED-SATELLITE (space to-Earth)  MOBILE except aeronautical mobile | |

**Reasons:** – The band is heavily used by VSAT for internet, links, TVs, SNG and direct-to-home (DTH) receivers.

– Due to its resistance to rain and other atmosphere gaseous attenuation. C band is the preferred band EACO member countries.

– Co-channel sharing between IMT and FSS would require hundreds of Km separation distance.

Band 3 800-4 200 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/14

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| ... | 3 700-4 200  FIXED  FIXED-SATELLITE (space to-Earth)  MOBILE except aeronautical mobile | |

**Reasons:** – The band is heavily used by VSAT for internet, links, TVs, SNG and direct-to-home (DTH) receivers.

– Due to its resistance to rain and other atmosphere gaseous attenuation. C band is the preferred band EACO member countries.

– Co-channel sharing between IMT and FSS would require hundreds of Km separation distance.

Band 4 400-4 500 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/15

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 4 400-4 500FIXED  MOBILE 5.440A | | |

**Reasons:** The band 4 400-4 500 MHz is heavily used by Fixed Services in EACO member countries. The studies show that the co-channel sharing between IMT services and fixed services would require significant separation distance.

Band 4 500-4 800 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/16

2 700-4 800 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 4 500-4 800 FIXED  FIXED-SATELLITE (space-to-Earth) 5.441  MOBILE 5.440A | | |

**Reasons:** – The band 4 500-4 800 MHz is used for VSAT uplink in EACO countries.

– Due to its resistance to rain and other atmosphere gaseous attenuation. C band is the preferred band in EACO member countries.

– Separation distance is required to share with IMT.

– Deployment of IMT would constrain future FSS earth stations from being deployed in the same area.

Band 4 800-4 990 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/17

4 800-5 570 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 4 800-4 990 FIXED  MOBILE 5.440A 5.442  Radio astronomy  5.149 5.339 5.443 | | |

**Reasons:** – The band 4 800-4 990 MHz is heavily used for fixed services in EACO countries.

– ITU studies show that co-channel sharing requires separation distance of more than 100 Km in some scenarios.

– The identification of this band for IMT would affect current and future FS in the band.

Band 5 350-5 470 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/18

4 800-5 570 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 5 350-5 460 EARTH EXPLORATION-SATELLITE (active) 5.448B  RADIOLOCATION 5.448D  AERONAUTICAL RADIONAVIGATION 5.449  SPACE RESEARCH (active) 5.448C | | |
| 5 460-5 470 EARTH EXPLORATION-SATELLITE (active)  RADIOLOCATION 5.448D  RADIONAVIGATION 5.449  SPACE RESEARCH (active)  5.448B | | |

**Reasons:** – The band 5 350-5 470 MHz is allocated to Aeronautical radionavigation -airborne weather radar in EACO member countries.

– Members of ITU-R were unable to reach agreement on the applicability of specific additional RLAN mitigation techniques for sharing with Radars.

– Some additional RLAN mitigation techniques to enable sharing are being studied by the ITU-R but no conclusions can be drawn at this time.

– The band cannot be identified for IMT until the studies are finalized.

Band 5 725-5 850 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/19

5 570-7 250 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 5 725-5 830  FIXED-SATELLITE (Earth-to-space)  RADIOLOCATION  Amateur | 5 725-5 830  RADIOLOCATION  Amateur | |
| 5.150 5.451 5.453 5.455 5.456 | 5.150 5.453 5.455 | |
| 5 830-5 850  FIXED-SATELLITE (Earth-to-space)  RADIOLOCATION  Amateur  Amateur-satellite (space-to-Earth) | 5 830-5 850  RADIOLOCATION  Amateur  Amateur-satellite (space-to-Earth) | |
| 5.150 5.451 5.453 5.455 5.456 | 5.150 5.453 5.455 | |

**Reasons:** – ITU studies on this band are not conclusive.

Band 5 925-6 425 MHz

NOC BDI/KEN/UGA/RRW/TZA/85A1/20

5 570-7 250 MHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 5 925-6 700 FIXED 5.457  FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B  MOBILE 5.457C  5.149 5.440 5.458 | | |

**Reasons:** – The band 5 925-6 425 MHz is used for VSAT uplink and fixed services in EACO countries.

– Due to its resistance to rain and other atmosphere gaseous attenuation. C band is the preferred band EACO countries.

– Separation distance is required to share FS and FSS with IMT.

– Deployment of IMT would constrain future FSS earth stations and FS from being deployed in the same area.

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