

**INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA
NOTICE 165 OF 2019**



**PURSUANT TO SECTION 4 (1) OF THE ELECTRONIC COMMUNICATIONS ACT 2005,
(ACT NO. 36 OF 2005)**

**HEREBY ISSUES A NOTICE REGARDING THE RADIO FREQUENCY SPECTRUM
ASSIGNMENT PLAN FOR THE FREQUENCY BAND 825 TO 830 MHz AND 870 TO 875 MHz**

1. The Independent Communications Authority of South Africa ("the Authority"), hereby publishes the **Radio Frequency Spectrum Assignment Plan for the frequency band 825 to 830 MHz and 870 to 875 MHz** in terms of sections 2 (d), (e) and 4, read with sections 30, 31(4), and 33 of the Electronic Communications Act (Act No. 36 of 2005) and read with Regulation 3 of the Radio Frequency Spectrum Regulations 2015 and read with the IMT Roadmap 2014 as amended.
2. This Radio Frequency Spectrum Assignment Plan supersedes any previous spectrum assignment arrangements for the same spectrum allocation.



RUBBEN MOHLALOGA
CHAIRPERSON



Radio Frequency Spectrum Assignment Plan

**Rules for Services operating in the Frequency Band
from 825 to 830 MHz and 870 to 875 MHz**

Table of Contents

1	Glossary	4
3	Purpose	6
4	General	7
5	Channelling Plan	8
6.	Requirements for usage of radio frequency spectrum	9
7.	Implementation	9
8.	Co-ordination Requirements	10
9.	Assignment	12
10.	Amendment	12
11.	Radio Frequency Migration	13
	Appendix A: National Radio Frequency Plan	15
	Appendix B: Interference Resolution Process	16
	Appendix C: Cross-Border Radio Frequency Coordination	19

1 Glossary

In this Radio Frequency Spectrum Assignment Plan, terms used shall have the same meaning as in the Electronic Communications Act 2005 (no. 36 of 2005); unless the context indicates otherwise;

“3GPP”	means the 3rd Generation Partnership Project (3GPP) which consists of six telecommunications standard development organisations
“Act”	means the Electronic Communications Act, 2005 (Act No. 36 of 2005) as amended
“DM RS”	means Demodulation Reference Signal
“ECC/REC(11)04”	means ECC Recommendation (11)04
“ECC”	means Electronic Communications Committee within the European Conference of Postal and Telecommunications Administrations (CEPT)
“FDD”	means Frequency Division Duplex
GSM-R	Global System for Mobile communications for Railways
“HCM”	means harmonised calculation method
“IMT”	means International Mobile Telecommunications
“ITA”	means Invitation to Apply
“ITU”	means the International Telecommunication Union
“ITU-R”	means the International Telecommunication Union Radiocommunication Sector
“LTE”	means Long Term Evolution is a standard for wireless communication of high-speed data for mobile phones and data terminals. It is based on the GSM/EDGE and UMTS/HSPA network technologies
“NRFP”	means the National Radio Frequency Plan 2018 for South Africa
“PCI”	means Physical-Layer Cell Identities
“PPDR”	means Public Protection and Disaster Relief as defined in ITU-R Report M.2033.
“PRACH”	means Physical Random Access Channel
“PSTN”	means public switched telephone network
“PUCCH”	means Physical Uplink Control Channel

“RFSAP”	means Radio Frequency Spectrum Assignment Plan
“TCA”	means terrain clearance angle
“TDD”	means Time Division Duplex
“WRC-12”	means World Radiocommunication Conference 2012 held in Geneva
“WRC-15”	means the World Radiocommunication Conference 2015 held in Geneva

