East African Communications Organisation

Communications for all in East Africa

EACO Radio Frequency Spectrum Allocation Plan (EACO RFSAP)

Coordinator to incorporate the amendments and share the final version

8.3 kHz to 3000 GHz

August 2022

Prepared by EACO

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List of Acronyms/Abbreviations

AIS	Automatic Identification System
BFWA	Broadband Fixed Wireless Access
BSS	Broadcasting Satellite Service
BWA	Broadband Wireless Access
CB	Citizen Band
CEPT	European Conference of Postal and Telecommunications Administrations
DD	Digital Dividend
DEC	Decision (European documents)
DECT	Digital Enhanced Cordless Telecommunication
DRM	Digital Radio Mondiale
DSC	Digital Selective Calling
DVB-T	Terrestrial Digital Video Broadcasting
ECC	Electronic Communications Committee (European)
EESS	Earth Exploration-Satellite Service
ENG	Electronic News Gathering
EPIRB	Emergency Position-Indicating Radio Beacon
ERC	European Radiocommunications Committee
E-to-s	Earth-to-space direction
FM	Frequency Modulation
FSS	Fixed-Satellite Service
FWA	Fixed Wireless Access
GE75	Geneva 1975 Agreement
GE84	Geneva 1984 Agreement
GE06	Geneva 2006 Agreement
GLONASS	Global Navigation Satellite System
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System
HAPS	High Altitude Platform Stations
HDFS	High Density Fixed Service
HDFSS	High Density Fixed-Satellite Service
HDTV	High Definition Television
HF	High Frequency
ILS	Instrument Landing System
IMO	International Maritime Organisation
IMT	International Mobile Telecommunications
ISM	Industrial, Scientific and Medical
ITU	International Telecommunication Union
MLS	Microwave Landing System
MSI	Maritime Safety Information
MSS	Mobile-Satellite Service
MWS	Multimedia Wireless System
NATO	North Atlantic Treaty Organisation
NAVTEX	System for the broadcast and automatic reception of maritime safety information by means of narrow-band direct-printing telegraphy
OB	Outside Broadcasting
(OR)	Off-Route
PAMR	Public Access Mobile Radio
PMR	Professional Mobile Radio, Private Mobile Radio
PPDR	Public Protection and Disaster Relief
(R)	Route
RA	Radio Astronomy

REC	Recommendation
RFID	Radio Frequency Identification
RLAN	Radio Local Area Network System
RR	ITU Radio Regulations
RTTT	Road Transport & Traffic Telematics
S-DAB	Satellite Digital Audio Broadcasting
s-to-E	space-to-Earth direction
SNG	Satellite News Gathering
SRD	Short Range Device
T-DAB	Terrestrial Digital Audio Broadcasting
TV	Television
VOR	VHF Omni-directional Range
VSAT	Very Small Aperture Terminal
WAS	Wireless Access System
WRC	World Radiocommunication Conferenc

1. INTRODUCTION

EACO member countries of Burundi, Kenya, Rwanda, Uganda, South Sudan and Tanzania have developed a regional Radio Frequency Spectrum Allocation Plan (RFSAP) that provides a harmonised framework on the allocation of the radio frequency spectrum in EACO. It should be recognized that there would be some variances in the use of some of radio frequency spectrum bands in EAC countries due to, amongst others, legacies in system deployments, different timelines in the introduction of new technologies, different services and technology requirements as well as different bandwidth requirements. Nonetheless, despite the fact that it would not be possible to completely align the use of the spectrum over all frequency bands between EAC Member States, there is significant harmonisation already existing in assignments in many frequency bands. In order to achieve significant harmonization, EAC Members are urged, while respecting their sovereign rights, to implement Radiocommunications services in accordance to this EAC RFSAP as far as is practically possible.

The EAC Radio Frequency Spectrum Allocation Plan has been developed in conformity with the International Telecommunications Union (ITU) Radio Regulations, 2020 governing radio spectrum and regional agreements concluded or acceded to EAC NRAs, considering the existing and future requirements of the radio frequencies in the Region.

The objective of developing the EAC Radio Frequency Spectrum Allocation Plan is to provide the framework for the allocation of radio frequencies to various Radiocommunications services to be used by Government and non-Government entities in the EAC countries.

2. THE ITU RADIO REGIONS

In the framework of the ITU Radio Regulations, the world is divided into three Regions, namely Region 1, Region 2 and Region 3 mainly for reasons of administrative and rationality and is largely based on the historical commonalities in the usage of the radio spectrum in the Regions. The map below depicts the three named Regions:

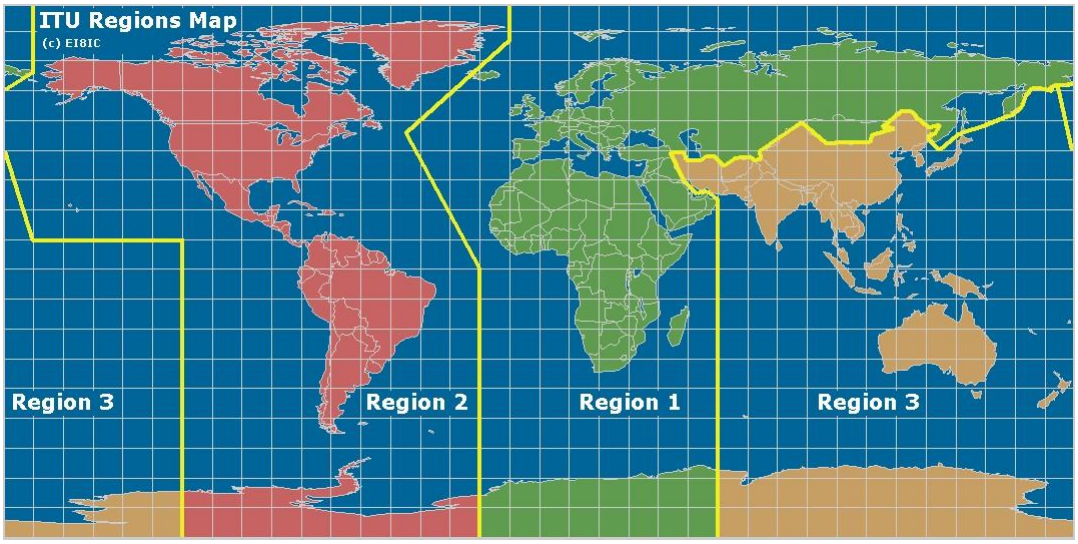

Figure 1: ITU Regions of the World

2.0 THE EAC SUB-REGION

The EAC sub region as per the official information below:

- EAC (East) >> https://www.eac.int/eac-partner-states

3. CATEGORIES OF RADIOCOMMUNICATION SERVICES AND FOOTNOTES

3.1 Radiocommunication Services

Where, in this Plan, a band is indicated as allocated to more than one service, such services are listed in the following order:

a) Services the names of which are printed in "Upper Case" (example: FIXED); these are called "primary" services;
b) Services the names of which are printed in "Lower Case" (example: Mobile); these are called "secondary" services.

The Stations of secondary service:

a) shall not cause harmful interference to stations of primary service to which frequencies are already assigned or to which frequencies may be assigned at a later date;
b) cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date;
c) can claim protection, however, from harmful interference from stations of the same or other secondary services(s) to which frequencies may be assigned at a later date.

3.2 Footnotes

Where footnotes are employed, the following rules apply:

a) Where a footnote is printed on the same line as the name of a radio service the footnote applies only to that service.
b) Where a footnote is printed within the lower part of a frequency band and not on the same line as a radio service, the footnote applies to that band or some part thereof.
c) Footnotes in the International Telecommunication Union Table of Frequency Allocations are identified below the tables by their number, e.g. '5.12'. Where references are made in or below the table to these international footnotes, they are similarly identified.

4. STRUCTURE OF EAC RFSAP

The EAC RFSAP 2022 has been developed taking into account international best practice in the development of frequency band plans and considering the needs of the EAC Members. This EAC RFSAP has maintained a certain format. In reading EAC RFSAP, the following meaning is attached to the four (4) columns:

a) Column 1 – contains ITU allocation of frequency bands for various radiocommunication services in Region 1 and ITU-R article 5 footnotes of radio regulations relevant to Region 1.

b) Column 2 – It contains allocation of frequency bands for various radiocommunication services in EAC and ITU-R article 5 footnotes of Radio Regulations relevant to Region 1 .

c) Column 3 – Contains the Typical use in EAC . However, the main use does not preclude other radiocommunication services allocated to the band.

d) Column 4 – contains where appropriate relevant information on the band plans, channel arrangement and the main use in Region 1 .

