

**CROSS-BORDER FREQUENCY COORDINATION  
AGREEMENT  
HARMONIZED CALCULATION METHOD FOR AFRICA  
(HCM4A)**

**On the coordination of frequencies between 29.7 MHz and 43.5 GHz  
For the fixed service and the land mobile service.**

**Adopted on [01.01.2022]**

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## **Annexes**

### **Part A**

#### Annexes Related to the Land Mobile Service

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- Annex 2A Data exchange in the Land Mobile Service
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#### Annexes Related to the Fixed Service

- Annex 2B Data exchange in the Fixed Service
- Annex 3B Determination of the Masks Discrimination and the Net Filter Discrimination in the Fixed Service
- Annex 7 Provisions on measurement procedures in the Fixed Service and the Land Mobile Service
- Annex 8B Method for combining the horizontal and vertical antenna patterns for the Fixed Service
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## Preamble

The representatives of the administrations listed below have concluded the present Agreement, under Article 6 of the International Telecommunication Union Radio Regulations (ITU RR), on the coordination of frequencies between 29.7 MHz and 43.5 GHz for the purposes of preventing mutual harmful interference to the Fixed and Land Mobile Services and optimising the use of the frequency spectrum above all on the basis of mutual agreements.

This Agreement is referred to as Harmonized Calculation Method for Africa Agreement (HCM4A Agreement)[2021].

1. Algeria	28. Libya
2. Angola	29. Madagascar
3. Benin	30. Malawi
4. Botswana	31. Mali
5. Burkina-Faso	32. Mauritania
6. Burundi	33. Mauritius
7. Cameroon	34. Morocco
8. Cabo-Verde	35. Mozambique
9. Central African Republic	36. Namibia
10. Chad	37. Niger
11. Comoros	38. Nigeria
12. Côte d'Ivoire	39. Republic of Congo
13. Democratic Republic of Congo	40. Rwanda
14. Djibouti	41. São Tomé and Príncipe
15. Egypt	42. Senegal
16. Eritrea	43. Seychelles
17. Eswatini	44. Sierra-Leone
18. Ethiopia	45. Somalia
19. Equatorial Guinea	46. South Africa
20. Gabon	47. South Sudan
21. Gambia	48. Sudan
22. Ghana	49. Tanzania
23. Guinea	50. Togo
24. Guinea-Bissau	51. Tunisia
25. Kenya	52. Uganda
26. Lesotho	53. Zambia
27. Liberia	54. Zimbabwe

## Article 1

### 1 Definitions

The definitions used in this Agreement shall be those of Article 1 of the ITU Radio Regulations as well as those listed in this Section.

#### 1.1 Administrations

Administration here refers to the body responsible for implementation of the HCM4A Agreement

Algeria	ALG	Agence Nationale des Fréquences (ANF)
Angola	AGL	Instituto Angolano das Comunicações (INACOM)
Benin	BEN	Autorité de Régulation des Communications Electroniques et de la Poste (ARCEP-BENIN)
Botswana	BOT	Botswana Communications Regulatory Authority (BOCRA)
Burkina Faso	BFA	Autorité de Régulation des Communications électroniques et des Postes (ARCEP)
Burundi	BDI	Agence de Régulation et de Contrôle des Télécommunications (ARCT)
Cameroon	CME	Agence de Régulation des Télécommunications (ART)
Cape Verde	CPV	Agência Nacional das Comunicações (ANAC)
Central African Republic	CAF	Agence de Régulation des Télécommunications (ART)
Chad	TCD	Autorité de Régulation des Communications Electroniques et des Postes (ARCEP)
Comoros	COM	Autorité Nationale de Régulation des Technologies de l'information et de La Communication - ANRTIC
Republic of Congo	COG	Agence de Régulation des Postes et des Communications Electroniques (ARPCE)
Côte d'Ivoire	CTI	Agence Ivoirienne de Gestion des Fréquences (AIGF)
Democratic Republic of the Congo	COD	Autorité de Régulation de la Poste et des Télécommunications du Congo (ARPTC)
Djibouti	DJI	Ministère de la Communication, chargé des Postes et des Télécommunications (MC-PT)
Egypt	EGY	National Telecommunication Regulatory Authority (NTRA)