3 Purpose

- 3.1 A Radio Frequency Spectrum Assignment Plan (RFSAP) provides information on the requirements attached to the use of a frequency band in line with the allocation and other information in the National Radio Frequency Plan (NRFP). This information includes technical characteristics of radio systems, frequency channelling, coordination and details on required migration of existing users of the band and the expected method of assignment.
- 3.2 This RFSAP states the requirements for the utilization of the frequency band between 825-830 MHz paired with 870-875 MHz.
- 3.3 The ITU states that International Mobile Telecommunications (IMT) systems are mobile systems that provide access to a wide range of telecommunication services including advanced mobile services, supported by mobile and fixed networks, which are increasingly packet-based. The key features are as follows:
- 3.3.1 a high degree of commonality of functionality worldwide while retaining the flexibility to support a wide range of services and applications in a cost-efficient manner;
 - 3.3.2 compatibility of services within IMT and with fixed networks;
 - 3.3.3 capability of interworking with other radio access systems;
 - 3.3.4 high quality mobile services;
 - 3.3.5 user equipment suitable for worldwide use;
 - 3.3.6 user-friendly applications, services and equipment;
 - 3.3.7 worldwide roaming capability; and
 - 3.3.8 enhanced peak data rates to support advanced services and applications.

4 General

- 4.1 Technical characteristics of equipment used in frequency band 825-830 and 870-875 MHz shall conform to all applicable South African standards, international standards, International Telecommunications Union (ITU) and its radio regulations as agreed and adopted by South Africa.
- 4.2 All installations must comply with safety rules as specified in applicable standards.
- 4.3 The equipment used shall be certified under South African law and regulations.
- 4.4 The allocation of this frequency band and the information in this Radio Frequency Spectrum Assignment Plan (RFSAP) are subject to review.
- 4.5 Frequency bands assigned include bands 825-830 MHz paired with 870-875 MHz.
- 4.6 Likely use of this band will be for Mobile voice and data communications.
- 4.7 Typical technical and operational characteristics of IMT systems as identified as by the ITU are described in the following documents:
 - 4.7.1 Recommendation ITU-R M.2012-2 (02/2014): Detailed specifications of the terrestrial radio interfaces of International Mobile Telecommunications-Advanced (IMT Advanced).
 - 4.7.2 Report ITU-R M2241-0 Compatibility studies in relation to Resolution 224 in the bands 698-806 MHz and 790-862 MHz.
 - 4.7.3 Report ITU-R M.2074: Report on Radio Aspects for the terrestrial component of IMT-2000 and systems beyond IMT-2000.
 - 4.7.4 Recommendation ITU-R M.1645 Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000.
 - 4.7.5 Recommendation ITU-R M.1036-5: Frequency arrangements for implementation of the terrestrial component of International Mobile Telecommunications (IMT) in the bands identified for IMT in the Radio Regulations (RR).

5 Channelling Plan

5.1 The frequency band 825-830 MHz paired with 870-875 MHz provides a total bandwidth of 2×5 MHz FDD as per Figure 1.

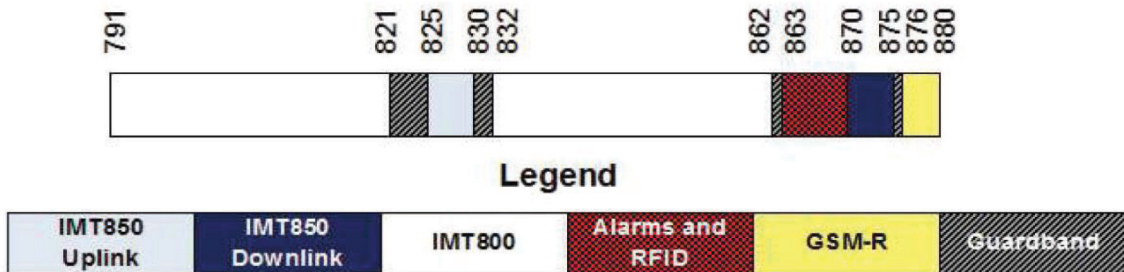
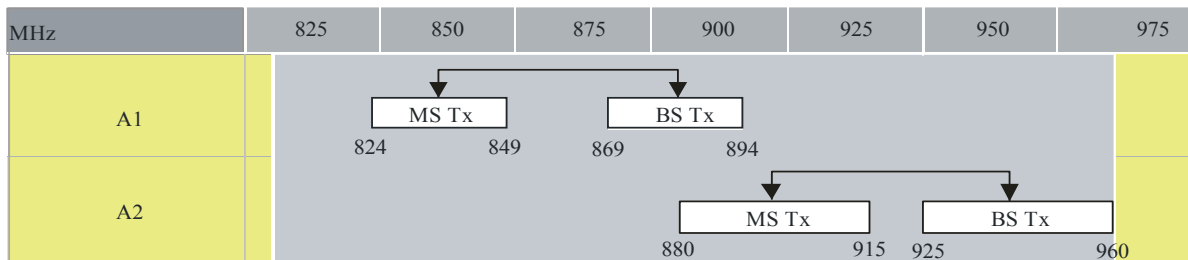


Figure 1: Channel Arrangement for frequency band 825-830 MHz paired with 870-875 MHz

5.2 The channel arrangement for IMT850 is a partial implementation of the A1 frequency arrangement in the band 694 – 960 MHz of the ITU recommendation ITU-R 1036-5 as illustrated in Figure 2.