5. TABLE OF FREQUENCY ALLOCATIONS AND APPLICATIONS

Note: In the whole table the letter X, beside a recommendation or a report, designate the latest version of this recommendation or report.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
Below 8.3 kHz			
(Not allocated)	(Not allocated)		
8.3 - 9 kHz			
METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	Lightning detection systems	
9 - 11.3 kHz			
METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	SRD: ▪ Inductive applications (9 kHz-148.5 kHz) ▪ Ultra-Low Power Active Medical Implants (ULP-AMI)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
11.3 - 14 kHz			
RADIONAVIGATION	RADIONAVIGATION	Navigational Aids SRD: ▪ Ultra-Low Power Active Medical Implants (ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Rep .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
14 - 19.95 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MARITIME MOBILE 5.57 5.55 5.56	FIXED MARITIME MOBILE 5.57 5.56	Maritime mobile communications SRD: ▪ Ultra-Low Power Active Medical Implants (ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Rep .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
19.95 - 20.05 kHz			
STANDARD FREQUENCY AND TIME SIGNAL (20kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	SRD: ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ Article 26 applies ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
20.05 - 70 kHz			
FIXED MARITIME MOBILE 5.57 5.56 5.58	FIXED MARITIME MOBILE 5.57 5.56 5.58	Maritime mobile communications SRD: ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
70 - 72 kHz			
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	Navigational Aids SRD: ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
72 - 84 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	Maritime mobile communications Navigational Aids SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
84 - 86 kHz			
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	Navigational Aids SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Rep .SM. 2153-7 ▪ Inductive SRD: ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ▪ ETSI EN 302 195
86 - 90 kHz			
FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	Maritime mobile communications Navigational Aids SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ▪ ETSI EN 302 195
90 - 110 kHz			
RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION 5.62 Fixed 5.64	Navigational Aids SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report.SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ▪ ETSI EN 302 195
110 - 112 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	Maritime mobile communications Navigational Aids SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
112 - 115 kHz			
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	Navigational Aids SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ▪ ETSI EN 302 195
115 - 117.6 kHz			
RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.66	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	Navigational Aids Maritime mobile communications SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report.SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz ▪) ETSI EN 302 195
117.6 - 126 kHz			
FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	Navigational Aids Maritime mobile communications SRD : ▪ Utra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ Rec. ITU-R SM.1896-x ▪ Report. ITU-R SM. 2153-x ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
126 - 129 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	Navigational Aids SRD : ▪ Utra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report.SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
129 - 130 kHz			
FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	Navigational Aids Maritime mobile communications SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report .SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
130 - 135.7 kHz			
FIXED MARITIME MOBILE 5.64 5.67	FIXED MARITIME MOBILE 5.64	Maritime mobile communications SRD : ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report.SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
135.7 - 137.8 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MARITIME MOBILE Amateur 5.67A 5.64 5.67 5.67B	FIXED MARITIME MOBILE Amateur 5.67A 5.64	Maritime mobile communications Amateur SRD : - Ultra-Low Power Active Medical Implants(ULP-AMI) - Inductive applications (9 kHz-148.5 kHz)	▪ Amateur (135.7-137.8 kHz) services are limited to maximum radiated power of 1 W (e.i.r.p). ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ▪ ETSI EN 302 195
137.8 - 148.5 kHz			
FIXED MARITIME MOBILE 5.64 5.67	FIXED MARITIME MOBILE 5.64	Maritime mobile communications SRD: ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ▪ ETSI EN 302 195
148.5 - 255 kHz			
BROADCASTING 5.68 5.69 5.70	148.5-200kHz BROADCASTING 5.68	Broadcasting SRD: ▪ Ultra-Low Power Active Medical Implants(ULP-AMI) ▪ Inductive applications (148.5 - 5000 kHz)	▪ Frequency assignment Plan (GE75) applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m) ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
	200kHz-255kHz AERONAUTICAL RADIONAVIGATIONAL SERVICE 5.70	SRD: ▪ Ultra-Low Power Active Medical Implants (ULP-AMI) ▪ Inductive applications (148.5 - 5000 kHz)	▪ Frequency assignment Plan (GE75) applies ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195 ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m) ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
255 - 283.5 kHz			
BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70	AERONAUTICAL RADIONAVIGATION 5.70	SRD: ▪ Ultra-Low Power Active Medical Implants (ULP-AMI) ▪ Inductive applications (148.5 - 5000 kHz)	▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195 ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
283.5 - 315 kHz			
AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radio beacons) 5.73 5.74	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74	Navigational Aids Maritime mobile communications SRD : ▪ ultra-Low Power Active Medical Implants(ULP-AMI) ▪ inductive applications (9 kHz-148.5 kHz)	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report.SM. 2153-7 ▪ Inductive SRD : ETSI EN 300 330 ▪ ULP-AMI (9 kHz - 315 kHz) ETSI EN 302 195
315 - 325 kHz			
AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radio beacons) 5.73 5.75	AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73 5.75	Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
325 - 405 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	Aeronautical NDBs and locators Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
405 - 415 kHz			
RADIONAVIGATION 5.76	RADIONAVIGATION 5.76	Navigational Aids Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
415 - 435 kHz			
MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE (radiotelegraphy) 5.79 AERONAUTICAL RADIONAVIGATION	Maritime mobile communications Inductive SRD applications (148.5 - 5000 kHz)	▪ Under the MMS the use of the band 415-495 kHz is limited to radiotelegraphy. ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
435 - 472 kHz			
MARITIME MOBILE 5.79 Aeronautical radionavigation 5.77 5.82	MARITIME MOBILE (radiotelegraphy) 5.79 Aeronautical radionavigation 5.82	Maritime mobile communications SRD: Inductive SRD applications (148.5 - 5000 kHz)	▪ Coast Stations in the NAVTEX service on 490 kHz; Res.339 applies. Transmission of navigational and meteorological warnings and urgent info for ships (NBDP telegraphy).Articles 31 and 52 apply ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
472 - 479 kHz			
MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 5.80 B 5.82	MARITIME MOBILE (radiotelegraphy) Amateur 5.80A Aeronautical radionavigation 5.82	Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
479 - 495 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.82	MARITIME MOBILE (radiotelegraphy) 5.79 5.79A Aeronautical radionavigation 5.77 5.82	▪ Maritime mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Coast Stations in the NAVTEX service on 490 kHz; Res.339 applies. Transmission of navigational and meteorological warnings and urgent info for ships (NBDP telegraphy). Articles 31 and 52 apply. ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
495 - 505 kHz			
MARITIME MOBILE 5.82C	MARITIME MOBILE 5.82C	▪ Limited to radiotelegraphy ▪ Maritime GMDSS ▪ Broadcasting safety information from coast stations ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Articles 31 and 52 apply ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m) ▪ For international NAVDAT systems Rec. ITU-R M.2010 applies
505 - 526.5 kHz			
MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE(radiotelegraphy) 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	▪ Maritime mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Coast Stations in the NAVTEX service on 518 kHz; Res.339 applies. Articles 31 and 52 apply. ▪ Under the MMS the use of the band 505-526.5 kHz is limited to radiotelegraphy. ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
526.5 - 1606.5 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
BROADCASTING 5.87 5.87A	526.5-535kHz BROADCASTING Mobile 5.87	▪ MW Sound broadcasting (526.5 1606.5 kHz) ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Frequency assignment Plan (GE75) applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
	535-1606.5kHz BROADCASTING 5.87	▪ MW Sound broadcasting (526.5 1606.5 kHz) ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Frequency assignment Plan (GE75) applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
1606.5 - 1625 kHz			
FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	▪ Maritime mobile communications ▪ Land mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
1625 - 1635 kHz			
RADIOLOCATION 5.93	RADIOLOCATION 5.93	▪ Navigational Aids ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
1635 - 1800 kHz			
FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92 5.96	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	▪ Maritime mobile communications ▪ Land mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
1800 - 1810 kHz			
RADIOLOCATION 5.93	RADIOLOCATION 5.93	▪ Navigational Aids ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
1810 - 1850 kHz			
AMATEUR 5.98 5.99 5.100 5.101	AMATEUR 5.98 5.99 5.100 5.101	▪ Amateur communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
1850 - 2000 kHz			
FIXED MOBILE except aeronautical Mobile 5.92 5.96 5.103	FIXED MOBILE except aeronautical Mobile 5.92 5.103	▪ Maritime and/or land mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2000 - 2025 kHz			
FIXED MOBILE except aeronautical Mobile 5.92 5.103	FIXED MOBILE except aeronautical Mobile 5.92 5.103	▪ Maritime and/or land mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2025 - 2045 kHz			
FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) Meteorological aids (oceanographic) 5.104 5.92 5.103	▪ Maritime and/or land mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2045 - 2160 kHz			
FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92	▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2160 - 2170 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
RADIOLOCATION 5.93 5.107	RADIOLOCATION 5.93 5.107	▪ Navigational aids ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2170 - 2173.5 kHz ▪			
MARITIME MOBILE	MARITIME MOBILE	▪ Maritime mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2173.5 -2190.5 kHz			
MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	▪ 2 182 kHz is an international distress and calling frequency for radiotelephony. ▪ 2 187.5 kHz – DSC for distress and calling ▪ 2 174.5 kHz – international distress frequency for NBDP telegraphy ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Articles 31 and 52 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2190.5 - 2194 kHz			
MARITIME MOBILE	MARITIME MOBILE	▪ Maritime mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2194 - 2300 kHz			
FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2300 - 2498 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Article 23.3 to 23.10 applies for broadcasting ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2498 - 2501 kHz			
STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Article 26 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2501 - 2502 kHz			
STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research	▪ Inductive SRD applications (148.5-5000 kHz)	▪ Article 26 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2502 - 2625 kHz			
FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2625 - 2650 kHz ▪			
MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	▪ Maritime mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2650 - 2850 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
2850 - 3025 kHz			
AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	▪ Aeronautical mobile (R) 3 023 kHz may be used under the MMS for search and rescue operations ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Appendix 27 Allotment Plan applies ▪ Article 31 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3025 - 3155 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile (OR) ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Appendix 26 Allotment Plan applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3155 - 3200 kHz			
FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	FIXED MOBILE except aeronautical mobile (R) 5.116	▪ Maritime and/or land mobile communications ▪ Fixed Applications SRD: ▪ Wireless hearing aids ▪ Inductive applications (148.5 - 5000 kHz)	▪ Worldwide channel for low power hearing aids (3155-3195 kHz) Additional channels may be assigned in the band 3155-3400 kHz ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3200 - 3230 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	▪ Maritime and/or land mobile communications ▪ Fixed applications SRD: ▪ Wireless hearing aids ▪ Inductive applications (148.5 - 5000 kHz)	▪ Article 23.3 to 23.10 applies for broadcasting ▪ Worldwide channel for low power hearing aids (3155-3195 kHz).Additional channels may be assigned in the band 3155-3400 kHz. ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3230 - 3400 kHz			
FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	▪ Maritime and/or land mobile communications ▪ Fixed applications ▪ SRD: ▪ Wireless hearing aids ▪ Inductive applications (148.5 - 5000 kHz)	▪ Article 23.3 to 23.10 applies for broadcasting ▪ Worldwide channel for low power hearing aids (3155-3195 kHz).Additional channels may be assigned in the band 3155-3400 kHz. ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7 ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3400 - 3500 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile (R) applications	▪ Appendix 27 Allotment Plan applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3500 - 3800 kHz ▪			
AMATEUR FIXED MOBILE except aeronautical Mobile 5.92	AMATEUR FIXED MOBILE except aeronautical Mobile 5.92	▪ Amateur communications ▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Article 51 and 52 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3800 - 3900 kHz ▪			
FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	▪ Aeronautical mobile (OR) applications ▪ Fixed and Mobile applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3900 - 3950 kHz ▪			
AERONAUTICAL MOBILE (OR) 5.123	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile (OR) applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Appendix 26 Allotment Plan applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
3950 - 4000 kHz ▪			
FIXED BROADCASTING	FIXED BROADCASTING	▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Article 23.3 to 23.10 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4000 - 4063 kHz ▪			
FIXED MARITIME MOBILE 5.127	FIXED MARITIME MOBILE (radiotelephone) 5.127	▪ Maritime mobile communications	▪ Use of the band 4000-4063 kHz by the MMS is limited

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.126		▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	to ship stations using radiotelephony ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4063 - 4438 kHz			
MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	▪ Maritime mobile communications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ ITU RR Appendix 17 Channelling Plan applies ▪ ITU RR Appendix 25 Allotment Plan applies ▪ 4209.5 kHz - Coast Stations in the NAVTEX service - Res.339 applies. Articles 31 and 52 apply. ▪ 4207.5 kHz – DSC for distress and calling; Article 31 applies. ▪ 4177.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. ▪ 4125 kHz – use of this frequency prescribed in Article 31. ▪ 4209.5 kHz – exclusive for transmission by coast stations of meteorological and navigational warnings and urgent information to ships (NBDP) ▪ 4210 kHz – maritime safety information (MSI); App.17 applies.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4438 - 4488 kHz			
FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A 5.132B	FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A	▪ Maritime and/or land mobile communications ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4488 - 4650 kHz ▪			
FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	▪ Fixed and Mobile applications ▪ Maritime applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4650 - 4700 kHz ▪			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile (R) ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Appendix 27 Allotment Plan applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4700 - 4750 kHz ▪			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile (OR) ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Appendix 26 Allotment Plan applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4750 - 4850 kHz ▪			
FIXED AERONAUTICAL MOBILE (OR)	FIXED AERONAUTICAL MOBILE (OR)	▪ Aeronautical and/or land mobile	▪ Article 23.3 to 23.10 applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
LAND MOBILE BROADCASTING 5.113	LAND MOBILE BROADCASTING 5.113	▪ Sound broadcasting ▪ Fixed and Mobile applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4850 - 4995 kHz ▪			
FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE BROADCASTING 5.113	▪ Land mobile ▪ Sound broadcasting ▪ Fixed Applications ▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Article 23.3 to 23.10 applies ▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
4995 - 5003 kHz ▪			
STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	▪ Inductive SRD applications (148.5 - 5000 kHz)	▪ Inductive SRD: ETSI EN 300 330 (magnetic field -15 dBµA/m @ 10m)
5003 - 5005 kHz ▪			
STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research		
5005 - 5060 kHz ▪			
FIXED BROADCASTING 5.113	FIXED BROADCASTING 5.113	▪ Sound broadcasting ▪ Fixed Applications	▪ Article 23.3 to 23.10 applies
5060 - 5250 kHz			
FIXED Mobile except aeronautical mobile 5.133	FIXED Mobile except aeronautical mobile	▪ Fixed and Mobile applications ▪ Maritime applications	
5250 - 5275 kHz ▪			
FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	▪ Fixed Applications	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5275 - 5351.5 kHz			
FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	▪ Aeronautical mobile ▪ Fixed and Mobile applications	
5351.5 -5366.5 kHz			
FIXED MOBILE except aeronautical mobile Amateur 5.133B	FIXED MOBILE except aeronautical mobile Amateur	▪ Fixed and Mobile Applications	▪ Amateur in 5 351.5 -5 366.5 kHz
5366.5 - 5450 kHz			
FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	▪ Fixed and Mobile Applications	▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7
5450 - 5480 kHz			
FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	▪ Aeronautical mobile (OR)	▪ Appendix 27 Allotment plan applies
5480 - 5680 kHz			
AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	▪ Aeronautical mobile	▪ Appendix 27 Allotment Plan applies ▪ Search and rescue operations at 5680 kHz
5680 - 5730 kHz			
AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) 5.111 5.115		▪ Appendix 26 Allotment Plan applies ▪ 5 680 kHz may be used under the MMS for search and rescue operations (see Article 31). ▪ 6215 kHz – use of this frequency prescribed in Article 31.
5730 - 5900 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED LAND MOBILE	FIXED LAND MOBILE	▪ Land mobile	▪
5900 - 5950 kHz			
BROADCASTING 5.134 5.136	BROADCASTING 5.134 5.136	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
5950 - 6200 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
6200 - 6525 kHz			
MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	▪ Maritime mobile communications	▪ ITU RR Appendix 17 Channelling Plan applies ▪ ITU RR Appendix 25 Allotment Plan applies ▪ 6312 kHz and 6215 kHz – DSC for distress and calling; Article 31 applies ▪ 6268 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. ▪ 6314 kHz – maritime safety information (MSI); App.17 applies
6525 - 6685 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile communications	▪ Appendix 27 Allotment Plan applies
6685 - 6765 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile communications	▪ Appendix 26 Allotment Plan applies
6765 - 7000 kHz			
FIXED MOBILE except aeronautical mobile (R) 5.138	FIXED MOBILE except aeronautical mobile (R) 5.138	▪ Maritime and/or land mobile communications ▪ SRD: ▪ Inductive applications	▪ ITU-R Rec.SM.1896-1, ▪ ITU-R Report SM. 2153-7 ▪ ISM band (6765-6795 kHz):

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			centre frequency 6 780 kHz
7000 - 7100 kHz			
AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	AMATEUR AMATEUR-SATELLITE	▪ Amateur communications ▪ Amateur-satellite communications	
7100 - 7200 kHz			
AMATEUR 5.141A 5.141B FIXED MOBILE except aeronautical mobile (R) 5.141B	AMATEUR	▪ Amateur communications	▪ This band is also used for fixed and Mobile Applications in some countries
7200 - 7300 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
7300 - 7400 kHz			
BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D FIXED 5.143C	BROADCASTING 5.134 5.143 5.143B	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 apply. ▪ This band is also used for fixed and Mobile Applications in some countries
7400 - 7450 kHz			
BROADCASTING 5.143B 5.143C FIXED 5.143C	BROADCASTING 5.143B	▪ HF Sound Broadcasting ▪ SRD applications (7 400 – 8 800 kHz)	▪ ITU RR Article 12 Planning Procedures applies ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7
7450 - 8100 kHz			
FIXED MOBILE except aeronautical mobile (R) 5.144	FIXED MOBILE except aeronautical mobile (R)	▪ Maritime applications ▪ SRD applications (7 400 – 8 800 kHz)	▪ ITU-R Rec.SM.1896-1, ▪ ITU-R Report SM. 2153-7
8100 - 8195 kHz			
FIXED MARITIME MOBILE	FIXED MARITIME MOBILE	▪ Maritime mobile communications	▪ ITU-R Rec.SM.1896-1, ▪ ITU-R Report SM. 2153-7