Equatorial Guinea	GNE	Órgano Regulador de las Telecomunicaciones (ORTEL)
Eritrea	ERI	Ministry of Transport and Communication – Standard and Regulation Division (MTCSRD)
Ethiopia	ETH	Ethiopian Communications Authority (ECA)
Eswatini	SWZ	Eswatini Communications Commission (ESCCOM)
Gabon	GAB	Agence Nationale des Infrastructures Numériques et des Fréquences (ANINF)
Gambia	GMB	Public Utilities Regulatory Authority (PURA)
Ghana	GHA	National Communication Authority (NCA)
Guinea	GUI	Autorité de Régulation des Postes et Télécommunications (ARPT)
Guinea-Bissau	GNB	Autoridade Reguladora Nacional da Tecnologias de Informação e Comunicação (ARN – TIC)
Kenya	KEN	Communications Authority of Kenya (CA)
Lesotho	LSO	Lesotho Communications Authority (LCA)
Liberia	LBR	Liberia Telecommunications Authority (LTA)
Libya	LBY	General Authority of Communication and Informatics (CIM)
Madagascar	MDG	Office Malgache d'Etudes et de Régulation des Télécommunications (OMERT)
Malawi	MWI	Malawi Communications Regulatory Authority (MACRA)
Mali	MLI	Autorité Malienne de Régulation des Télécommunications, des TIC et des Postes (AMRTP)
Mauritania	MTN	Autorité de Régulation, Mauritanie (ARM)
Mauritius	MAU	Information & Communication Technologies Authority (ICTA)
Morocco	MRC	Agence Nationale de Réglementation des Télécommunications (ANRT)
Mozambique	MOZ	Instituto Nacional das Comunicações de Moçambique (INCM)
Namibia	NMB	Communications Regulatory Authority of Namibia (CRAN)
Niger	NGR	Autorité de Régulation des Communications Electroniques et de la Poste (ARCEP)
Nigeria	NIG	Nigerian Communications Commission (NCC)
Rwanda	RRW	Rwanda Utilities Regulatory Authorities (RURA)

São Tomé and Príncipe	STP	Autoridade Geral de Regulação (AGER)
Senegal	SEN	Autorité de Régulation des Télécommunications et des Postes (ARTP)
Seychelles	SEY	Department of Information Communications Technology, Office of the President
Sierra Leone	SRL	National Telecommunication Commission (NATCOM)
Somalia	SOM	National Communications Authority (NCA)
South Africa	AFS	Independent Communications Authority of South Africa (ICASA)
Sudan	SDN	The Telecommunications and Post Regulatory Authority (TPRA)
South Sudan	SSD	National Communications Authority (NCA)
Tanzania	TZA	Tanzania Communications Regulatory Authority (TCRA)
Togo	TGO	Autorité de Régulation des Communications Electroniques et des Postes (ARCEP)
Tunisia	TUN	Agence Nationale des Fréquences (ANF)
Uganda	UGA	Uganda Communications Commission (UCC)
Zambia	ZMB	Zambia Information and Communication Technology Authority (ZICTA)
Zimbabwe	ZWE	Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ)

## 1.2 Frequencies

1.2.1 Frequencies in the bands listed below allocated for the Land Mobile Service in the countries concerned shall be coordinated under the terms of this Agreement.

29.7	-	47	MHz	
68	-	74.8	MHz	
75.2	-	87.5	MHz	
146	-	149.9	MHz	
150.05	-	174	MHz	
380	-	387	MHz	
390	-	397	MHz	
406.1	-	430	MHz	
440	-	470	MHz	
1 694	-	960	MHz	For GSM and IMT
1 1427	-	1518	MHz	For IMT <sup>1</sup>

<sup>1</sup> The band 1427-1518 is identified for IMT in Region 1 including 44 African countries in RR footnote 5.346. In Algeria, Angola, Saudi Arabia, Bahrain, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Kenya, Kuwait, Lesotho, Lebanon, Liberia,

1	1710	-	1785	MHz	For GSM and IMT
1	1805	-	1880	MHz	For GSM and IMT
1	1900	-	1980	MHz	For IMT
1	2010	-	2025	MHz	For IMT
1	2110	-	2170	MHz	For IMT
1	2300	-	2400	MHz	For IMT
1	2500	-	2690	MHz	For IMT
1	3300		3400	MHz	For IMT <sup>2</sup>
2	3400	-	3600	MHz	For IMT

1.2.2 For the Land Mobile Service in frequency bands other than those defined in article 1.2.1 and for all other services in these frequency bands, the coordination procedure set out in this Agreement may be used, and, if necessary, the technical parameters shall be agreed separately.

1.2.2.1 The coordination procedure laid down in this Agreement for the Land Mobile Service is only valid if in both countries involved in the coordination process the respective frequency band is allocated to the Land Mobile Service and the respective frequency falls under the responsibility of the Administrations.

1.2.3 Frequencies in the bands listed below, used in the countries concerned for the Fixed Service shall be coordinated under the terms of this Agreement.

	Frequency range				
1	1350	-	1375	MHz	Rec. ITU-R F.1242 Paired with 1492-1517 MHz
2	1375	-	1400	MHz	Rec. ITU-R F.1242 Paired with 1427-1452 MHz
3	1427	-	1452	MHz	Rec. ITU-R F.1242 Paired with 1375-1400 MHz or 1492-1517 MHz
4	1492	-	1517	MHz	Rec. ITU-R F.1242 Paired with 1350-1375 MHz or 1427-1452 MHz
5	2025	-	2110	MHz	Rec. ITU-R F.1098 Paired with 2200-2290 MHz
6	2200	-	2290	MHz	Rec. ITU-R F.1098 Paired with 2025-2110 MHz
7	3400	-	4200	MHz	Rec. ITU-R F.635
8	5925	-	6425	MHz	Rec. ITU-R F.383
9	6425	-	7125	MHz	Rec. ITU-R F.384
10	7110	-	7900	MHz	Rec. ITU-R F.385

Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Palestine\*\*, Qatar, Dem. Rep. of the Congo, Rwanda, Senegal, Seychelles, Sudan, South Sudan, South Africa, Tanzania, Chad, Togo, Tunisia, Zambia, and Zimbabwe.