M.1036-03-A1-2

Figure 2: Frequency Arrangement in the band 694 - 960 MHz

5.3 The CDMA systems is to provisionally migrate within 825-830 and 870-875 MHz until the end of the Analogue Television Migration.

6. Requirements for usage of radio frequency spectrum

- 6.1 This chapter covers the minimum key characteristics considered necessary in order to make the best use of the available frequencies.
- 6.2 The use of the band is limited for IMT-services.
- 6.3 Only systems using digital technologies that promote spectral efficiency will be issued with an assignment. Capacity enhancing digital techniques is being rapidly developed and such techniques that promote efficient use of spectrum, without reducing quality of service are encouraged.
- 6.4 In some cases, a radio system conforming to the requirements of this RFSAP may require modifications if harmful interference is caused to other radio stations or systems.
- 6.5 The allocation of spectrum and shared services within these bands are found in the National Radio Frequency Plan (NRFP) and an extract of NRFP is shown in Appendix A.
- 6.6 Maximum radiated power:
- 6.6.1 Base Station transmissions should not exceed 61dBm/5MHz EIRP.
- 6.6.2 Mobile Station transmissions should not exceed 23dBm EIRP.
- 6.6.3 On a case-to-case basis, higher EIRP may be permitted if acceptable technical justification is provided.
- 6.6.4 Where appropriate subscriber terminal station should comply with the technical specification outlined under “3GPP TS 36.521-1” or latest version.
- 6.6.5 In some cases, a radio system conforming to the requirements of this RFSAP may require modifications. If major interference is caused to other radio stations or systems.
- 6.6.6 Criteria and guidelines for interference mitigation are described in **Appendix C**.

7. Implementation

- 7.1 This RFSAP comes into effect upon publication in the Government Gazette.
- 7.2 No new assignment for frequency band 825-830 paired with 870-875 MHz shall be approved unless they comply with this RFSAP.

8. Co-ordination Requirements

- 8.1 Use of these frequency bands shall require coordination with the neighbouring countries within the coordination zones of 6 kilometres in case of LTE-to-LTE or 9 kilometres in case of LTE-to-other technologies from the neighbouring country. The coordination distance is continuously being reviewed and may be updated from time to time.
- 8.2 The following field strength thresholds have to be assured based on (ECC/REC (11)04 for 790-862 MHz. Operator-to-operator coordination may be necessary to avoid interference.
- 8.3 In general stations of FDD systems may be used without coordination with a neighbouring country if the mean field strength produced by the cell (all transmitters within the sector) does not exceed the value of 55dB μ V/m/5MHz at an antenna height of 3m above ground at the borderline between countries, and does not exceed a value of 29dB μ V/m/5MHz at an antenna height of 3m above ground at a distance of 9 km inside the neighbouring country.
- 8.4 In the case that LTE is deployed both sides of the border the field strength levels can be increased to 59 dB μ V/m/5MHz and 41 dB μ V/m/5MHz at 6 km.
- 8.5 Synchronisation should be achieved including that of the field strength levels if TDD is in operation across both sides of a border.
- 8.6 For field strength, predictions the calculations should be made according to **Appendix B**. In cases of other frequency block sizes $10 \cdot \log(\text{frequency block size}/5\text{MHz})$ should be added to the field strength values e.g.:

BW (MHz)	Field strength level at 3 m height (general case)	Field strength level at 3 m height (LTE case)
5 MHz	55.0 dB μ V/m/5MHz @0km	59.0 dB μ V/m/5MHz @0km
	29.0 dB μ V/m/5MHz @9km	41.0 dB μ V/m/5MHz @6km
10 MHz	58.0 dB μ V/m/10MHz @0km	62.0 dB μ V/m/10MHz @0km
	32.0 dB μ V/m/10MHz @9km	44.0 dB μ V/m/10MHz @6km
15 MHz	59.8 dB μ V/m/15MHz @0km	63.8 dB μ V/m/15MHz @0km