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ SRD applications (7 400 – 8 800 kHz)	
8195 - 8815 kHz			
MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	▪ Maritime mobile communications ▪ SRD applications (7 400 – 8 800 kHz)	▪ ITU RR Appendix 17 Channelling Plan applies ▪ ITU RR Appendix 25 Allotment Plan applies ▪ 8414.5 kHz – DSC for distress and calling; Article 31 applies ▪ 8 376.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. ▪ 8416.5 kHz – maritime safety information (MSI); Appendix 17 applies. ▪ ITU-R Rec.SM.1896-1, ▪ ITU-R Report SM. 2153-7
8815 - 8965 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile communications	▪ Appendix 27 Allotment Plan applies
8965 - 9040 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile communications	▪ Appendix 26 Allotment Plan applies
9040 - 9305 kHz			
FIXED	FIXED	▪ Fixed Applications	
9305 - 9355 kHz			
FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation (oceanographic radars) 5.145A		
9355 - 9400 kHz			
FIXED	FIXED		
9400 - 9500 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
9500 - 9900 kHz			
BROADCASTING 5.147	BROADCASTING 5.147	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
9900 - 9995 kHz			
FIXED	FIXED	▪ Fixed Applications	
9995 - 10003 kHz			
STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	▪ Search and rescue operations at 10003 kHz ± 3 kHz	▪ Article 26 applies
10003 - 10005 kHz			
STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	▪ Search and rescue operations at 10003 kHz ± 3 kHz ▪ Inductive SRD applications (10.2 - 11 MHz)	▪ Article 26 applies
10005 - 10100 kHz			
AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) 5.111	▪ Aeronautical mobile communications ▪ Search and rescue operations at 10003 kHz ± 3 kHz	▪ Appendix 27 Allotment Plan applies
10100 - 10150 kHz			
FIXED Amateur	FIXED Amateur	▪ Fixed Applications ▪ Amateur communications	
10150 - 11175 kHz			
FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	▪ Maritime applications	
11175 - 11275 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile	▪ Appendix 26 Allotment Plan

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		communications	applies
11275 - 11400 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile communications	▪ Appendix 27 Allotment Plan applies
11400 - 11600 kHz			
FIXED	FIXED	▪ Fixed Applications	▪
11600 - 11650 kHz			
BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
11650 - 12050 kHz			
BROADCASTING 5.147	BROADCASTING 5.147	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies ▪ ITU-R Rec.SM.1896-1 ▪ ITU-R Report SM. 2153-7
12050 - 12100 kHz			
BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
12100 - 12230 kHz			
FIXED	FIXED	▪ Fixed Applications	
12230 - 13200 kHz			
MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	▪ Maritime mobile communications	▪ ITU RR Appendix 17 Channelling Plan applies ▪ ITU RR Appendix 25 Allotment Plan applies ▪ 12 577 kHz – DSC for distress and calling; Article 31 applies ▪ 12 520 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. ▪ 12 579 kHz – maritime safety

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			information (MSI); App.17 applies.
13200 - 13260 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile communications	▪ Appendix 26 Allotment Plan applies
13260 - 13360 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile communications	▪ Appendix 27 Allotment Plan applies
13360 - 13410 kHz			
FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY 5.149	▪ Radio Astronomy (Observations of decametric radiation) ▪ Fixed Applications	
13410 - 13450 kHz			
FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	▪ Maritime and/or land mobile communications	
13450 - 13550 kHz			
FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A 5.149A	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A		
13550 - 13570 kHz			
FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) 5.150	▪ Inductive SRD applications (13 553-13 567kHz)	▪ ITU-R Rec.SM 1896-1 ▪ ITU-R Report SM. 2153-7 ▪ ISM band (13 553-13 567kHz)
13570 - 13600 kHz			
BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
13600 - 13800 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
13800 - 13870 kHz			
BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			(WRC-19) applies
13870 - 14000 kHz			
FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	▪ Maritime and/or land mobile communications	
14000 - 14250 kHz			
AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	▪ Amateur communications ▪ Amateur-satellite communications	
14250 - 14350 kHz			
AMATEUR 5.152	AMATEUR	▪ Amateur communications	
14350 - 14990 kHz			
FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	▪ Fixed Applications	
14990 - 15005 kHz			
STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	▪ Search and rescue operations at 14993 kHz	▪ Article 26 applies
15005 - 15010 kHz			
STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	▪	▪ Article 26 applies
15010 - 15100 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile communications	▪ Appendix 26 Allotment Plan applies
15100 - 15600 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
15600 - 15800 kHz			
BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
15800 - 16100 kHz			
FIXED 5.153	FIXED	▪ Fixed Applications	
16100 - 16200 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation 5.145A		
16200 - 16360 kHz			
FIXED	FIXED		
16360 - 17410 kHz			
MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	▪ Maritime mobile communications	▪ ITU RR Appendix 17 Channelling Plan applies ▪ ITU RR Appendix 25 Allotment Plan applies ▪ 16 804.5kHz – DSC for distress and calling; Article 31 applies. ▪ 16 695 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. ▪ 16 806.5 kHz – maritime safety information (MSI); App.17 applies.
17410 - 17480 kHz			
FIXED	FIXED	▪ Fixed Applications	
17480 - 17550 kHz			
BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
17550 - 17900 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
17900 - 17970 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile communications	▪ Appendix 27 Allotment Plan applies
17970 - 18030 kHz			
AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile communications	▪ Appendix 26 Allotment Plan applies
18030 - 18052 kHz			
FIXED	FIXED	▪ Fixed Applications	▪

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
18052 - 18068 kHz			
FIXED Space research	FIXED Space research	▪ Fixed Applications	▪
18068 - 18168 kHz			
AMATEUR AMATEUR-SATELLITE 5.154	AMATEUR AMATEUR-SATELLITE	▪ Amateur communications ▪ Amateur-satellite communications	▪
18168 - 18780 kHz			
FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	▪ Maritime and/or land mobile communications ▪ Fixed Applications	▪
18780 - 18900 kHz			
MARITIME MOBILE	MARITIME MOBILE	▪ Maritime mobile communications	▪ ITU RR Appendix 17 Channelling Plan applies
18900 - 19020 kHz			
BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	▪ HF Sound Broadcasting	▪ Article 12 Planning Procedures and Res.517 (WRC-19) applies
19020 - 19680 kHz			
FIXED	FIXED	▪ Fixed Applications	▪
19680 - 19800 kHz			
MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	▪ Maritime applications	▪ The frequency 19 680.5 kHz is the international frequency for transmission of MSI. Appendix 17 applies.
19800 - 19990 kHz			
FIXED	FIXED	▪ Fixed Applications	▪
19990 - 19995 kHz			
STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	▪ Search and rescue operations at 19993 kHz ±3 kHz	▪ Article 26 applies
19995 - 20010 kHz			
STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	▪ Search and rescue operations at 19993 kHz ±3 kHz	▪ Article 26 applies
20010 - 21000 kHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED	FIXED	▪ Fixed Applications	▪
21000 - 21450 kHz			
AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	▪ Amateur communications ▪ Amateur-satellite communications	▪
21450 - 21850 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies
21850 - 21870 kHz			
FIXED 5.155A 5.155	FIXED	▪ Fixed Applications	▪
21870 - 21924 kHz			
FIXED 5.155B	FIXED 5.155B	▪ Fixed Applications	▪ This band is used by the FS for services related to aircraft flight safety (5.155B)
21924 - 22000 kHz			
AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	▪ Aeronautical mobile communications	▪ Appendix 27 Allotment Plan applies
22000 - 22855 kHz			
MARITIME MOBILE 5.132 5.156	MARITIME MOBILE 5.132	▪ Maritime applications	▪ ITU RR Appendix 17 Channelling Plan applies. ▪ ITU RR Appendix 25 Allotment Plan applies. ▪ The frequency 22 376 kHz is the international frequency for transmission of MSI.
22855 - 23000 kHz			
FIXED 5.156	FIXED 5.156	▪ Fixed Applications	▪ ITU-R Rec.SM.1896-1 ▪ Report ITU-R SM. 2153-7
23000 - 23200 kHz			
FIXED Mobile except aeronautical mobile (R) 5.156	FIXED Mobile except aeronautical mobile (R)	▪ Fixed Applications	▪
23200 - 23350 kHz			
FIXED 5.156A AERONAUTICAL MOBILE (OR)	FIXED (flight safety) 5.156A AERONAUTICAL MOBILE (OR)	▪ Aeronautical mobile communications	▪ The use of this band by the FS is limited to the provision

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			of services related to aircraft flight safety (5.156A)
23350 - 24000 kHz			
FIXED MOBILE except aeronautical mobile 5.157	FIXED MOBILE except aeronautical mobile 5.157	▪ Fixed Applications	▪ The use of this band by the MMS is limited to inter-ship radiotelegraphy (5.157).
24000 - 24450 kHz			
FIXED LAND MOBILE	FIXED LAND MOBILE	▪ Fixed and mobile applications	▪
24450 - 24600 kHz			
FIXED LAND MOBILE Radiolocation 5.132A 5.158	FIXED LAND MOBILE Radiolocation 5.132A	▪ Fixed Applications	▪
24600 - 24890 kHz			
FIXED LAND MOBILE	FIXED LAND MOBILE	▪ Fixed Applications	▪
24890 - 24990 kHz			
AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	▪ Amateur applications	▪
24990 - 25005 kHz			
STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	▪	▪ Article 26 applies
25005 - 25010 kHz			
STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	▪	▪ Article 26 applies
25010 - 25070 kHz			
FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	▪ Fixed and Mobile applications	▪ ITU-R Rec.SM.1896-1 ▪ ITU-Report SM. 2153-7
25070 - 25210 kHz			
MARITIME MOBILE	MARITIME MOBILE	▪ Maritime applications	▪ ITU RR Appendix 17 Channelling Plan applies ▪ Maritime mobile communications

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ International DSC calling at 25208.5 kHz
25210 - 25550 kHz			
FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	▪ Fixed and Mobile Applications	▪
25550 - 25670 kHz			
RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149	▪ Radio Astronomy (Observations of decametric radiation)	▪
25670 - 26100 kHz			
BROADCASTING	BROADCASTING	▪ HF Sound Broadcasting	▪ ITU RR Article 12 Planning Procedures applies.
26100 - 26175 kHz			
MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	▪ Maritime applications	▪ ITU RR Appendix 17 Channelling Plan applies. ▪ ITU RR Appendix 25 Allotment Plan applies. ▪ The frequency 26 100.5 kHz is the international frequency for transmission of MSI. ▪ International DSC calling at 26121 kHz
26175 - 26200 kHz			
FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	▪ Fixed Applications ▪ Mobile systems (single frequency) ▪ CB Radio (26.96-27.410 MHz)	▪
26200 - 26350 kHz			
FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	▪ Fixed and mobile applications	▪