<sup>2</sup> The band 3 300- 3 400 MHz is identified for IMT in the following Region 1 countries including 33 African countries, South of 30° parallel North: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Congo (Rep. of the), Côte d'Ivoire, Egypt, Eswatini, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Uganda, the Dem. Rep. of the Congo, Rwanda, Sudan, South Sudan, South Africa, Tanzania, Chad, Togo, Zambia and Zimbabwe. See footnote 5.429B in the 2020 version of the ITU Radio Regulations.



	Frequency range				
11	7725	-	8500	MHz	Rec. ITU-R F.386
12	10.7	-	11.7	GHz	Rec. ITU-R F.387
13	12.75	-	13.25	GHz	Rec. ITU-R F.497
14	14.4	-	15.35	GHz	Rec. ITU-R F.636
15	17.7	-	19.7	GHz	Rec. ITU-R F.595
16	21.2	-	23.6	GHz	Rec. ITU-R F.637
17	24.25	-	29.5	GHz	Rec. ITU-R F.748
18	31.0	-	31.3	GHz	Rec. ITU-R F.746
19	31.8	-	33.4	GHz	Rec. ITU-R 1520
20	37.0	-	40.5	GHz	Rec. ITU-R F.749
21	40.5	-	43.5	GHz	Rec. ITU-R F.2005

1.2.3.1 The coordination procedure laid down in this Agreement for the Fixed Service is only valid if in both countries involved in the coordination process the respective frequency band is allocated to the Fixed Service and the respective frequency falls under the responsibility of the Administrations.

1.2.4 For frequencies below 1 GHz and listed under 1.2.1, used in the countries concerned for the Fixed Service, the coordination procedure and the technical provisions set out in this Agreement for the Land Mobile Service shall be used.

1.2.5 For frequencies above 1 GHz used in the countries concerned for the Fixed Service in frequency bands other than those listed in the frequency table given in article 1.2.3, the coordination procedure set out in this Agreement for the Fixed Service may be used, and, if necessary, the technical parameters shall be agreed separately between Administrations concerned. This applies also for frequencies above 43.5 GHz if there is a common understanding between Administrations

1.2.6 Short Range Devices (SRDs) as defined in the latest version of Report ITU-R SM-2153 are not subject to this Agreement.

### **1.3 Frequency categories**

#### **1.3.1 Frequencies requiring coordination**

Frequencies which Administrations are required to coordinate with the other Administrations affected (see 1.6) before a station is put into service.

#### **1.3.2 Preferential frequencies**

Frequencies which the Administrations concerned may assign, without prior coordination, on the basis of bi- or multilateral agreements under the terms laid down therein.

#### **1.3.3 Shared frequencies**

Frequencies which may be shared without prior coordination, on the basis of bi- or multilateral agreements under the terms laid down therein.

#### **1.3.4 Frequencies for planned radio communication networks in the Land Mobile Service**

Frequencies which the Administrations must coordinate with a view to the subsequent introduction of coherent radio communication networks in the Land Mobile Service, where the number of locations multiplied by the number of frequencies exceeds 36.

### **1.3.5 Frequencies used on the basis of geographical network plans**

Frequencies used for the Land Mobile Service, in the countries concerned on the basis of a geographical network plan prepared and adopted in advance, taking into account the technical characteristics set out in that plan.

### **1.3.6 Frequencies using preferential codes**

Frequencies which the Administrations concerned may assign, without prior coordination, on the basis of bi- or multilateral agreements under the terms laid down therein.

### **1.3.7 Frequencies used on the basis of arrangements between operators**

Frequencies laid down in arrangements between operators may be used without prior coordination, on the condition that there is an existing agreement signed by the Administrations concerned authorising such arrangements. These arrangements between operators may also include the use of the codes.

A copy of each bi- or multilateral agreement mentioned in Sections 1.3.2, 1.3.3, 1.3.6 and 1.3.7, if not confidential, should be sent in electronic form to the Managing Administration/institution which will inform all other Administrations by placing it on the server.

## **1.4 Frequency Register**

The Frequency Register shall be made up of lists set out by every Administration in indicating its coordinated frequencies, its assigned preferential frequencies, its shared frequencies, its frequencies coordinated for planned radio communication networks, and its frequencies used on the basis of geographical network plans and frequencies using preferential codes. A list of the details to be included in the Frequency Register is given in Annex 2A and Annex 2B. All frequency assignments in this register shall be protected according to their status of coordination. There are as many lists as affected countries.