	33.8 dB μ V/m/15MHz @9km	45.8 dB μ V/m/15MHz @6km
20 MHz	61.0 dB μ V/m/20MHz @0km	65.0 dB μ V/m/20MHz @0km
	35.0 dB μ V/m/20MHz @9km	47.0 dB μ V/m/20MHz @6km

8.7 If neighbouring administrations wish to agree on frequency coordination based on preferential frequencies, while ensuring a fair treatment of different operators within a country the Authority will add the following within mutual agreements:

8.7.1 Stations of IMT systems may be operated without coordination if the mean field strength produced by the cell (all transmitters within the sector) does not exceed the value of 15 dB μ V/m/5 MHz at 10% time, 50% of locations at 3 metres above ground level at the borderline.

8.7.2 Technical analysis may be conducted by the Authority before an assignment is issued according to **Appendix B** taken from ECC/REC (11) 05.

8.7.3 Specific information regarding coordination may be found in **Error! Reference source not found.**, taken from Cross-Border Frequency Coordination: Harmonised Calculation Method for Africa (HCM4A) Agreement.

8.7.4 In the event of any interference, the Authority will require affected parties to carry out coordination. If the interference continues to be unresolved after 24 hours, the affected parties may refer the matter to the Authority for a resolution. The Authority will decide the necessary modifications and schedule of modifications to resolve the dispute. The Authority will be guided by the interference resolution process as shown **Error! Reference source not found.**

8.7.5 Assignment holders shall take full advantage of interference mitigation techniques such as antenna discrimination, tilt, polarization, frequency discrimination, shielding/blocking (introduce diffraction loss), site selection, and/or power control to facilitate the coordination of systems.

9. Assignment

- 9.1 No new assignment shall be made on a frequency band 825-830 paired with 870-875 MHz unless it complies with this RFSAP.
- 9.2 An Invitation to Apply shall be published for new assignments in this band in line with regulations developed in terms of section 31(3) of the Act.

10. Amendment

- 10.1 The authority resolved the following transitional arrangements for the right of use of spectrum in this frequency band:
- 10.1.1 That Broadcasting Spectrum Assignments planned entries in Annexure E, G, H and in the band above 694 MHz, in the affected areas as stipulated in the Terrestrial Broadcasting Frequency Plan (Notice No. 298 of 2013 in Government Gazette No. 36321 and Notice No. 801 of 2014 in Government Gazette 38005 or the latest version), are to be used subject to meeting the conformance requirements in line with the GE06 Plan and are to be phased out during the dual illumination period.
- 10.1.2 That broadcast transmissions and services ancillary to broadcasting in the band above 694 MHz are to be systematically switched off.
- 10.1.3 That radio frequency spectrum assignment for CDMA system within the band 827.775 – 832.695 MHz paired with 872.775 – 877.695 MHz in the affected areas migrate systematically to the destination band 825-830 MHz paired with 870-875 MHz coordinated with adjacent and existing assignments during the dual illumination period.
- 10.1.4 The CDMA systems shall cease operation at the end of the dual illumination period in alignment of the TV Analogue switch off in alignment with Digital Migration Regulations published in Government Gazette No. 36000 (Notice:107 of 2012).
- 10.1.5 The Authority recognises that there may be issues with respect to interference that may be experienced by typical applications using apparatus in the 863-870MHz band which may operate on a licence exempt basis (in line with Radio Frequency Spectrum Regulations Government Gazette 38754 (Notice 386 of 2015) and Spectrum Re-allocation for RFID GG 31127), adjacent to the Mobile services.
- 10.1.6 That Joint Spectrum Advisory Group has been established to deal with minimising and/or prevent harmful interference during the transitional arrangement period. The Joint Spectrum Advisory Group is established by regulation 13 of Digital Migration Regulations published in Government Gazette No. 36000 (Notice:107 of 2012).