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.133A			
26350 - 27500 kHz			
FIXED MOBILE except aeronautical Mobile 5.150	FIXED MOBILE except aeronautical Mobile 5.150	▪ Fixed and mobile applications ▪ Inductive/non-specific SRD applications (26 957-27 283 kHz): ▪ Wireless control devices ▪ Measurement equipment	▪ Rec. ITU-R SM.1896-X ▪ Report ITU-R SM.2153-X ▪ Rec. ITU-R SM.2103-X
27.5 - 28 MHz			
METEOROLOGICAL AIDS FIXED MOBILE	METEOROLOGICAL AIDS FIXED MOBILE	▪ Fixed and mobile applications ▪ Meteorological applications	
28 - 29.7 MHz			
AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	▪ Amateur communications ▪ Amateur-satellite communications	
29.7 - 30.005 MHz			
FIXED MOBILE	FIXED MOBILE	▪ Fixed Applications	
30.005 - 30.01 MHz			
SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	▪	
30.01 - 37.5 MHz			
FIXED MOBILE	FIXED MOBILE	▪ Fixed and mobile applications ▪ Private Mobile Radio (walkie talkies)	
37.5 - 38.25 MHz			
FIXED MOBILE Radio astronomy	FIXED MOBILE Radio astronomy	▪ Private Mobile Radio (walkie talkies)	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.149	5.149	▪ Radio Astronomy (Observations of decametric radiation)	
38.25 - 39 MHz			
FIXED MOBILE	FIXED MOBILE	▪ Private Mobile Radio (walkie talkies) ▪ Mobile applications	
39 - 39.5 MHz			
FIXED MOBILE Radiolocation 5.132A 5.159	FIXED MOBILE Radiolocation 5.132A	▪ Mobile applications	
39.5 - 39.986 MHz			
FIXED MOBILE	FIXED MOBILE		
39.986 - 40.02 MHz			
FIXED MOBILE Space research	FIXED MOBILE Space research	▪ Private Mobile Radio (walkie talkies)	
40.02 - 40.98 MHz			
FIXED MOBILE 5.150	FIXED MOBILE 5.150	▪ Private Mobile Radio (walkie talkies) ▪ Fixed applications ▪ SRD (40.66 – 40.7 MHz): ▪ Radio Microphone ▪ Wireless control devices ▪ Measurement equipment	▪ Rec. ITU-R SM.1896-X, ▪ Report ITU-R SM.2153-X ▪ ISM band (40.66-40.70 MHz): centre frequency 40.68 MHz
40.98 - 41.015 MHz			
FIXED MOBILE Space research 5.160 5.161	FIXED MOBILE Space research	▪ Private Mobile Radio (walkie talkies)	
41.015 - 42 MHz			
FIXED MOBILE 5.160 5.161 5.161A	FIXED MOBILE	▪ Private Mobile Radio (walkie talkies)	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ Fixed Applications	
42 - 42.5 MHz			
FIXED MOBILE Radiolocation 5.132A 5.160 5.161B	FIXED MOBILE Radiolocation 5.132A	▪	
42.5 - 44 MHz			
FIXED MOBILE 5.160 5.161 5.161A	FIXED MOBILE	▪ Fixed and mobile applications	
44 - 47 MHz			
FIXED MOBILE 5.162 5.162A	FIXED MOBILE	▪ Private Mobile Radio (walkie talkies) ▪ Meteor Burst (45.3-46.9 MHz)	▪ Paired with 47.5-49.1 MHz)
47 - 50 MHz			
BROADCASTING 5.162A 5.163 5.164 5.165	BROADCASTING 5.162A 5.163 5.164 5.165	▪ Private Mobile Radio (walkie talkies) ▪ Meteor Burst (47.5-49.1 MHz) ▪ Broadcasting systems	▪ Paired with 45.3-46.9 MHz ▪ GE89 applies
50 - 52 MHz			
BROADCASTING Amateur 5.166A 5.166B 5.166C 5.166D 5.166E 5.169 5.169A 5.169B 5.162A 5.164 5.165	BROADCASTING Amateur 5.166A 5.166B 5.166C 5.166D 5.166E 5.169 5.169A 5.169B 5.162A 5.164 5.165	▪ Broadcasting systems	▪ GE89 applies ▪ This band is also used for Private Mobile Radio in some countries
52 - 68 MHz			
BROADCASTING 5.162A 5.163 5.164 5.165	BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.169A 5.169 B 5.171	▪ Broadcasting systems	▪ GE89 applies ▪ This band is also used for Private Mobile Radio in some countries

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.169 5.169A 5.169 B 5.171			
68 - 74.8 MHz			
FIXED MOBILE except aeronautical mobile 5.149 5.175 5.177 5.179	FIXED MOBILE except aeronautical Mobile 5.149	▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ Fixed application	▪ In making assignments to stations in the frequency band 73 – 74.6 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
74.8 - 75.2 MHz			
AERONAUTICAL RADIONAVIGATION 5.180 5.181	AERONAUTICAL RADIONAVIGATION 5.180	▪ Instrument Landing System (ILS) ▪ Marker beacons (75 MHz)	
75.2 - 87.5 MHz			
FIXED MOBILE except aeronautical Mobile 5.175 5.179 5.187	FIXED MOBILE except aeronautical Mobile	▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ Fixed and mobile application	
87.5 - 100 MHz			
BROADCASTING 5.190	BROADCASTING	▪ FM Sound broadcasting (87.5-108 MHz)	▪ Geneva 1984 Agreement (GE84) applies
100 - 108 MHz			
BROADCASTING 5.192 5.194	BROADCASTING	▪ FM Sound broadcasting (87.5-108 MHz)	▪ Geneva 1984 Agreement (GE84) applies
108 - 117.975 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
AERONAUTICAL RADIONAVIGATION 5.197 5.197A	AERONAUTICAL RADIONAVIGATION 5.197A	▪ Instrument Landing System (ILS) / Localiser (108-112 MHz) ▪ VHF Omni-directional Range (VOR) (112-117.975 MHz) ▪ Aeronautical mobile communications (108-117.975 MHz)	▪ AM(R)S shall operate in accordance with Res.413(Rev.WRC-07). Safety and regularity of flights; in the band 108-112 MHz AM(R)S limited to ground based transmitters.
117.975 - 137 MHz			
AERONAUTICAL MOBILE (R) 5.111 5.200 5.201 5.202	AERONAUTICAL MOBILE (R) 5.111 5.200	▪ 117.975-121.450 MHz ▪ Aeronautical mobile communications ▪ 121.450-121.550 MHz ▪ International Distress Frequency (121.5 MHz) ▪ 121.550-137.000 MHz ▪ Aeronautical mobile communications	▪ Safety and regularity of flights ▪ EPIRBs at 121.5 MHz ▪ ITU RR Article 31 applies ▪ 123.1 MHz - auxiliary emergency frequency
137 - 137.025 MHz			
SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE- SATELLITE (space-to-Earth) 5.208A,5.208B, 5.209 SPACE RESEARCH (space-to- Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE- SATELLITE (space-to-Earth) 5.208A,5.208B, 5.209 SPACE RESEARCH (space-to- Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	▪	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
137.025 - 137.175 MHz			
SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth)	SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth)	▪	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208		Public Access Mobile Radio (walkie talkies)
137.175 - 137.825 MHz			
SPACE OPERATION (space-to-Earth)5.203C 5.2029A METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth)5.203C 5.209A METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	▪ NOAA[1] meteorology satellite (137.500-137.620 MHz)	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
137.825 - 138 MHz			
SPACE OPERATION (space-to-Earth)5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth)5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.204 5.205 5.206 5.207 5.208	▪	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
138 - 143.6 MHz			
AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE FIXED 5.211 5.214	▪ Aeronautical Communications (OR)	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
143.6 - 143.65 MHz			

[1] National Oceanic and Atmospheric Administration

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) SPACE RESEARCH MARITIME MOBILE MOBILE FIXED (space-to-Earth)5.211 5.214	▪ Aeronautical Communications (OR)	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
143.65 - 144 MHz			
AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) MARITIME MOBILE MOBILE FIXED 5.211 5.214	▪ Aeronautical Communications (OR)	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
144 - 146 MHz			
AMATEUR AMATEUR-SATELLITE 5.216	AMATEUR AMATEUR-SATELLITE	▪ Amateur satellite systems	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
146 - 148 MHz			
FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	▪ Private Mobile Radio (walkie talkies) ▪ Fixed applications	
148 - 149.9MHz			
FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	▪ Mobile satellite communications (Little LEO) ▪ Fixed applications ▪ Private Mobile Radio (walkie talkies)	▪ For some Little LEO systems this band is supplemented by the band 149.9-150.05 MHz
149.9 - 150.05 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	MOBILE-SATELLITE (Earth-to-space) 5.209 RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	▪ Mobile satellite communications (Little LEO)	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
150.05 - 153 MHz			
FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	▪ Private Mobile Radio (walkie talkies) and/or Public Access ▪ Mobile Radio (walkie talkies) ▪ Paging ▪ Fixed applications ▪ Radio Astronomy (continuum band and also used for pulsar and solar observation)	
153 - 154 MHz			
FIXED MOBILE except aeronautical mobile (R) Meteorological aids	FIXED MOBILE except aeronautical mobile (R) Meteorological aids	▪ Private Mobile Radio (walkie talkies) ▪ Fixed applications	
154 -156.4875 MHz			
FIXED MOBILE except aeronautical mobile (R) 5.225A 5.226	FIXED MOBILE except aeronautical mobile (R) 5.226	▪ 154-156 MHz ▪ Private Mobile Radio (walkie talkies)	
156.4875 - 156.5625 MHz			
MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	▪ 156.00-156.4875 MHz ▪ Maritime mobile communications (Ship stations)	▪ Paired with 160.625-160.950 MHz, single frequency 156.3 MHz and

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ Land mobile in areas remote from coast	in the band 156.375-156.475 MHz ▪ ITU RR Articles 31 and 52 and Appendix 18 apply.
156.5625 - 156.7625 MHz ▪			
FIXED MOBILE except aeronautical mobile (R) 5.226	FIXED MOBILE except aeronautical mobile (R) 5.226	▪ Fixed and mobile applications ▪ Maritime mobile communications ▪ Land mobile in areas remote from coast ▪ Private Mobile Radio (walkie talkies)	▪ Single frequency applications, ITU RR Articles 31 and 52 and Appendix 18 apply
156.7625 - 156.7875 MHz			
MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE Mobile-satellite (Earth-to-space) 5.111 5.226 5.228	▪ Maritime applications	▪ ITU RR Article 31 and Appendix 18 apply to the use of this band. ▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
156.7875 - 156.8375 MHz			
MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) 5.111 5.226	▪ Maritime applications ▪ International distress, urgency, safety and calling by radiotelephony at 156.8 MHz (VHF-CH16) ▪ Search and rescue operations at 156.8 MHz	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
156.8375 - 157.1875 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile 5.226	FIXED MOBILE except aeronautical mobile 5.226	▪ Maritime applications	▪ In some countries this band is also used for Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)
157.1875 - 157.3375 MHz			
FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228 AC 5.226	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228 AC 5.226	▪ Maritime mobile ▪ communications (ship ▪ Stations). Land mobile in areas remote from coast.	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
157.3375 - 161.7875 MHz			
FIXED MOBILE except aeronautical mobile 5.226	FIXED MOBILE except aeronautical mobile 5.226	▪ PMR/PAMR ▪ Maritime Communications ▪ 157.450-160.6 MHz (PMR and/or PAMR) ▪ 160.600-160.975 MHz Maritime mobile communications (Coast stations). ▪ Land mobile in areas remote from coast. ▪ This frequency is Paired with 156.025-156.350 MHz; ITU RR Articles 31 and 52 and Appendix 18 applies ▪ 160.975-161.475 MHz(PMR and/or PAMR	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
161.7875 - 161.9375 MHz			
FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226 5.226	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite 5.208A 5.208B 5.228AB 5.228AC 5.226	▪ Fixed/ Land `mobile communication	▪ ITU RR Articles 31 and 52 and Appendix 18 apply

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
161.9375-161.9625 MHz			
FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	▪ Maritime applications ▪ Private Mobile Radio (walkie talkies) and/or Public Access	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
161.9625-161.9875 MHz			
FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	▪ Maritime applications ▪ Private Mobile Radio (walkie talkies)	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
161.9875-162.0125 MHz			
FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	▪ Maritime applications ▪ Private Mobile Radio (walkie talkies)	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
162.0125 - 162.0375 MHz			
FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B 5.229	FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	▪ Maritime applications ▪ Private Mobile Radio (walkie talkies) and/or Public Access	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
162.0375 - 174 MHz			
FIXED MOBILE except aeronautical mobile 5.226 5.229	FIXED MOBILE except aeronautical mobile 5.226	▪ Fixed and mobile applications ▪ Private Mobile Radio (walkie talkies) and/or Public Access	▪ ITU RR Articles 31 and 52 and Appendix 18 apply
174 - 223 MHz			
BROADCASTING 5.235 5.237 5.243	BROADCASTING	▪ Geneva Agreement 2006 (GE06). ▪ Digital Sound Broadcasting	▪ TV Band III