## **1.5 Harmful interference**

Harmful interference shall be construed as any emission which causes serious degradation in the quality of the traffic of a radio communication service, or repeatedly disrupts or interrupts that service by exceeding the maximum permissible interference field strength specified for the Land Mobile Service in Annex 1 or in the case of the Fixed Service exceeding the maximum permissible threshold degradation in Annex 9.

## **1.6 Administration affected**

Any Administration whose station could suffer from harmful interference as a result of the planned use of a frequency, or whose station could cause harmful interference to a planned receiving station of the requesting Administration.

## **1.7 Managing Administration/Institution**

An administration who signed the HCM4A Agreement, and on a voluntary basis, or a competent African institution mandated by signatory countries, hosts the main server, manages hardware, software and human resources in keeping with the implementation of the Agreement. That Administration/institution bears the related costs of managing the system. The provisions of Annex 12 shall govern the management of the agreement

## **1.8 HCM4A Programmes**

- 1.8.1 The HCM4A (Harmonized Calculation Method for Africa) Programmes are programmes developed for the harmonized application of the calculation methods as provided in the Annexes of this Agreement.

Each 'HCM4A Programme' means the source code, the Dynamic Link Library (DLL), the official surrounding programme (\*.EXE) and the programme documentation.

Every Administration is free to use the source code, the DLL, or the surrounding programme. In case of dispute, official DLL utilised via the official HCM4A surrounding programme will be used as a reference.

The managing Administration/institution shall be responsible for the maintenance and registration of the HCM4A server. Provisions of Annex 12 on the management of the Agreement shall apply.

- 1.8.2 All the provisions of this Agreement will apply, making use of the HCM4A programme for the respective service, using a topographical database and border lines.

- 1.8.3 If more detailed topographical database and border line data are needed, they shall be mutually agreed between Administrations carrying out coordination with each other.

- 1.8.4 A new version of a HCM4A programme has to be implemented by all Administrations at the same point in time to avoid keeping different versions for different neighbouring countries. Because the HCM4A software is only a subroutine, this subroutine has to be implemented in national surrounding programmes. The following procedure is set up:

- 1.8.4.1 The Managing Administration/institution announces new HCM4A programme versions and the exact date of their implementation. The new HCM4A programme is put on the data server of this Agreement for download. The version history is updated. If an error is reported, the Technical Working Group formed under the provisions of Annex 12 will correct this error and provide a new programme version if it (TWG) decides this is necessary.

The implementation phase is one month.

- 1.8.4.2 If modifications are done to the interface to the surrounding programme (modifications of the surrounding programme are required), a grace period of one year after the official announcement of the new version is granted.

- 1.8.4.3 If modifications are done to the Annex 2A or Annex 2B (modifications of the surrounding programme are required), a grace period of one year after the official announcement of the new version is granted
- 1.8.5 For the harmonized application of the calculation method laid down in the Annexes to this Agreement new versions of the HCM4A programmes will be developed.

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## Article 2

### 2 General

- 2.1** This Agreement shall in no way affect the rights and obligations of the Administrations arising from the Constitution and Convention of the International Telecommunication Union (ITU), the administrative Regulations and Agreements concluded within the framework of the ITU as well as other pertinent inter-governmental agreements.
- 2.2** Administrations shall assign frequencies exclusively in accordance with the provisions of this Agreement. If coordination is required, it shall be done prior to the putting into operation of the planned radio station.
- 2.3** If necessary, the Administrations may agree on provisions that are different from or supplementary to the provisions of this Agreement, which, however, must not adversely affect Administrations that are not concerned.
- 2.4** The Fixed and Land Mobile Services which do not come under the responsibility of the Administrations or which usage is restricted for national defence purposes or for which information is not available due to security reasons shall not be governed by the provisions of this Agreement unless otherwise provided for.
- 2.5** In the case of the Land Mobile Service the effective radiated power and the effective antenna height of stations shall be chosen so that their range is confined to the area to be covered. Excessive antenna heights and transmitter outputs shall be avoided by using several locations and low effective antenna heights. Directional antennas shall be used in order to minimise the potential of interference to the neighbouring country. The maximum cross-border ranges of harmful interference for frequencies requiring coordination are given in Annex 1.
- 2.6** The effective radiated power and the antenna height of stations in the Fixed Service shall be chosen according to the radio links lengths and the required quality of service. Excessive antenna heights, excessive transmitter outputs and too low antenna directivities shall be avoided in order to minimise the potential of interference to other countries.

## Article 3

### 3 Technical provisions

The request for coordination of a station and the evaluation of this request shall be made in accordance with the following technical provisions:

- 3.1** In case of the Land Mobile Service the maximum permissible interference field strength is given in Annex 1.

In case of the Fixed Service, the maximum permissible threshold degradation is given in Annex 9.