11. Radio Frequency Migration

11.1 The Radio Frequency Migration’s specific procedure shall be as follows:

11.1.1 As an immediate measure, the CDMA assignment of the Licensee is to be shifted by 2 MHz to 825-830 MHz // 870-875 MHz in accordance with Consideration 1b in Figure 3.

11.1.2 The coexistence solution of CDMA system to GSM-R is to introduce a guard band of ~4.05 MHz and to reduce the CDMA system band to 2×3.75 MHz in areas where there will be potential interference to GSM-R. In these areas, reduction to 2×3.75 MHz allows the partial usage of current CDMA system at least for voice and wideband packet services. In areas where there is no interference to GSM-R, the Licensee may use its existing CDMA system assignment.

11.1.3 Licensee must cease using this band for CDMA system by the end of dual illumination.

11.1.4 Considerations 2b and 3b in **Error! Reference source not found.** indicate a long-term solution when CDMA system has ceased and an (LTE) frequency band 825-830 paired with 870-875 MHz band is deployed.

11.1.5 With migration from deployed GSM-R to LTE-R, consideration needs to be made of an intermediate step of 2×3 MHz LTE first to ensure dual illumination and 2×5 MHz LTE in the final step. Further coexistence with GSM-R with about 4 MHz guard band still has to be investigated but is not expected here.

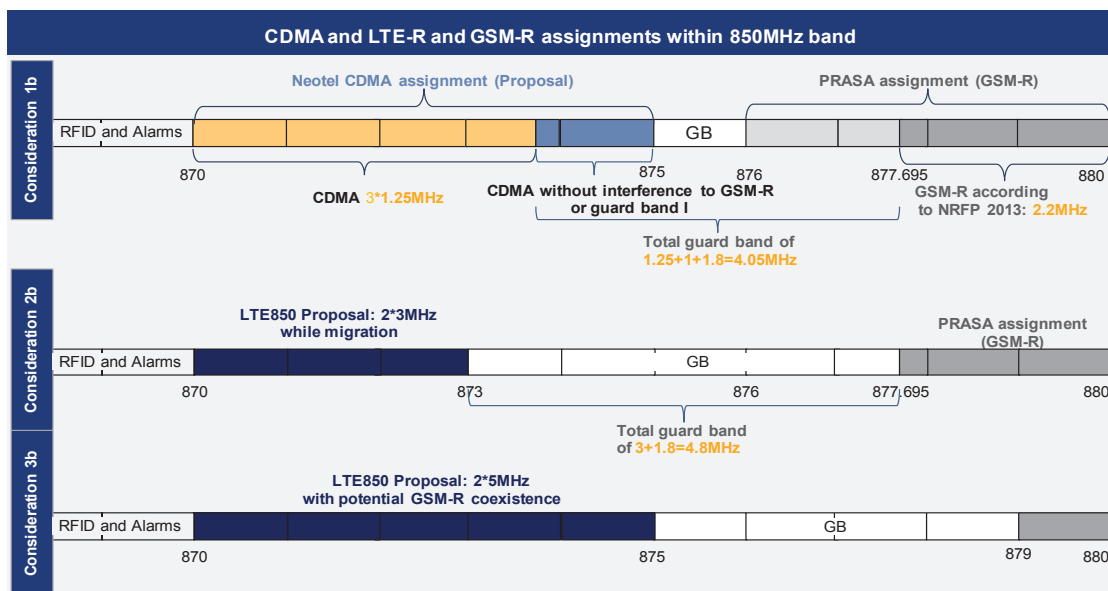


Figure 1: Migration of CDMA850 Band by 2 MHz

Appendix A: National Radio Frequency Plan

ITU Region 1 allocations and footnote	South African and allocations and footnotes	Typical Applications	Comments
<p>790-862 MHz</p> <p>FIXED</p> <p>MOBILE except aeronautical 5.317A mobile</p> <p>BROADCASTING</p> <p>5.312 5.314 5.315 5.316 5.316A 5.319</p>	<p>790-862 MHz</p> <p>FIXED</p> <p>MOBILE except aeronautical 5.316B 5.317A NF9 mobile</p> <p>BROADCASTING</p> <p>5.316A</p>	<p>Fixed Links (856 – 864.1 MHz)</p> <p>IMT800 BTX (791 – 821 MHz)</p> <p>Mobile Wireless Access (827.775 – 832.695 MHz)</p> <p>IMT800 MTX (832–862 MHz)</p> <p>Television Broadcasting (470 – 854 MHz)</p>	<p>The fixed links will be migrated along with the broadcasting service in line with Radio Frequency Migration Plan.</p> <p>Paired with 832 – 862 MHz</p> <p>Paired with Access (872.775 – 877.695 MHz)</p> <p>Paired with 791 – 821 MHz</p> <p>Broadcasting Allotments in accordance with GE89 plan in the process of conversion to GE06. Broadcast assignments in accordance with the latest version of the Terrestrial Broadcasting Frequency Plan.</p>