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ T-DAB & DVB-T (174-230 MHz) ▪ SRD: Wireless (Radio) microphones (174 – 216 MHz)	▪ Migration from analogue to digital in accordance with each African Country time lines ▪ GE06 Plan applies ▪ Wireless microphones, see Rec. ITU-R BT.1871-X, ETSI EN 300 422
223 - 230 MHz			
BROADCASTING Fixed Mobile 5.243 5.246 5.247	BROADCASTING Fixed Mobile	▪ Geneva Agreement 2006 (GE06). ▪ Digital Sound Broadcasting ▪ T-DAB & DVB-T (174-230 MHz) ▪ SRD: Wireless (Radio) Microphone	▪ TV Band III ▪ Migration from analogue to digital in accordance with each African Country time lines ▪ GE06 Plan applies ▪ Wireless microphones, see Rec. ITU-R BT.1871-X
230 - 235MHz			
FIXED MOBILE 5.247 5.251 5.252	FIXED MOBILE	▪ Fixed and Mobile Applications	▪ In some countries, the band 230-238 MHz is used for TV broadcasting (TV Band III).
235 - 267 MHz			
FIXED MOBILE 5.111 5.252 5.254 5.256 5.256A	235-238 MHz FIXED MOBILE	▪ Fixed/ Land mobile communications	
	238-246 MHz MOBILE 5.111 5.254 5.256	▪ 238-242.95 MHz PMR and/or PAMR	
		▪ 242.95-243.05 MHz International Distress Frequency (243 MHz)	
		▪ 243.05-246.00 MHz Low-power devices ancillary to the broadcasting service.	
	246-254 MHz FIXED	▪ Fixed/ Land mobile communications	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
	MOBILE		
	254-267 MHz MOBILE 5.254	▪ PMR and/or PAMR	
267 - 272 MHz			
FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	▪ Fixed/ Land mobile communications	
272 - 273 MHz			
SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	▪ Fixed/ Land mobile communications	
273 - 312 MHz			
FIXED MOBILE 5.254	FIXED MOBILE 5.254	▪ Point to point Studio to Transmitter Links (STL) within the band 290-312 MHz	
312 - 315 MHz			
FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	▪ Fixed/ Land mobile communications	
315 - 322 MHz			
FIXED MOBILE 5.254	FIXED MOBILE 5.254	▪ Fixed/ Land mobile communications	
322 - 328.6 MHz			
FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY 5.149	▪ Fixed/ Land mobile communications ▪ Radio Astronomy services (Observation of deuterium)	
328.6 - 335.4 MHz			
AERONAUTICAL RADIONAVIGATION 5.258 5.259	AERONAUTICAL RADIONAVIGATION 5.258	▪ Band 328.6-335.4 MHz is limited to Instrument	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		Landing Systems (glide path).	
335.4 - 387 MHz			
FIXED MOBILE 5.254	FIXED MOBILE 5.254	335.4-336 MHz PMR and/or PAMR	
		336-346 MHz Fixed Wireless Access	PTP/PTMP rural system; Paired with 356-366 MHz
		346.0-356.0 MHz PMR and/or PAMR	
		356.0-366.0 MHz Fixed Wireless Access	PTP/PTMP rural system; Paired with 336-346 MHz
		366.0-380.0 MHz PMR and/or PAMR	
		380.0-387.0 MHz Public Protection and Disaster Relief (PPDR) Private Mobile Radio (walkie talkies)	Paired with 390.0-397.0 MHz To be used mainly for digital systems. For PPDR Refer to Annex E
387 - 390 MHz			
FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	▪ 387.0-390.0 MHz Private Mobile Radio (walkie talkies) ▪ Fixed applications	▪ Paired with 397.0-399.9 MHz To be used mainly for digital systems.
390 - 399.9 MHz			
FIXED MOBILE 5.254	FIXED MOBILE 5.254	▪ 390.0-395.0 MHz Public Protection and Disaster Relief (PPDR)	▪ Paired with 380.0-387.0 MHz To be used mainly for digital systems. ▪ For PPDR Refer to Annex E of the AfriSAP
		▪ 395.0-399.9 MHz PMR and/or PAMR	▪ Paired with 387.0-390.0 MHz To be used mainly for digital systems.
399.9 - 400.05 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	MOBILE-SATELLITE (Earth-to-space) 5.209 5.220 5.260A 5.260B	▪ Mobile satellite services - Uplink	
400.05 - 400.15 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
STANDARD FREQUENCY AND TIME SIGNALSATELLITE (400.1 MHz) 5.261 5.262	STANDARD FREQUENCY AND TIME SIGNALSATELLITE (400.1 MHz) 5.261	▪ Standard Frequency and Time Signal Satellite Services (400.1 MHz)	▪ Article 26 applies
400.15 - 401 MHz			
METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.264	▪ Meteorological applications	
401 - 402 MHz			
METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	▪ Meteorological applications ▪ Fixed and Mobile applications SRD: ▪ Ultra-low power active medical implants (ULP-AMI)	▪ Report ITU-R SM.2153-X ▪ ULP-AMI (402 – 405 MHz) Rec. ITU-R RS.1346
402 - 403 MHz			
METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile 5.264A 5.264B	▪ Meteorological applications (Weather Radars) ▪ Fixed and Mobile applications ▪ SRD: ▪ Ultra low power active medical implants (ULP-AMI)	▪ Report ITU-R SM.2153-X ▪ ULP-AMI (402 – 405 MHz) Rec. ITU-R RS.1346
403 - 406 MHz			
METEOROLOGICAL AIDS Fixed	METEOROLOGICAL AIDS Fixed	▪ Meteorological Aids	▪ ULP-AMI (402 – 405 MHz) Rec. ITU-R RS.1346, Report

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
Mobile except aeronautical mobile 5.265	Mobile except aeronautical mobile	▪ Fixed/ Land mobile communications SRD: ▪ Ultra low power active medical implants (ULP-AMI)	ITU-R SM.2153-X, ETSI EN 302 537 (405 – 406 MHz)
406 - 406.1 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267	MOBILE-SATELLITE (Earth-to-space)5.265 5.266 5.267	▪ Low power satellite EPIRBs (distress and safety purposes)	▪ ITU RR Articles 32 and 34 and Appendix 15 applies
406.1 - 410 MHz			
FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY	▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR ▪ Fixed applications	
410 - 420 MHz			
FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR ▪ Fixed and Mobile applications ▪ Measurement and Remote-control equipment	For PPDR Refer to Annex E of AfriSAP
420 - 430 MHz			
FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	FIXED MOBILE except aeronautical mobile Radiolocation	▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies)	▪ For PPDR Refer to Annex E of AfriSAP

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ PPDR ▪ Fixed applications	
430 - 432 MHz			
AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277	AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277	▪ Amateur Applications ▪ PPDR	▪ In some countries this band is used for Public Mobile Radio and Public access Mobile Radio and fixed applications ▪ For PPDR Refer to Annex E of AfriSAP
432 - 438 MHz			
AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.276 5.277 5.280 5.281 5.282	AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.276 5.277 5.280 5.281 5.282	▪ Amateur Applications (432-438 MHz) ▪ Amateur-satellite Applications (435-438 MHz) ▪ Non-specific SRD applications (433.05-434.79 MHz) ▪ PPDR	▪ In some countries this band is used for Public Mobile Radio and Public access Mobile Radio and fixed applications ▪ Conditions for amateur satellite service is given in 5.282 ▪ ISM band (433.05-434.79 MHz) ▪ For PPDR Refer to Annex E of AfriSAP
438 - 440 MHz			
AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277 5.283	AMATEUR RADIOLOCATION 5.271 5.274 5.275 5.276 5.277 5.283	▪ Amateur ▪ PPDR	▪ In some countries this band is used for Public Mobile Radio and Public access Mobile Radio and fixed applications ▪ For PPDR Refer to Annex E of AfriSAP
440 - 450 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.286	FIXED MOBILE except aeronautical mobile Radiolocation 5.286	Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) PPDR FIXED (telemetry, dual frequency alarm systems) SRD : Private Mobile Radio (PMR/dPMR446(446.0-446.2 MHz))	PMR/dPMR446: -see Report ITU-R M.2474, ETSI EN 303 405 and ECC/DEC/(15)05 For PPDR Refer to Annex E of AfriSAP
450 - 455 MHz			
FIXED MOBILE 5.286AA 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	FIXED MOBILE 5.286AA 5.209 5.286 5.286A	▪ Fixed links (PTP) ▪ IMT (450-470 MHz) ▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR	▪ For PPDR Refer to Annex E of AfriSAP
455 - 456 MHz			
FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE 5.286AA 5.209 5.286A	▪ Fixed links (PTP) ▪ IMT (450-470 MHz) ▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR	
456 - 459 MHz			
FIXED MOBILE 5.286AA 5.271 5.287 5.288	FIXED MOBILE 5.286AA 5.287	▪ Fixed links (PTP) ▪ IMT (450-470 MHz)	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR	
459 - 460 MHz			
FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE 5.286AA 5.209 5.286A	▪ Fixed links (PTP) ▪ IMT (450-470 MHz) ▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR	
460 - 470 MHz			
FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.289	▪ Fixed links (PTP) ▪ IMT (450-470 MHz) ▪ Private Mobile Radio (walkie talkies) and/or Public Access Mobile Radio (walkie talkies) ▪ PPDR	
470 - 694 MHz			
BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	BROADCASTING 5.149 5.296 5.304 5.311A	▪ DTT broadcasting (470-694 MHz) ▪ VLBI Observations (608 – 614 MHz) ▪ Services ancillary to broadcasting and program making (SAB/SAP) ▪ SRD:	▪ Any Band IV/V Analogue terrestrial television to migrate to digital terrestrial television ▪ GE06 Plan applies ▪ SAB/SAP: Report ITU-R BT.2338-X and Report ITU-R BT.2344-X

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ Wireless Audio Applications Radio Microphones	▪ Wireless microphones, see Rec. ITU-R BT.1871-X and ETSI EN 300 422
694 - 790 MHz			
MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312	▪ Digital dividend band II for International mobile telecommunication systems (IMT) ▪ IMT (703-733/758-788 MHz)	▪ AU Guidelines on the harmonized use of the DD in Africa applies. Also, Res 646 (rev. WRC-19), Rec. ITU-R M. 2015 , Rec. ITU-R M. 1036 and Res. 760 (rev. WRC-19) apply ▪ Res. 224 (rev. WRC-19) applies for IMT.
790 - 862 MHz			
FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319	▪ Digital dividend band I for International mobile telecommunication systems (IMT) ▪ IMT (832-862 MHz /791-821)	▪ AU Guidelines on the harmonized use of the DD in Africa applies. Also, Res 646 (rev. WRC-19) and Res. 749 (rev. WRC-19) apply. ▪ Res. 224 (REV. WRC-19) applies for IMT.
862 - 890 MHz			
FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	▪ Mobile cellular networks ▪ GSM-R (876-880/921-925 MHz) ▪ GSM (880-915 MHz/925-960 MHz) ▪ IMT (880-915 MHz/925-960 MHz)	▪ AU Guidelines on the harmonized use of the DD in Africa applies
890 - 942 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation 5.323	FIXED MOBILE except aeronautical mobile 5.317A Radiolocation	▪ Mobile cellular networks ▪ GSM-R (876-880/921-925 MHz) ▪ GSM (880-915 MHz/925-960 MHz) ▪ IMT (880-915 MHz/925-960 MHz)	▪ AU Guidelines on the harmonized use of the DD in Africa applies
942 - 960 MHz			
FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	FIXED MOBILE except aeronautical mobile 5.317A	▪ Mobile cellular networks ▪ GSM-R (876-880/921-925 MHz) ▪ GSM (880-915 MHz/925-960 MHz) ▪ IMT (880-915 MHz/925-960 MHz)	
960 - 1164 MHz			
AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA	AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328	▪ Distance measuring equipment Secondary surveillance radar ▪ 1087.7-1092.3 MHz Automatic Dependent Surveillance-Broadcast (ADS-B)	▪ Res. 425 (WRC-19) applies (global flight tracking for civil aviation)
1164 - 1215 MHz			
AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	▪ GPS systems-Galileo (1164-1214 MHz) GLONASS (1190.3-1213.8 MHz) ▪ Aeronautical radionavigation systems: ▪ -Distance Measurement Equipment ▪ -Surveillance Radar	
1215 - 1240 MHz			

ITU RR REGION 1 ALLOCATIONS		EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332		EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	▪ GLONASS (1237.8-1253.8 MHz) GPS (1215.6-1239.6 MHz)	
1240 - 1300 MHz				
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A		EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.332 5.335A 1215 - 1300 MHz RADIONAVIGATION 5.331	▪ GLONASS (1237.8-1253.8 MHz) Galileo (1260-1300 MHz)	
1300 - 1350 MHz				
RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A		RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	▪ Aeronautical radionavigation systems: Ground Base Radar	▪ In making assignments to stations in the frequency band 1330-1350 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
1350 - 1400 MHz				
FIXED MOBILE RADIOLOCATION 5.149 5.338 5.338A 5.339		FIXED MOBILE RADIOLOCATION 5.149 5.338A 5.339	▪ 1 350-1 375 MHz ▪ Fixed links (duplex)	▪ Paired with 1492-1517 MHz ▪ REC ITU- R F 1242 ▪ In making assignments to stations in the frequency band 1350-1375 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ 1 375-1 400 MHz ▪ Fixed links (duplex)	▪ Paired with 1427-1452 MHz ▪ REC ITU- R F 1242 ▪ In making assignments to stations in the frequency band 1375-1400 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
1400 - 1427 MHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	▪ Radio Astronomy (Hydrogen line and continuum observations)	▪ All emissions are prohibited in this band.
1427 - 1429 MHz			
SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.338A 5.341	▪ International Mobile Telecommunications (IMT) 1427-1518 MHz	▪ Paired with 1375-1400 MHz; ▪ REC ITU- R F 1242/ REC ITU- R F 701 ▪ Identified for IMT (Rec.1036) ▪ Res.223 (Rev. WRC-19) applies for IMT.
1429 - 1452 MHz			
FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	FIXED MOBILE except aeronautical mobile 5.338A 5.341 5.342	▪ International Mobile Telecommunications (IMT) 1427-1518 MHz	▪ Res.223 (Rev. WRC-19) applies for IMT. ▪ Recommendation 1036 ▪ REC ITU- R F 1242/ REC ITU- R F 701
1452 - 1492 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.342 5.345	FIXED MOBILE except aeronautical mobile 5.346	▪ International Mobile Telecommunications (IMT) 1427-1518 MHz	▪ Res. 223 (Rev.WRC-19) applies for IMT
1492 - 1518 MHz			
FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	▪ International Mobile Telecommunications (IMT) 1427-1518 MHz	▪ Res. 223 (Rev.WRC-19) applies for IMT
1518 - 1525 MHz			
FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341 5.342	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341	▪ Fixed links ▪ The band 1518-1559 MHz is allocated for satellite component of IMT; Res.225 applies.	▪ REC ITU- R F 1242/ REC ITU- R F 701
1525 - 1530 MHz			
SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.341 5.351 5.352A 5.354	▪ Fixed links ▪ The band 1518-1559 MHz is allocated for satellite component of IMT; Res.225 applies.	▪ This band also carries Maritime safety Information (MSI) for vessels in Navigation Area ▪ REC ITU- R F 1242/ REC ITU- R F 701
1530 - 1535 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.351 5.354	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.351 5.354	▪ GMDSS (SAT-COM) in 1 530–1 544 MHz ▪ Mobile satellite systems ▪ Fixed applications	▪ In the band 1530-1544 MHz priority for maritime mobile distress, urgency and safety communications (GMDSS); Res.222 applies. ▪ REC ITU- R F 1242/ REC ITU- R F 701 ▪ This band also carries Maritime safety Information (MSI) for vessels in Navigation Area
1535 - 1559 MHz			
MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	Mobile satellite systems GMDSS (SAT-COM) in 1 530–1 544 MHz / (D&S-OPS) in 1544–1545 MHz	▪ In the band 1530-1544 MHz priority for maritime mobile distress, urgency and safety communications (GMDSS); Res.222 applies. ▪ This band also carries Maritime safety Information (MSI) for vessels in Navigation Area
1559 - 1610 MHz			
AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	AERONAUTICAL- RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	▪ Galileo (1559.42-1591.42 MHz) ▪ GLONASS (1592.9-1610.5 MHz) ▪ GPS (1563.42-1587.42 MHz	
1610 - 1610.6 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.364 5.366 5.367 5.368 5.369 5.371 5.372	▪ GLONASS (1592.9-1610.5 MHz)	▪ This band is designated world-wide for the MSS. Paired with 2483.5-2484.1 MHz for some systems.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372			
1610.6 - 1613.8 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.364 5.366 5.367 5.368 5.371 5.372	▪ Radio Astronomy (Observation of OH radical and molecules)	▪ This band is designated world-wide for the MSS. Paired with 2484.1-2487.3 MHz for some systems.
1613.8 - 1621.35 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B 5.341 5.355 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	▪ Mobile satellite systems	▪ Paired with 1593-1594 MHz for aeronautical public correspondence
1621.35 - 1626.5 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MARITIME MOBILE-SATELLITE(space-to-Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth) 5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	MARITIME MOBILE-SATELLITE (space-to-Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth) 5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	▪ Used for distress and safety purposes in the Earth-to-space and space-to-Earth directions in the maritime mobile-satellite service ▪ Mobile satellite systems	▪ Paired with 1593-1594 MHz for aeronautical public correspondence
1 626.5-1 660 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376	▪ GMDSS (SAT-COM) in 1626.5 – 1645.5 MHz ▪ GMDSS (D&S-OPS) in 1645.5-1646.5 MHz ▪ Mobile satellite systems	▪ In the band 1626.5-1645.5 MHz priority is given to maritime mobile distress, urgency and safety communications (GMDSS); Res.222 applies.
1 660-1 660.5 MHz			
MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	▪ Radio Astronomy (Observation of OH radical and molecules)	▪ REC ITU- R F 701
1660.5 - 1668 MHz			
RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	▪ Fixed Applications ▪ Radio Astronomy (Observation of OH radical and molecules)	▪ REC ITU- R F 701
1668 - 1668.4 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	▪ Radio Astronomy (Observation of OH radical and molecules)	▪ REC ITU- R F 701
1668.4 - 1670 MHz			
METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	▪ Radio Astronomy (Observation of OH radical and molecules)	▪ REC ITU- R F 701
1670 - 1675 MHz			
METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A		▪ REC ITU- R F 701
1675 - 1690 MHz			
METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	▪ Fixed Applications	▪ REC ITU- R F 701
1690 - 1700 MHz			
METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile	▪ Meteorological aids Meteorological satellite downlink	▪ REC ITU- R F 701