- 3.2** Where in the case of the Land Mobile Service the nominal frequencies are different, the permissible interference field strength shall be increased as indicated in Annex 3A

In case of the Fixed Service the interference level at the receiver input shall be decreased according to Annex 9 by the Masks Discrimination (MD) and the Net Filter Discrimination (NFD) as given in Annex 3B

- 3.3** The interference field strength shall be determined in the case of the Land Mobile Service in accordance with Annex 5.

In the case of the Fixed Service, the threshold degradation shall be determined using Annex 9 where the basic transmission loss is calculated in accordance with Annex 10.

- 3.4** Administrations may agree to apply parameters other than the set values.

## Article 4

### 4 Procedures

#### 4.1 Frequencies requiring coordination

In the case of the Land Mobile Service a transmitting frequency shall be coordinated if the transmitter produces a field strength, at the border of the country of the Administration affected, which, at a height of 10 m above ground level, exceeds the maximum permissible interference field strength as defined in Annex 1. A receiving frequency shall be coordinated if the receiver requires protection.

Administrations shall coordinate radio-relay links in the Fixed Service if the shortest distance from the border of at least one station is less or equal to the one defined in Annex 11. However, it is strongly recommended that all stations which may cause harmful interference to stations in other countries or need protection be coordinated regardless of the distance.

- 4.1.1 Any Administration wishing to take into operation a station shall circulate a request for coordination to all Administrations affected for their comment. This request shall include the characteristics in accordance with Annex 2A and Annex 2B.
- 4.1.2 If, for the purpose of technically evaluating this request, the Administration affected requires information that is lacking or needs to be supplemented in accordance with Annex 2A and Annex 2B, it shall ask for this information within 30 days upon receipt of the request for coordination. After this request, complete information concerning a request for coordination shall be sent by the requesting administration within 30 days, otherwise the coordination request shall be deemed null and void.
- 4.1.3 Having received complete information concerning a request for coordination, the Administration affected shall evaluate this information in accordance with the provisions of this Agreement. It shall notify the requesting Administration of the outcome within 45 days.
- 4.1.4 If the Administration which initiated the coordination procedure does not receive a reply within 45 days, it may send a reminder. The Administrations affected shall respond to this reminder with the outcome within 20 days.
- 4.1.5 If the Administration affected again fails to respond within the period fixed under Section 4.1.4, it shall be deemed to have given its consent, and the station shall be considered coordinated.
- 4.1.6 The periods specified under Sections 4.1.3 and 4.1.4 may be changed by mutual consent.
- 4.1.7 Any coordinated frequency assignment shall be notified to the Administrations affected as soon as the corresponding station is put into operation but not later than 180 days upon approval. Following such notification of the assignment, this assignment shall be updated in the Frequency Register.

If no notification of assignment is given within 180 days, the Administration affected shall send a reminder to the Administration that has asked for coordination. If no notification of assignment is given within another 30 days, the request for coordination shall be deemed null and void.

No notification shall be required if the frequency registers are exchanged semi-annually in accordance with Section 4.9.1.

- 4.1.8 The Administration wishing to change the technical characteristics of stations registered in the Frequency Register, shall notify the Administrations affected of its intentions. Coordination shall be required if this change causes the probability of interference to increase in the affected country. If the situation remains unchanged with regard to interference or if it improves, the Administrations affected shall only be informed of such a change. The entry in the Frequency Register shall be corrected accordingly.
- 4.1.9 In special cases, the Administrations may assign frequencies for temporary use (up to 45 days) without coordination provided this does not cause harmful interference to coordinated stations. As soon as possible, the Administration affected shall be notified of the planned taking into operation. Such stations shall immediately be taken out of operation if they cause harmful interference to coordinated stations of the affected country. These assignments shall be made on preferential frequencies as far as possible.
- 4.1.10 If an assignment is no longer in force, the competent Administration shall notify the affected Administration within three months and the entry in the Frequency Register has to be deleted.

## **4.2 Preferential frequencies**

- 4.2.1 Frequencies in the frequency bands specified in Section 1.2 may be defined by prior bi- or multilateral agreements concluded in the framework of this agreement as preferential frequencies for given Administrations.
- 4.2.2 The Administration which has been granted a preferential right may put stations operating on preferential frequencies within the terms of the relevant bi- or multilateral agreements into use without prior coordination.
- If the conditions for the protection of the receiver in the mobile service are not defined in bi- or multilateral agreements, section 2.2 of Annex 1 will apply.
- 4.2.3 Preferential frequencies granted to an Administration shall have priority rights over assignments made to other Administrations concerned.
- 4.2.4 The entry into service of stations using preferential frequencies shall be notified to the Administrations affected, unless otherwise laid down in bi- or multilateral agreements. The notification shall include the characteristics as set out in Annex 2A and Annex 2B. These frequencies and their technical characteristics shall be entered with status "P" into the Frequency Register. No response to such a notification is required.
- 4.2.5 Preferential frequencies to be assigned on conditions other than those agreed in bi- or multilateral agreements mentioned in Section 1.3.2 shall be coordinated in accordance with Section 4.1.
- 4.2.6 Following a positive coordination procedure in accordance with Section 4.1, Administrations may bring into use another Administration's preferential frequencies. These shall have the same rights as frequencies coordinated in accordance with Section 4.1.