Appendix B: Interference Resolution Process

The following methods are proposed for assessment of anticipated interference inside neighboring country based on established trigger values. Due to complexity of radio-wave propagation nature different methods are proposed to be considered by administrations and are included here for guidance purposes only. It should be noted that following methods provide theoretical predictions based on available terrain knowledge. It is practically impossible to recreate these methods with measurement procedures in the field. Therefore, only some approximation of measurements could be used to check compliance with those methods based on practical measurement procedures. The details of such approximation are not included in this recommendation and should be negotiated between countries based on their radio monitoring practices.

Path specific model

Where appropriate detailed terrain data is available, the propagation model for interference field strength prediction is the latest version of ITU-R Rec. P.452, For the relevant transmitting terminal, predictions of path loss would be made at x km steps along radials of y km at z degree intervals¹. The values for those receiver locations within the neighbouring country would be used to construct a histogram of path loss – and if more than 10% of predicted values exceed the threshold the station should be required to be coordinated.

Site General model

If it is not desirable to utilise detailed terrain height data for the propagation modelling in the border area, the basic model to be used to trigger coordination between administrations and to decide, if co-ordination is necessary, is ITU-R Rec. P.1546, “Method for point to area predictions for terrestrial services in the frequency range 30 to 3000 MHz”. This model is to be employed for 50% locations, 10% time and using a receiver height of 3m. For specific reception areas where terrain roughness adjustments for improved accuracy of field strength prediction are needed, administrations may use correction factors according to terrain irregularity and/or an averaged value of the TCA parameter in order to describe the roughness of the area on and around the coordination line.

Administrations and/or operators concerned may agree to deviate from the aforementioned model by mutual consent.

¹ . Values for x, y, z and path specific field strength levels are to be agreed between the administrations concerned

Area calculations

In the case where greater accuracy is required, administrations and operators may use the area calculation below. For calculations, all the pixels of a given geographical area to be agreed between the Administrations concerned in a neighbouring country are taken into consideration. For the relevant base station, predictions of path loss should be made for all the pixels of a given geographical area from a base station and at a receiver antenna height of 3m above ground.

For evaluation,

- only 10 percent of the number of geographical area between the borderline (including also the borderline) and the 6 km line itself inside the neighbouring country may be interfered by higher field strength than the trigger field strength value given for the borderline in Annex 1 and 2 at a height of 3 m above ground.
- only 10 percent of the number of geographical area between the 6 km (including also 6km line) and 12 km line inside the neighbouring country may be interfered by higher field strength than the trigger field strength value given for the 6 km line in Annex 1 and 2 at a height of 3 m above ground.

It is recommended that during area calculations not only detailed terrain data but also clutter data be taken into account. Use of correction factors for clutter is crucial in particular where the border area is 'open' or 'quasi-open' from the point of view of clutter or where the interfering base station is just a few kilometres from a borderline.

If the distance between a base station and a terrain point of a borderline is closer than or equal to 1 km, free space propagation model needs to be applied. Furthermore, if there is no terrain obstacle within the 1st Fresnel zone, also the free space propagation model should be applied.

If clutter data is not available, it is proposed to extend the usage of free space propagation model to a few kilometres, depending on the clutter situation in border areas.

For area type interference calculations, propagation models with path specific terrain correction factors are recommended (e.g. Recommendation ITU-R P.1546 with the terrain clearance angle correction factor TCA, HCM method with the terrain clearance angle correction factor or Recommendation ITU-R P.1812).

As to correction factors for clutters ‘open area’ and ‘quasi-open area’, 20 dB and 15 dB should be used respectively. Recommendation ITU–R P.1406 should be used if a finer selection of clutter is required.