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.289 5.341 5.382	5.289 5.341 5.382		
1700 - 1710 MHz			
FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 5.289 5.341	▪ Fixed links (single frequency) ▪ Land mobile users ▪ Meteorological satellite users	▪ REC ITU- R F 701
1710 - 1930 MHz			
FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.388	▪ Cellular mobile networks within 1710-1785/1805-1880 MHz and 1920-1980 ▪ GSM/IMT	▪ Res.223 (Rev. WRC-19) applies for IMT. ▪ Paired with 1805-1880 MHz. ▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098 ▪ In making assignments to stations in the frequency band 1718.8-1722.2 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
1930 - 1970 MHz			
FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	▪ Cellular mobile networks within 1920-1980 MHz ▪ IMT (Terrestrial) ▪ Paired with 2110-2170 MHz	▪ Res.223 (Rev. WRC-19) applies for IMT. ▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098
1970 - 1980 MHz			
FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	▪ Cellular mobile networks within 1920-1980 MHz ▪ IMT (Terrestrial)	▪ Res.223 (Rev. WRC-19) applies for IMT.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098
1980 - 2010 MHz			
FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	▪ IMT (satellite) (1980-2010 MHz) Paired with 2170 - 2200 MHz.	▪ Paired with 2170 - 2200 MHz. ▪ The development of satellites for IMT services to be monitored. ▪ Res 212 (Rev. WRC-19) applies. ▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098 ▪ Res.223 (Rev. WRC-19) applies for IMT.
2010 - 2025 MHz			
FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	▪ IMT (terrestrial) (2010-2025 MHz) ▪ Fixed Applications	▪ TDD ▪ Res.223 (Rev. WRC-19) applies for IMT. ▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098
2025 - 2110 MHz			
SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	▪ Fixed/Land mobile communications ▪ Fixed links (2025-2110 MHz paired with 2200-2285 MHz)	▪ Radio Frequency channel arrangement according to Rec. ITU-R F.1098. ▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098
2110 - 2120 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	▪ Cellular mobile networks ▪ IMT (terrestrial) (2110-2170 MHz) paired with 1920-1980 MHz	▪ Paired with 1920-1980 MHz ▪ Rec. ITU-R M.1036 applies ▪ Res.223 (Rev. WRC-19) applies for IMT.
2120 - 2160 MHz			
FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	▪ Cellular mobile networks ▪ IMT (terrestrial) (2110-2170 MHz) paired with 1920-1980 MHz	▪ Res.223 (Rev. WRC-19) applies for IMT.
2160 - 2170 MHz			
FIXED MOBILE 5.388A 5.388B 5.388	FIXED MOBILE 5.388A 5.388B 5.388	▪ Cellular mobile networks ▪ IMT (terrestrial) (2110-2170 MHz) paired with 1920-1980 MHz	▪ Res.223 (Rev. WRC-19) applies for IMT.
2170 - 2200 MHz			
FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A	▪ Fixed/Land mobile communications ▪ Mobile Satellite Services ▪ IMT (satellite) (2170-2200 MHz) ▪ Paired with 1980-2010 MHz. ▪ The development of satellites for IMT services to be monitored.	▪ Paired with 1980-2010 MHz. ▪ The development of satellites for IMT services to be monitored. ▪ Rec. ITU-R M.1036 applies ▪ Res 212 (Rev. WRC-19) applies. ▪ Res.223 (Rev. WRC-19) applies for IMT. ▪ REC ITU- R F 701/ REC ITU- R F 382/ REC ITU- R F 1098
2200 - 2290 MHz			
SPACE OPERATION (space-to-Earth) (space-to-space)	SPACE OPERATION (space-to-Earth) (space-to-space)	▪ TV point to point Studio to Transmitter Links (STL)	▪ Radio Frequency channel arrangement according to Rec. ITU-R F.1098.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	within the band 2207.5-2277.5 MHz ▪ Earth exploration satellite applications ▪ BFWA (2 285-2 300 MHz)	
2290 - 2300 MHz			
FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth	▪ Fixed/Land mobile communications ▪ BFWA (2 285-2 300 MHz)	
2300 - 2450 MHz			
FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282 5.395	FIXED MOBILE 5.384A Amateur Radiolocation 5.150	▪ Fixed Links PTP/PTMP ▪ IMT within the band 2300-2400 MHz. (TDD) ▪ Also allocated to ISM within 2400-2500 MHz ▪ BFWA	▪ IMT Radio Frequency Channel arrangement according to Rec. ITU-R M.1036
2450 - 2483.5 MHz			
FIXED MOBILE Radiolocation 5.150 5.397	FIXED MOBILE Radiolocation 5.150	▪ Allocated to ISM within 2400-2500 MHz (5.150) ▪ SRD applications (2 400-2 483.5 MHz)	▪ REC ITU- R F 701/ REC ITU- R F 746 / REC ITU- R F 1243
2483.5 - 2500 MHz			
FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION SATELLITE (space-to-Earth) 5.398 Radiolocation 5.398A 5.150 5.399 5.401 5.402	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION - SATELLITE (space-to-Earth) 5.398 Radiolocation 5.150 5.402	▪ Allocated to within ISM 2400-2500 MHz(5.150) ▪ 2400-2500 MHz ▪ SRD applications (2 400-2 483.5 MHz)	▪ REC ITU- R F 701/ REC ITU- R F 746 / REC ITU- R F 1243
2500 - 2520 MHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	▪ International Mobile Telecommunication (IMT)	▪ Res.223 (Rev. WRC-19) applies for IMT.
2520 - 2655 MHz			
FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.405 5.412 5.418B 5.418C	FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.405 5.412 5.418B 5.418C	▪ International Mobile Telecommunication (IMT)	▪ Res.223 (Rev. WRC-19) applies for IMT.
2655 - 2670 MHz			
FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	▪ International Mobile Telecommunication (IMT)	▪ Res.223 (Rev. WRC-19) applies for IMT.
2670 - 2690 MHz			
FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	▪ International Mobile Telecommunication (IMT)	▪ Res.223 (Rev. WRC-19) applies for IMT.
2690 - 2700 MHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy Radio Astronomy (Continuum measurements and galactic studies)	
2700 - 2900 MHz			
AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423	▪ Aeronautical radionavigation radars :	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		PSR (primary surveillance radar) ▪ Meteorological radar	
2900 - 3100 MHz			
RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	▪ Aeronautical radionavigation radars: PSR (primary surveillance radar) ▪ Meteorological radar	
3100 - 3300 MHz			
RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149	▪ ▪ Radiolocation services	▪ In making assignments to stations in the frequency band 3100-3300 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
3300 - 3400 MHz			
RADIOLOCATION 5.149 5.429 5.429A 5.429B 5.430	RADIOLOCATION MOBILE except aeronautical mobile 5.149 5.429	▪ International Mobile Telecommunication (IMT)	▪ Res. 223 (Rev.WRC-19) applies. ▪ IMT Radio Frequency Channel arrangement according to Rec. ITU-R M.1036 ▪ Report ITU-R M.2481 may be consulted ▪ In making assignments to stations in the frequency band 3300-3400 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
3400 - 3600 MHz			
FIXED	FIXED	▪ BFWA	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED-SATELLITE (space-to-Earth) MOBILE 5.430A Radiolocation 5.431	FIXED-SATELLITE (space-to-Earth) MOBILE 5.430A Radiolocation 5.431	▪ International Mobile Telecommunication (IMT)	
3600 - 4200 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) Mobile	FIXED FIXED-SATELLITE (space-to-Earth) Mobile	▪ Fixed services for PtP in the range 3600-4200 MHz ▪ Fixed-satellite (space-to-Earth) for PtP/VSAT/SNG in the range 3600-4200 MHz ▪ BFWA in the range 3600-3800MHz	▪ The channelling arrangement for PTP links in this band is based on Rec. ITU-R F.635 ▪ ITU- R F 1488/ REC ITU- R F 635 ▪ Resolution 246 (WRC-19) applies for BFWA. ▪ Some administrations are considering the use of the frequency band 3600 - 3800 MHz for future systems operating in the mobile service.
4200 - 4400 MHz			
AERONAUTICAL MOBILE (R) 5.440 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440	AERONAUTICAL RADIONAVIGATION 5.438 5.440	▪ Radio altimeters – aircraft radio station ▪ Wireless Intra-Avionic Communication (WIAC) (5.436)	
4400 - 4500 MHz			
FIXED MOBILE 5.440A	FIXED MOBILE	▪ Point to point fixed links for network mobile operators	▪ REC ITU- R F 1099
4500 - 4800 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	▪ Point to point fixed links for network mobile operators	▪ The band 4 500-4 800 MHz is part of the APP30B Plan (FSS space-to-Earth). Refer to Annex C.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ REC ITU- R F 1099 ▪ Ultra-wideband applications (UWB): see Rec. ITU-R SM.1896-X, Rec. ITU-R SM.1755and Report ITU-R SM.2153-X
4800 - 4990 MHz			
FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443	FIXED MOBILE 5.442 Radio astronomy 5.149 5.339	▪ International Mobile Telecommunication (IMT) ▪ Point to point Fixed links for network mobile operators ▪ Radio Astronomy (Observations of formaldehyde (H2CO) interstellar clouds)	▪ Res. 223 (Rev.WRC-19) applies.
4990 - 5000 MHz			
FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	▪ Point to point fixed links for network mobile operators	▪ REC ITU- R F 1099
5000 - 5010 MHz			
AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	▪ Aeronautical radionavigation Radio-navigation satellite uplink Aeronautical Mobile-Satellite (R)	
5010 - 5030 MHz			
AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL 5.328B 5.443B	▪ Aeronautical radionavigation Radio-navigation satellite uplink &	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space)	downlink Aeronautical Mobile-Satellite (R)	
5030 - 5091 MHz			
AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL- RADIONAVIGATION 5.444	▪ Aeronautical radionavigation ▪ Aeronautical Mobile (R) Aeronautical Mobile-Satellite (R) ▪ Microwave landing system	
5091 - 5150 MHz			
FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	FIXED-SATELLITE (Earth-to-space) 5.444A AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444	▪ Fixed Satellite (Earth-to-Space) ▪ Aeronautical radionavigation ▪ Aeronautical mobile ▪ Aeronautical ▪ Mobile-Satellite (R)	
5150 - 5250 MHz			
FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.446 5.446C 5.447 5.447B 5.447C	FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.446C 5.447B 5.447C	▪ Land mobile 5 150-5 250 MHz ▪ Wireless Access Systems (WAS)/RLAN	▪ Res. 229 (rev. WRC-19)
5250 - 5255 MHz			
EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.447E 5.448 5.448A	▪ ▪ Land mobile 5 250-5 255 MHz ▪ Wireless Access Systems (WAS)/RLAN	▪ Res. 229 (rev. WRC-19)
5255 - 5350 MHz			
EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)	▪ Land mobile 5 255-5 350 MHz	▪ Res. 229 (rev. WRC-19)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.447E 5.448 5.448A	▪ Wireless Access Systems (WAS)/RLAN	
5350 - 5460 MHz			
EARTH EXPLORATION-SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C	EARTH EXPLORATION-SATELLITE (active) 5.448B RADIOLOCATION 5.448D AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448C	▪ Aeronautical radionavigation - Ground based and airborne weather radar	
5460 - 5470 MHz			
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448B	▪ Radionavigation - airborne weather radar ▪ Earth exploration satellite service ▪ Space research ▪ Radiolocation	
5470 - 5570 MHz			
EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451	EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active) 5.448B 5.450 5.451	▪ Wireless Access Systems (WAS)/RLAN	▪ Res. 229 (rev. WRC-19)
5570 - 5650 MHz			
MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.450 5.451 5.452	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.450 5.451 5.452	▪ Wireless Access Systems (WAS)/RLAN ▪ Ground-based meteorological radars (5600-5650 MHz)	▪ Res. 229 (rev. WRC-19)
5650 - 5725 MHz			
MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION	MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION	▪ Wireless Access Systems (WAS)/RLAN	▪ Res. 229 (rev. WRC-19)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455	Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455		
5725 - 5830 MHz			
FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455	▪ BFWA (5725-5850 MHz) ▪ SRD applications: ▪ Reservoir Level Probing Radar (RLPR) ▪ RTTT (Road Transport and Traffic Telematics) (5795-5815 MHz) ▪ Transport and information control systems (ITS) 5 805-5 815 MHz)	▪ Rec. ITU-R SM.1896-X ▪ Rec. ITU-R M.1453 ▪ Report ITU-R SM.2153-X
5830 - 5850 MHz			
FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 5.456	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur FIXED 5.453 5.150	▪ 5 725-5 875 MHz WLAN and allocated to ISM within the band 5725-5875 MHz ▪ BFWA (5725-5850 MHz) ▪ SRD applications: ▪ Reservoir Level Probing Radar (RLPR)	▪ Rec. ITU-R SM.1896-X ▪ Report ITU-R SM.2153-X
5850 - 5925 MHz			
FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	▪ 5 725-5 875 MHz WLAN and ISM Band	
		▪ 5 850-5 925 MHz C Band VSAT (Uplink)	
5925 - 6700 MHz			
FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.149 5.440 5.458	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A MOBILE 5.149 5.440 5.458	▪ Fixed links - Lower 6 GHz (5925-6425 MHz) and Upper 6 GHz (6425-7110 MHz) ▪ Fixed-satellite uplinks (PTP/VSAT/SNG) (5850-6425 MHz)	▪ Channelling plan for L6 GHz band in accordance with Rec. ITU-R F.383 ▪ ATU-R Recommendation 005-X applies in the range (5925 – 6425 MHz)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
		▪ UWB SRD application (6000 - 9000 MHz) ▪ Licence-exempt WAS/RLAN in the range 5925 – 6425 MHz.	▪ Channelling plan for U6 GHz band in accordance with Rec. ITU-R F.384 ▪ Earth Station onboard vessels (ESV) also allowed under FSS. ▪ Ultra-wideband applications (UWB): see Rec. ITU-R SM.1755, Rec. ITU-R SM.1756, Rec. ITU-R SM. 1757and Report ITU-R SM.2153-X ▪ In making assignments to stations in the frequency band 6650 – 6675.2 MHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
6700 - 7075 MHz			
FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B	▪ Fixed links - Upper 6 GHz (6425-7110 MHz)	▪ Rec. ITU-R F.384 applies ▪ The band 6 725-7 025 MHz is part of the APP30B Plan (FSS Earth-to-space); refer to Annex C.
7075 - 7145 MHz			
FIXED MOBILE 5.458 5.459	FIXED MOBILE 5.458	▪ Fixed links - Upper 6 GHz (6425-7110 MHz) and Lower 7 GHz (7110-7425 MHz)	▪ Rec. ITU-R F.384 applies ▪ Rec. ITU-R F.385 applies.
7145 - 7190 MHz			
FIXED MOBILE	FIXED MOBILE	▪ Fixed links - Lower 7 GHz (7110-7425 MHz)	▪ Rec. ITU-R F.385 applies.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459	SPACE RESEARCH (deep space) (Earth-to-space) 5.458 5.459		
7190 - 7235 MHz			
EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	▪ Fixed links - Lower 7 GHz (7110-7425 MHz)	▪ Rec. ITU-R F.385 applies
7235 - 7250 MHz			
EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A FIXED MOBILE 5.458	▪ Fixed links - Lower 7 GHz (7110-7425 MHz)	▪ Rec. ITU-R F.385 applies.
7250 - 7300 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	▪ Fixed links - Lower 7 GHz (7110-7425 MHz)	▪ Rec. ITU-R F.385 applies.
7300 - 7375 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	▪ Fixed links - Lower 7 GHz (7110-7425 MHz) and Upper 7 GHz (7425-7750 MHz)	▪ Rec. ITU-R F.385 applies
7375 - 7450 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	▪ Fixed links - Lower 7 GHz (7110-7425 MHz) and Upper 7 GHz (7425-7750 MHz)	▪ Rec. ITU-R F.385 applies
7450 - 7550 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth)	▪ Fixed links - Upper 7 GHz (7425-7750 MHz)	▪ Rec. ITU-R F.385 applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461A	MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB 5.461A		
7550 - 7750 MHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space-to-Earth) 5.461AA 5.461AB	▪ Fixed links - Upper 7 GHz (7425-7750 MHz)	▪ Rec. ITU-R F.385 applies
7750 - 7900 MHz			
FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	▪ Fixed links - Lower 8 GHz (7725-8275 MHz)	▪ Rec. ITU-R F.386 applies
7900 - 8025 MHz			
FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	▪ Fixed links - Lower 8 GHz (7725-8275 MHz)	▪ Rec. ITU-R F.386/ ITU-R. F.385 applies
8025 - 8175 MHz			
EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	▪ Fixed links - Lower 8 GHz (7725-8275 MHz) ▪ Earth exploration satellite systems	▪ Rec. ITU-R F.386 applies
8175 - 8215 MHz			
EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space)	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space)	▪ Fixed links - Lower 8 GHz (7725-8275 MHz) ▪ Earth exploration satellite systems	▪ Rec. ITU-R F.386 applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MOBILE 5.463 5.462A	MOBILE 5.463 5.462A		
8215 - 8400 MHz			
EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	▪ Fixed links - Lower 8 GHz (7725-8275 MHz) and Upper 8 GHz (8275-8500 MHz)	▪ Rec. ITU-R F.386 applies.
8400 - 8500 MHz			
FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465	▪ Fixed links - Upper 8 GHz (8275-8500 MHz)	▪ Rec. ITU-R F.386 applies.
8500 - 8550 MHz			
RADIOLOCATION 5.468 5.469	RADIOLOCATION 5.468 5.469	▪ RADARS e.g. precision airfield approach radars.	
8550 - 8650 MHz			
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	▪ RADARS e.g. precision airfield approach radars	
8650 - 8750 MHz			
RADIOLOCATION 5.468 5.469	RADIOLOCATION 5.468 5.469 8500 - 8750 MHz FIXED MOBILE 5.468	▪ RADARS e.g. precision airfield approach radars	
8750 - 8850 MHz			
RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	▪ RADARS e.g. precision airfield approach radars	
8850 - 9000 MHz			
RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	▪ RADARS e.g. precision airfield approach radars	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
9000 - 9200 MHz			
RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.471 5.473A	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.337 5.471	▪ RADARS e.g. precision airfield approach radars	
9200 - 9300 MHz			
EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474	▪ RADARS e.g. precision airfield approach radars	
9300 - 9500 MHz			
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION 5.475 SPACE RESEARCH (active) 5.427 5.474 5.475A 5.475B 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION 5.475 SPACE RESEARCH (active) 5.427 5.474 5.475A 5.475B 5.476A	▪ RADARS e.g. precision airfield approach radars	
9500 - 9800 MHz			
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	▪ RADARS e.g. precision airfield approach radars	
9800 - 9900 MHz			
RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.477 5.478 5.478A 5.478B	RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.478A 5.478B	▪ Radiolocation	
9900 - 10000 MHz			
EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.477 5.478 5.479	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.479	▪ RADARS e.g. precision airfield approach radars	
10 - 10.4 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.474D 5.479	▪ Fixed point to multipoint microwave links (ITU-R F.1568)	
10.4 - 10.45 GHz			
FIXED MOBILE RADIOLOCATION Amateur	FIXED MOBILE RADIOLOCATION Amateur	▪ Radiolocation ▪ Fixed/Land mobile communication ▪ BFWA – 10.5 GHz (10.15-10.30 GHz)	▪ Paired with 10.50-10.65 GHz ▪ Rec. ITU-R F.1568 applies.
10.45 - 10.5 GHz			
RADIOLOCATION Amateur Amateur-satellite 5.481	RADIOLOCATION Amateur Amateur-satellite FIXED MOBILE 5.481	▪ Radiolocation services ▪ Amateur Services	
10.5 - 10.55 GHz			
FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation	▪ BFWA – 10.5 GHz (10.50-10.65 GHz)	▪ Paired with 10.15-10.30 GHz ▪ Rec. ITU-R F.1568 applies
10.55 - 10.6 GHz			
FIXED MOBILE except aeronautical mobile Radiolocation	FIXED MOBILE except aeronautical mobile Radiolocation	▪ BFWA – 10.5 GHz (10.50-10.65 GHz)	▪ Paired with 10.15-10.30 GHz ▪ Rec. ITU-R F.1568 applies.
10.6 - 10.68 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482A	▪ BFWA – 10.5 GHz (10.50-10.65 GHz) ▪ Radio Astronomy (Non-thermal synchrotron and enigmatic quasars)	▪ Rec. ITU-R F.1568 applies. ▪ For sharing between EESS (passive) and the fixed and mobile service, Res.751 applies.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
10.68 - 10.7 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Earth exploration satellite services ▪ Radio astronomy Space research ▪ Non-thermal synchrotron and enigmatic quasars	
10.7 - 10.95 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	▪ FWS point to point microwave links (11GHz Band according to ITU-R Rec F. 387-10) ▪ DTH Applications under the FSS	▪ Rec. ITU-R F.387 applies
10.95 - 11.2 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.484 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.484 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	▪ FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10) ▪ DTH Applications under the FSS	▪ Rec. ITU-R F.387 applies
11.2 - 11.45 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	▪ FWS point to point radio relay links (11GHz Band according to ITU-R Rec F. 387-10) ▪ DTH Applications under the FSS	▪ Rec. ITU-R F.387 applies
11.45 - 11.7 GHz			
FIXED FIXED-SATELLITE	FIXED FIXED-SATELLITE	▪ FWS point to point radio relay links (11GHz Band	▪ Rec. ITU-R F.387 applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
(space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	(space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	according to ITU-R Rec F. 387-10) ▪ Fixed-satellite downlinks (PTP/VSAT/SNG) ▪ DTH Applications under the FSS	
11.7 - 12.5 GHz			
FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	▪ Fixed Links ▪ Broadcasting satellite systems	▪ This band is available for BSS in accordance with Appendix 30 of ITU RR. Refer to Annex C.
12.5 - 12.75 GHz			
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.494 5.495 5.496	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space)	▪ FSS uplinks (VSAT/SNG) (12.5-12.75 GHz) ▪ Ku band VSAT dowlink ▪ Aeronautical Earth Stations/ ESV/ESIM Applications ▪ NGSO FSS ▪ Fixed links	▪ Article 9.12 applies ▪ Res. 155 (WRC – 15) applies
12.75 - 13.25 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	▪ Fixed links - 13 GHz (12.75-13.25 GHz)	▪ Channelling plan for 13 GHz band in accordance with Rec. ITU-R F.497 ▪ The band 12.75-13.25 GHz is part of the APP30B Plan (FSS Earth-to-space); refer to Annex C. ▪ Article 9.12 applies ▪ Res. 172 (WRC-19) applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
13.25 - 13.4 GHz			
EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	▪ Airborne Navigation Aids	
13.4 - 13.65 GHz			
EARTH EXPLORATION-SATELLITE (active) FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal-satellite (Earth-to-space) 5.499E 5.500 5.501 5.501B	EARTH EXPLORATION-SATELLITE (active) FIXED-SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal-satellite (Earth-to-space) 5.499E 5.501B	▪ SRD: ▪ Radio determination Applications	▪ Report ITU-R SM.2153-X
13.65 - 13.75 GHz			
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.500 5.501 5.501B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.501B	▪ Earth exploration satellite Radiolocation ▪ Space research	
13.75 - 14 GHz			
FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.500 5.501 5.502 5.503	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.502 5.503	▪ FSS uplinks (PTP/VSAT/SNG) ▪ RADIOLOCATION	
14 - 14.25 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A Space research 5.504A	▪ FSS uplinks (PTP/VSAT/SNG) ▪ Aeronautical Earth Stations/ ESV/ESIM Applications ▪ NGSO FSS ▪ Fixed links	▪ Res. 902 applies. ▪ Rec. ITU-R M.1643 applies.
14.25 - 14.3 GHz			
FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505 5.508	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A	▪ FSS uplinks (PTP/VSAT/SNG) ▪ Aeronautical Earth Stations/ ESV/ESIM Applications ▪ Fixed links	▪ Res. 902 applies. ▪ Rec. ITU-R M.1643 applies.
14.3 - 14.4 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A Radionavigation-satellite 5.504A	▪ FSS uplinks (PTP/VSAT/SNG) ▪ Aeronautical Earth Stations/ ESV/ESIM Applications ▪ NGSO FSS ▪ Fixed links	▪ Res. 902 applies. ▪ Rec. ITU-R M.1643 applies.
14.4 - 14.47 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.484B 5.506 5.506B MOBILE except aeronautical mobile	▪ FSS uplinks (PTP/VSAT/SNG)	▪ Res. 902 applies. ▪ Rec. ITU-R M.1643 applies.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Space research (space-to-Earth) 5.504A	Mobile-satellite (Earth-to-space) 5.504B 5.506A Space research (space-to-Earth) 5.504A	▪ Aeronautical Earth Stations/ ESV/ESIM Applications ▪ Fixed links	
14.47 - 14.5 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radio astronomy 5.149 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A Radio astronomy 5.149 5.504A	▪ FSS uplinks (PTP/VSAT/SNG) ▪ Radio Astronomy (non-thermal synchrotron and enigmatic quasars) ▪ Aeronautical Earth Stations/ ESV/ESIM Applications ▪ Fixed Links	▪ Res. 902 applies. ▪ Rec. ITU-R M.1643 applies.
14.5 - 14.75 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) 5.509B 5.509C 5.509D 5.509E 5.509F 5.510 MOBILE Space research 5.509G	▪ Fixed links - 15 GHz (14.5-15.35 GHz)	▪ Channelling plan for 15 GHz band in accordance with Rec. ITU-R F.636 ▪ The band 14.5-14.8 GHz is part of the APP30A Plan (Feeder Links for BSS) for some countries. Refer to Annex C.
14.75 - 14.8 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	▪ Fixed links - 15 GHz (14.5-15.35 GHz)	▪ Channelling plan for 15 GHz band in accordance with Rec. ITU-R F.636 ▪ The band 14.5-14.8 GHz is part of the APP30A Plan (Feeder Links for BSS) for some countries. Refer to Annex C.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
14.8 - 15.35 GHz			
FIXED MOBILE Space research 5.339	FIXED MOBILE Space research 5.339	▪ Fixed links - 15 GHz (14.5-15.35 GHz)	▪ Channelling plan for 15 GHz band in accordance with Rec. ITU-R F.636
15.35 - 15.4 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy (for observation of non-thermal synchrotron sources and quasars)	
15.4 - 15.43 GHz			
RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	▪ Radio altimeters / Doppler Radars	▪ ICAO Guidelines on Radiocommunications (Annex 10)
15.43 - 15.63 GHz			
FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	▪ Doppler Radars	▪ ICAO Guidelines on Radiocommunications (Annex 10)
15.63 - 15.7 GHz			
RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION	▪ Doppler Radars	▪ ICAO Guidelines on Radiocommunications (Annex 10)
15.7 - 16.6 GHz			
RADIOLOCATION 5.512 5.513	RADIOLOCATION	▪ Doppler Radars	▪ ICAO Guidelines on Radiocommunications (Annex 10)
16.6 - 17.1 GHz			
RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513	RADIOLOCATION Space research (deep space) (Earth-to-space)	▪ Radiolocation ▪ Radars	
17.1 - 17.2 GHz			
RADIOLOCATION 5.512 5.513	RADIOLOCATION	▪ Radiolocation ▪ WAS/RLAN (17.1-17.3 GHz	
17.2 - 17.3 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.513A 15.7 - 17.3 GHz FIXED MOBILE 5.512	▪ Earth exploration satellite Radiolocation ▪ Space research ▪ WAS/RLAN (17.1-17.3 GHz	
17.3 - 17.7 GHz			
FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation	▪ 17.3-17.7 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B. ▪ Broadcasting Satellite Systems feeder	▪ The band 17.3-17.7 GHz is part of the APP30A Plan (Feeder Links for BSS) for many countries; refer to Annex C. ▪ Res.143 applies applies for HDFS.
		▪ 17.3-17.7 GHz Feeder link plans for Broadcasting Satellite Service (Appendix 30A)	▪
17.7 - 18.1 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.517A (Earth-to-space) 5.516 MOBILE	▪ FWS point to point radio links - 18 GHz (17.7-19.7 GHz) ▪ ESIM (under the FSS) ▪ Broadcasting satellite systems feeder links	▪ Channelling plan for 18 GHz band in accordance with Rec. ITU-R F.595 ▪ Res 169 (WRC-19) applies for ESIM.
18.1 - 18.4 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A (Earth-to-space) 5.520 MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A (Earth-to-space) 5.520 MOBILE	▪ FWS point to point radio links - 18 GHz (17.7-19.7 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan for 18 GHz band in accordance with Rec. ITU-R F.595