- 4.2.7 If the existing radio networks of one Administration cause harmful interference to the stations operated by another Administration on frequencies to which it has a preferential right, or if, in particular cases, frequency assignments not enjoying preferential rights have to be adjusted, the Administrations concerned shall determine the transition period by mutual consent.

### **4.3 Frequencies for planned radio communication networks in the Land Mobile Service**

- 4.3.1 Prior to the coordination of a planned radio communication network the Administrations may embark on a consultative procedure in order to facilitate the taking into operation of this new network. The request for consultation shall include the planning criteria as well as the following data:

- planned frequencies (transmitting and receiving frequency of the station);
- coverage area of the entire radio communication network;
- class of the station;
- the coverage area of a station;
- effective radiated power;
- maximum effective antenna height;
- designation of the emission;
- network development plan;
- antenna characteristics for stations belonging to the network.

The Administration affected shall acknowledge receipt of the request for consultation and communicate its reply within 60 days. In complicated planning issues this consultation may require a bi- or multilateral consultation meeting in order to assist the Administration planning a radio communication network in coming to a quicker solution.

- 4.3.2 To coordinate frequencies for a planned radio communication network the Administration affected shall apply, no sooner than three years prior to the planned taking into operation of the network, the procedure described in Section 4.1 together with the following changes:

4.3.2.1 The receipt of the request for coordination shall be acknowledged.

4.3.2.2 If there is no prior consultation the Administration affected shall submit its reply within 180 days from the day of the receipt of the request for coordination. Any request for coordination following a consultation process shall be responded to within 120 days.

4.3.2.3 The Administration requesting coordination shall notify to the Administration affected the date at which the radio communication network will be taken into operation.

- 4.3.3 Stations forming part of the radio communication network shall be entered into the Frequency Register together with the date of the termination of the coordination procedure, and enjoy the same rights as the stations coordinated in accordance with Section 4.1.

4.3.4 Coordination shall be null and void for those coordinated stations which have not been taken into operation within 30 months of the termination of the coordination procedure.

#### **4.4 Frequencies used on the basis of geographical network plans in the Land Mobile Service**

4.4.1 Geographical network plans covering certain parts of the frequency bands indicated in Section 1.2 may be prepared and coordinated, divergence from the defined parameters being permissible, subject to prior agreement reached between the Administrations affected. These frequencies shall be entered in the Frequency Register. On the basis of the geographical network plans adopted in this fashion, an Administration shall be authorised to put stations into service without prior coordination with the Administration with which the plan has been agreed.

4.4.2 Frequencies used on the basis of geographical network plans and intended to be assigned on conditions other than those agreed between Administrations concerned, shall be coordinated in accordance with Section 4.1.

#### **4.5 Frequencies using preferential codes**

4.5.1 Preferential code groups or preferential code group blocks may be agreed between Administrations concerned where centre frequencies are aligned.

4.5.2 The Administration which has been granted a preferential right may put stations operating on preferential code groups or preferential code group blocks within the terms of the relevant bi- or multilateral agreements into use without prior coordination.

4.5.3 Preferential code groups or preferential code group blocks granted to an Administration shall have priority rights over assignments made to other Administrations concerned.

4.5.4 The entry into service of stations using preferential code groups or preferential code group blocks shall be notified to the Administrations affected, including the characteristics as set out in Annex 2A, unless otherwise laid down in bi- or multilateral agreements. These frequencies and their technical characteristics shall be entered with status "P" in the Frequency Register. No response to such notification is required.

4.5.5 Frequencies using preferential code groups or preferential code group blocks which have to be assigned on conditions other than those agreed in bi- or multilateral agreements mentioned in Section 1.3.6 shall be coordinated in accordance with Section 4.1.

4.5.6 Following a positive coordination procedure in accordance with Section 4.1, Administrations may bring into use frequencies using another Administration's preferential code groups or preferential code group blocks. These shall have the same rights as frequencies coordinated in accordance with Section 4.1.

4.5.7 If the existing radio networks of one Administration cause harmful interference to the stations operated by another Administration on frequencies using preferential code groups or preferential code group blocks, or if, in particular cases, frequency assignments not enjoying preferential code groups rights or preferential code group blocks rights, have to be adjusted, the Administrations concerned shall determine the transition period by mutual consent.

#### **4.6 Frequencies used on the basis of arrangements between operators**

- 4.6.1 Operators in neighbouring countries are allowed to conclude mutual arrangements on the condition that the Administrations concerned have signed an agreement authorising such arrangements.
- 4.6.2 Such arrangements shall be the subject of agreements submitted for the validation of concerned Administrations
- 4.6.3 Arrangements between operators may deviate from the technical parameters or other conditions laid down in the annexes of this Agreement or in relevant bi- or multilateral agreements between the Administrations concerned.