It must be noted that terrain irregularity factor Δh is not recommended to be used in area calculations. Administrations and/or operators concerned may agree to deviate from the aforementioned models by mutual consent.

Appendix C: Cross-Border Radio Frequency Coordination

The following is extracted from Cross-Border Frequency Coordination: Harmonized Calculation Method for Africa (HCM4A) Agreement

Frequencies requiring co-ordination

1. In the case of the Land Mobile Service a transmitting frequency shall be co-ordinated if the transmitter produces 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 of the Agreement. A receiving frequency shall be co-ordinated if the receiver requires protection.
2. It is strongly recommended to co-ordinate 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 of the Agreement. All stations which may cause harmful interference to stations in other countries or need protection shall be co-ordinated regardless of the distance.
3. Any Administration wishing to take into operation a station shall circulate a request for co-ordination to all Administrations affected for their comment. This request shall include the characteristics in accordance with Annex 2A and Annex 2B of the Agreement.
4. 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 of the Agreement, it shall ask for this information within 30 days upon receipt of the request for co-ordination. After this request, complete information concerning a request for co-ordination shall be sent by the requesting administration within 30 days, otherwise the coordination request shall be deemed null and void.
5. Having received complete information concerning a request for co-ordination, 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.

6. If the Administration which initiated the co-ordination procedure does not receive a reply within 45 days, it must send a reminder. The Administrations affected shall respond to this reminder with the outcome within 20 days.
7. If the Administration affected again fails to respond within the period fixed under paragraph 6, it shall be deemed to have given its consent, and the station shall be considered co-ordinated.
8. The periods specified under paragraphs 5 and 6 may be changed by mutual consent.
9. Any co-ordinated 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 included in the Frequency Register.
10. If no notification of assignment is given within 180 days, the Administration affected shall send a reminder to the Administration that has asked for co-ordination. If no notification of assignment is given within another 30 days, the request for co-ordination shall be deemed null and void.
11. No notification shall be required if the frequency registers are exchanged semi-annually.
12. The Administration wishing to change the technical characteristics of stations registered in the Frequency Register, shall notify the Administrations affected of its intentions. Co-ordination 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.
13. In special cases, the Administrations may assign frequencies for temporary use (up to 45 days) without co-ordination provided this does not cause harmful interference to co-ordinated 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 co-ordinated stations of the affected country. These assignments shall be made on preferential frequencies as far as possible.
14. 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.

Preferential frequencies

- 15 Frequencies in the frequency bands specified in paragraph 2 may be defined by prior bi- or multilateral agreements concluded in the framework of this agreement as preferential frequencies for given Administrations.
- 16 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 co-ordination. If the conditions for the protection of the receiver in the mobile service are not defined in bi- or multilateral agreements, paragraph 16 of Annex 1 of the Agreement will apply.
- 17 Mutually agreed preferential frequencies granted to an Administration shall have priority rights over assignments made to other Administrations concerned.
- 18 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 of the Agreement. These frequencies and their technical characteristics shall be entered with status "P" into the Frequency Register. No response to such a notification is required.
- 19 Preferential frequencies to be assigned on conditions other than those agreed in bi-or multilateral agreements mentioned in Section 1.3.2 shall be co-ordinated in accordance with paragraph 1.
- 20 Following a positive co-ordination 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 co-ordinated in accordance with Paragraph 1.
- 21 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.

Frequencies for planned radio communication networks

- 22 Prior to the co-ordination 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:
- a. planned frequencies (transmitting and receiving frequency of the station);
 - b. coverage area of the entire radio communication network;
 - c. class of the station;
 - d. the coverage area of a station;
 - e. effective radiated power;
 - f. maximum effective antenna height;
 - g. designation of the emission;
 - h. network development plan;
 - i. antenna characteristics for stations belonging to the network.
- 23 The Administration affected shall acknowledge receipt of the request for consultation and communicate its reply within 60 days.
- 24 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.
- 25 To co-ordinate 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 Paragraph 1 together with the following changes:
- 26 The receipt of the request for co-ordination shall be acknowledged.
- 27 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 co-ordination. Any request for co-ordination following a consultation process shall be responded to within 120 days.
- 28 The Administration requesting co-ordination shall notify to the Administration affected the date at which the radio communication network will be taken into operation.