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.519 5.521	5.519		▪ Res 169 (WRC-19) applies for ESIM.
18.4 - 18.6 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.517A MOBILE	▪ FWS point to point radio links - 18 GHz (17.7-19.7 GHz) ▪ ESIM (under the FSS	▪ Channelling plan for 18 GHz band in accordance with Rec. ITU-R F.595 ▪ Res 169 (WRC-19) applies for ESIM.
18.6 - 18.8 GHz			
EARTH-EXPLORATION -SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	EARTH-EXPLORATIONSATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.517A 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A	▪ FWS point to point radio links - 18 GHz (17.7-19.7 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan for 18 GHz band in accordance with Rec. ITU-R F.595 ▪ Res 169 (WRC-19) applies for ESIM.
18.8 - 19.3 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.516.B 5.517A 5.523A MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) 5.516.B 5.517A 5.523A MOBILE	▪ FWS point to point radio links - 18 GHz (17.7-19.7 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan for 18 GHz band in accordance with Rec. ITU-R F.595 ▪ Res 169 (WRC-19) applies for ESIM.
19.3 - 19.7GHz			
FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E MOBILE	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.517A 5.523B 5.523C 5.523D 5.523E MOBILE	▪ FWS point to point radio links - 18 GHz (17.7-19.7 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan for 18 GHz band in accordance with Rec. ITU-R F.595 ▪ Res 169 (WRC-19) applies for ESIM.
19.7 - 20.1 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A Mobile-satellite (space-to-Earth)	▪ 19.7-20.1 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B ▪ ESIM (under the FSS)	▪ Res.143 applies for HDFS. ▪ Res 156 (WRC-15) applies for ESIM
20.1 - 20.2 GHz			
FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.516B 5.527A MOBILE-SATELLITE (space-to-Earth) 5.525 5.526 5.527 5.528	▪ 20.1-20.2 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B ▪ ESIM (under the FSS)	▪ Res.143 applies for HDFS ▪ Res 156 (WRC-15) applies for ESIM.
20.2 - 21.2 GHz			
FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) FIXED MOBILE	▪ Fixed Satellite Systems	
21.2 - 21.4 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	▪ FWS point to point radio links - 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637
21.4 - 22 GHz			
FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B	▪ FWS point to point radio links - 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz) ▪ Broadcasting satellite systems	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637
22 - 22.21GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED MOBILE except aeronautical mobile 5.149	FIXED MOBILE except aeronautical mobile 5.149	▪ FWS point to point radio links - 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637 ▪ In making assignments to stations in the frequency band 22.01-22.21 GHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
22.21 - 22.5 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	▪ FWS point to point radio links - 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637 ▪ In making assignments to stations in the frequency band 22.21-22.5 GHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
22.5 - 22.55 GHz			
FIXED MOBILE	FIXED MOBILE	▪ FWS point to point radio links - 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637
22.55 - 23.15 GHz			
FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	▪ FWS point to point radio links – 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637 ▪ In making assignments to stations in the frequency band 22.81 – 22.86 GHz and 23.07 – 23.12 GHz, administrations are urged to give consideration to Radio