#### **4.7 Evaluation of requests for coordination**

- 4.7.1 In evaluating the requests for coordination, the Administration affected shall take into account the following frequencies:
- frequencies entered in the Frequency Register;
  - frequencies used on the basis of bi- or multilateral agreements;
  - frequencies awaiting an answer to a coordination request (in chronological order of requests).
- 4.7.2 A request for coordination of a transmitting frequency in the Land Mobile Service may only be rejected if the respective station:
- 4.7.2.1 produces an interference field strength exceeding the maximum permissible value as given in Annex 1 at a station entered in the Frequency Register or
  - 4.7.2.2 intends to use a frequency without meeting the conditions agreed upon bi- or multilaterally or
  - 4.7.2.3 produces an interference field strength exceeding the maximum permissible value as given in Annex 1 in the case of a station awaiting an answer to a coordination request or
  - 4.7.2.4 does not meet the conditions governing the maximum cross-border ranges of harmful interference as given in Annex 1.
- 4.7.3 Within the Land Mobile Service the request for protection of a receiver may only be rejected if:
- 4.7.3.1 at least one of the coordinated transmitters of the Administration affected produces at the respective receiver an interference field strength which is higher than the maximum permissible interference field strength given in Annex 1 or
  - 4.7.3.2 the protection of the receiver would restrict the use of a preferential frequency of the Administration affected under the conditions agreed upon bi- or multilaterally or
  - 4.7.3.3 one of the transmitters awaiting an answer to a coordination request of the Administration affected produces at the respective receiver an interference field strength which is higher than the maximum permissible interference field strength given in Annex 1 or

- 4.7.3.4 the conditions governing the receiver protection as given in Annex 1 Section 2.2 are not met.
- 4.7.4 A request for coordination of a transmitter frequency in the Fixed Service may only be rejected if the respective station:
  - 4.7.4.1 produces a threshold degradation exceeding the maximum permissible value given in Annex 9 at a station entered in the Frequency Register; or
  - 4.7.4.2 is intended for using a frequency without meeting the conditions agreed upon bi- or multilaterally; or
  - 4.7.4.3 produces a threshold degradation exceeding the maximum permissible value given in Annex 9 in the case of a station awaiting an answer to a coordination request.
- 4.7.5 Within the Fixed Service, the protection of a receiver may only be rejected if:
  - 4.7.5.1 the request for coordination for the associated transmitter has been refused,
  - 4.7.5.2 the protection of the receiver would restrict the use of a preferential frequency of the Administration affected under the conditions agreed upon bi- or multilaterally in accordance with Section 1.3.2.
- 4.7.6 If protection from interference cannot be guaranteed, a request for coordination must be accepted with "G" (Appendix 9 to Annex 2A and Annex 2B).
- 4.7.7 In case a request for coordination is rejected or a conditional reply is given to such a request, the reasons shall be given for this, indicating, if appropriate, either the radio station to be protected or the radio station which could cause harmful interference to the planned radio station.
- 4.7.8 An Administration making reference to Section 2.4 of this Agreement may only respond to a request for coordination by indicating "C" or "G" in accordance with Appendix 9 to Annex 2A and Annex 2B. No reason needs to be given for "G" in accordance with Section 4.7.7; reference to Section 2.4 shall be sufficient.

#### **4.8 Evaluation in connection with tests**

In order to make more efficient use of the radio spectrum, to avoid possible harmful interference and facilitate the enhancement of existing networks, the following procedure may be used:

- 4.8.1 If the Administrations affected arrive at different results in their evaluations of the interference situation, or if the request for coordination currently being processed justifies a trial basis, they shall agree to open the service on a trial basis. Stations falling into the above cases shall be given a temporary status "D" in accordance with Appendix 9 to Annex 2A and Annex 2B, until final status can be accomplished.
- 4.8.2 The provisions on measurement procedures are given in Annex 7.
- 4.8.3 On completion of the tests a final decision shall be communicated to the requesting Administration within 30 days, indicating the measured values of the interference field strength.

#### **4.9 Exchange of Lists**

- 4.9.1 Each Administration shall prepare an up-to-date Frequency Register in accordance with Section 1.4. The List corresponding to each affected Administration contained in the Frequency Register shall be exchanged bilaterally at least once every six months.
- 4.9.2 The Administrations shall undertake to use the data appearing in the Lists of other Administrations for service purposes only. These Lists may not be communicated to other Administrations or other third parties without the consent of the Administration affected.

### **Article 5**

#### **5 Report of harmful interference**

Any harmful interference which is observed shall be reported to the Administration of the country in which the interfering station is located, in accordance with Annex 7. If harmful interference occurs on frequencies entered in the Frequency Register, the Administrations concerned shall endeavour to achieve a mutually satisfactory solution as soon as possible.