29 Stations forming part of the radio communication network shall be entered into the Frequency Register together with the date of the termination of the co-ordination procedure and enjoy the same rights as the stations co-ordinated in accordance with Paragraph 1.

30 Co-ordination shall be null and void for those co-ordinated stations which have not been taken into operation within 30 months of the termination of the co-ordination procedure.

Frequencies used on the basis of geographical network plans

31 Geographical network plans covering certain parts of the frequency bands indicated in Section 1.2 may be prepared and co-ordinated, 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 adjusted in this fashion, an Administration shall be authorised to put stations into service without prior co-ordination with the Administration with which the plan has been agreed by mutual consent.

32 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 co-ordinated in accordance with Paragraph 1.

Frequencies using preferential codes

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

34 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 co-ordination.

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

36 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 of the Agreement, 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.

- 37 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 co-ordinated in accordance with Paragraph 1.
- 38 Following a positive co-ordination procedure in accordance with Paragraph 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 co-ordinated in accordance with Paragraph 1.
- 39 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.

Frequencies used on the basis of arrangements between operators

- 40 Operators in neighbouring countries are allowed to conclude mutual arrangements on the condition that the Administrations concerned have signed an agreement authorizing such arrangements.
- 41 Such arrangements shall be the subject of agreements submitted to the preliminary validation of concerned Administrations.
- 42 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.

Evaluation of requests for co-ordination

- 43 In evaluating the requests for co-ordination, the Administration affected shall take into account the following frequencies:
- a. frequencies entered in the Frequency Register;

- b. frequencies used on the basis of bi- or multilateral agreements; and
 - c. frequencies awaiting an answer to a co-ordination request (in chronological order of requests).
- 44 A request for co-ordination of a transmitting frequency in the Land Mobile Service may only be rejected if the respective station:
- 45 produces an interference field strength exceeding the maximum permissible value as given in Annex 1 of the Agreement at a station entered in the Frequency Register; or
- intends to use a frequency without meeting the conditions agreed upon bi- or multilaterally; or
 - produces an interference field strength exceeding the maximum permissible value as given in Annex 1 of the Agreement in the case of a station awaiting an answer to a co-ordination request; or
 - does not meet the conditions governing the maximum cross-border ranges of harmful interference as given in Annex 1 of the Agreement.
- 46 Within the Land Mobile Service the request for protection of a receiver may only be rejected if
- at least one of the co-ordinated 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 of the Agreement; or
 - 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
 - one of the transmitters awaiting an answer to a co-ordination 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 of the Agreement; or
 - the conditions governing the cross-border ranges of harmful interference as given in Annex 1 of the Agreement are not met.
- 47 A request for co-ordination of a transmitter frequency in the Fixed Service may only be rejected if the respective station:
- produces a threshold degradation exceeding the maximum permissible value given in Annex 9 of the Agreement at a station entered in the Frequency Register; or
 - is intended for using a frequency without meeting the conditions agreed upon bi- or multilaterally; or
 - produces a threshold degradation exceeding the maximum permissible value given in Annex 9 of the Agreement in the case of a station awaiting an answer to a co-ordination request.

- 48 Within the Fixed Service, the protection of a receiver may only be rejected if:
- the request for co-ordination for the associated transmitter has been refused; or
 - 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.
- 49 If protection from interference cannot be guaranteed, a request for co-ordination must be accepted with "G" (Appendix 9 to Annex 2A and Annex 2B of the Agreement).
- 50 In case a request for co-ordination 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.
- 51 An Administration making reference to Section 2.4 of the Agreement may only respond to a request for co-ordination by indicating "C" or "G" in accordance with Appendix 9 to Annex 2A and Annex 2B of the Agreement. No reason needs to be given for "G" in accordance with Section 4.7.7; reference to Section 2.4 shall be sufficient.

Evaluation in connection with tests

- 52 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:
- If the Administrations affected arrive at different results in their evaluations of the interference situation, or if the request for co-ordination 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 of the Agreement, until final status can be accomplished.
- 53 The provisions on measurement procedures are given in Annex 7 of the Agreement.
- 54 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.

Exchange of Lists

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. 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.

End///