### **Article 6**

#### **6 Revision of this Agreement**

- 6.1 This Agreement may be expanded or amended at any time at the initiative of any Administration, subject to approval by all the other signatory Administrations. Planned amendments shall be communicated to the Managing Administration/institution, which shall undertake to obtain the assent of the other signatory Administrations through the appropriate channels as agreed between the signatory administrations in accordance with Annex 12. If assent is sought by correspondence, a reply shall be requested within one month. If any Administration fails to respond within this period, the Managing Administration/institution will send a reminder, to which the Administration shall reply within one month. If this Administration again fails to respond, it shall be deemed to have given its consent.
- 6.2 Amendment relating to technical parameters of the software shall be adopted on consensus by the relevant Technical Working Group and communicated as a revision of the associated Annex to all the Administrations. In the event consensus is not reached, the amendment shall comply with the 6.1 procedure.

### **Article 7**

#### **7 Accession to this Agreement**

Any African administration which needs to coordinate with at least one signatory Administration may accede to this Agreement. A declaration to that effect shall be addressed to the Managing Administration/institution, which shall undertake to obtain the assent of the other signatory Administrations through the appropriate channels as agreed between the signatory administrations in accordance with Annex 12. Upon approval by all signatory Administrations, the accession shall take effect the day on which the requesting administration signs this Agreement.

If approval is sought by correspondence, a reply shall be requested within three months. If any Administration fails to respond within this period, the Managing

Administration/institution will send a reminder, to which the Administration in question shall reply within one month. If this Administration again fails to respond, it shall be deemed to have given its consent.

#### **Article 8**

#### **8 Withdrawal from this Agreement**

Any Administration may withdraw from the Agreement by the end of a calendar month by giving notice of its intention at least six months before. A declaration to that effect shall be addressed to the Managing Administration/institution, which shall undertake to inform the other signatory Administrations through correspondence no later than one month from the date of receiving the declaration.

#### **Article 9**

#### **9 Status of coordinations prior to this Agreement**

The new provisions shall not apply to frequency utilisations already agreed between Administrations prior to this Agreement being concluded. These frequencies shall be recorded in the Frequency Register.

In the case of the Fixed Service, information on frequency utilisation before [30.11.2021] within the coordination distances as defined in Annex 11 should be exchanged between the Administrations concerned. This frequency utilisation will be concluded as coordinated and shall be recorded in the Frequency Register.

#### **Article 10**

#### **10 Languages of this Agreement**

This Agreement exists in the English and French languages and should be translated into other Official African Languages; in the event of a dispute the French version shall be used.

#### **Article 11**

#### **11 Entry into force of this Agreement**

This Agreement shall enter into force on [01/07/2022].

# Annex 12

## Provisions on the Management of the HCM4A Agreement

### PROVISIONS ON THE MANAGEMENT OF THE HCM4A AGREEMENT

#### 1. Management of the HCM4A agreement

To facilitate the dissemination of information about the HCM4A agreement, host the main server and manage and maintain the website of the Agreement and perform other functions as stipulated in the Agreement and in this Annex, signatory Administrations (referred to in Article 1.1 of the Agreement) shall decide, no later than 01/01/2023, on:

1. assigning the functions related to the management of the HCM4A to one of these two options:

1. **Managing Administration:** a signatory administration which, on a voluntary basis, assumes the functions of the HCM4A management; or

2. **Managing Institution:** a competent regional institution, mandated by signatory administrations, to perform the functions of the HCM4A management.

2. the scope of the management of the HCM4A agreement which shall include:
  1. hosting the server that will include all the information and resources related to the agreement such as the different versions of the agreement, topographic and border data, the HCM4A programmes and other related information;
  2. administration, management and maintenance of the HCM4A website;
  3. obtaining, informing and disseminating information and updates to signatory administrations related to the requests for the revision of, accession to, withdrawal from the agreement;
  4. disseminating information and updates to signatory administration related to any modifications of the agreement and the availability of new versions of the HCM4A programme;
  5. coordination and liaison with the Technical Working Groups (TWGs); and,
  6. other functions as agreed by signatory administrations.
3. working methods and procedures for the management of the HCM4A agreement.

Unless signatory members decide otherwise, Managing Administration/ Institution shall bear the costs that arise from performing the functions of the managing administrations.

## **2. The Technical Working Group**

In order to regularly update the HCM4A agreement to accommodate any changes in the radio spectrum allocation and to take into considerations any practical implementation issues, signatory Administrations (referred to in Article 1.1 of the Agreement) shall decide, no later than 01/01/2023 on:

1. setting up the technical working group (TWG) that will be in charge of making proposals for updating the agreement and developing and amending the HCM4A programmes.
2. the composition of the TWG which should deal with the different aspects of the agreement as stipulated in the agreement including:

technical and administrative matters related to the Land Mobile Service;



2. technical and administrative matters related to the Fixed Service; and
  3. HCM4A programmes maintenance and updates.
- 3.** whether TWG will be formed from experts nominated by the signatory Administrations or they will be formed by a competent regional organisation in Africa based on its existing procedures for such working groups.
- 4.** working methods and procedures for the Technical Working Groups.

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