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			Astronomy applications as per RR n° 5.149
23.15 - 23.55 GHz			
FIXED INTER-SATELLITE 5.338A MOBILE	FIXED INTER-SATELLITE 5.338A MOBILE	▪ Fixed links	
23.55 - 23.6 GHz			
FIXED MOBILE	FIXED MOBILE	▪ FWS point to point radio links - 23 GHz (21.2-23.6 GHz or 22.0-23.6 GHz)	▪ Channelling plan for 23 GHz band in accordance with Rec. ITU-R F.637
23.6 - 24 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy (Observation of ammonia and continuum observations	
24 - 24.05 GHz ▪			
AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE 5.150	▪ AMATEUR ▪ AMATEUR-SATELLITE ▪ ISM (24.0-24.25 GHz) ▪ SRD applications (24-24.25 GHz)	▪ ISM band (24.0-24.25 GHz) Centre frequency 24.125 GHz ▪ Rec. ITU-R SM.1896-X ▪ Report ITU-R SM.2153-X
24.05 - 24.25 GHz			
RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	SRD: ▪ Reservoir Level Probing Radar (RLPR)	▪ ISM band (24.0-24.25 GHz) Centre frequency 24.125 GHz ▪ Rec. ITU-R SM.1896-X ▪ Report ITU-R SM.2153-X
24.25 - 24.45 GHz			
FIXED MOBILE except aeronautical Mobile 5.338A 5.532AB	FIXED MOBILE except aeronautical Mobile 5.338A 5.532AB	▪ FWS point to point radio links (24.25 – 26.5 GHz) ▪ IMT (24.25-27.5 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			recommendation, this band is known as 26 GHz). ▪ Temporary fixed links for ENG/OB ▪ Res. 242 (WRC-19) applies
24.45 - 24.65 GHz ▪			
FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	▪ FWS point to point radio links - 26 GHz (24.25-26.5 GHz) ▪ BFWA (24.5-26.5 GHz) ▪ IMT (24.25-27.5 GHz))	▪ Channelling in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 26 GHz) ▪ Res. 242 (WRC-19) applies
24.65 - 24.75 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B INTER-SATELLITE MOBILE except aeronautical mobile 5.338A 5.532AB	▪ Fixed links - 26 GHz (24.25-26.5 GHz) ▪ BFWA (24.5-26.5 GHz) ▪ IMT (24.25-27.5 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 26 GHz). ▪ Res. 242 (WRC-19) applies
24.75 - 25.25 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile 5.338A 5.532AB	FIXED FIXED-SATELLITE (Earth-to-space) 5.532B MOBILE except aeronautical mobile 5.338A 5.532AB	▪ Fixed links - 26 GHz (24.5-26.5 GHz) ▪ BFWA (24.5-26.5 GHz) ▪ IMT (24.25-27.5 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 26 GHz). ▪ Res. 242 (WRC-19) applies
25.25 - 25.5 GHz			
FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB Standard frequency and time signal-satellite (Earth-to-space)	FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB Standard frequency and time signal-satellite (Earth-to-space)	▪ Fixed links - 26 GHz (24.5-26.5 GHz) ▪ BFWA (24.5-26.5 GHz) ▪ IMT (24.25-27.5 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.748. (Note: In this recommendation, this band is known as 26 GHz). ▪ Res. 242 (WRC-19) applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
25.5 - 27 GHz ▪			
EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to-Earth) 5.536C Standard frequency and time signal-satellite (Earth-to-space) 5.536A	EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED 5.534A INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB SPACE RESEARCH (space-to-Earth) 5.536C Standard frequency and time signal-satellite (Earth-to-space) 5.536A	▪ Fixed links - 26 GHz (24.5-26.5 GHz) ▪ BFWA (24.5-26.5 GHz) ▪ IMT (24.25-27.5 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 26 GHz). ▪ Res. 242 (WRC-19) applies
27 - 27.5 GHz			
FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	FIXED INTER-SATELLITE 5.536 MOBILE 5.338A 5.532AB	▪ IMT (24.25-27.5 GHz)	▪ Res. 242 (WRC-19) applies
27.5 - 28.5 GHz			
FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.539 MOBILE 5.538 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.539 MOBILE 5.538 5.540	▪ Fixed links – 28 GHz (27.5-29.5 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 28 GHz) ▪ Res.143 applies for HDFS. ▪ The band 27.5-30 GHz may be used by the FSS for BSS feeder links ▪ Res 169 (WRC-19) applies for ESIM.
28.5 - 29.1 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.517A 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	▪ Fixed links – 28 GHz (27.5-29.5 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 28 GHz) ▪ Res.143 applies for HDFS.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ The band 27.5-30 GHz may be used by the FSS for BSS feeder links ▪ Res 169 (WRC-19) applies for ESIM.
29.1 - 29.5 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.335A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.517A 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	▪ Fixed links – 28 GHz (27.5-29.5 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 28 GHz) ▪ Res.143 applies for HDFS. ▪ The band 27.5-30 GHz may be used by the FSS for BSS feeder links ▪ Res 169 (WRC-19) applies for ESIM.
		▪ Fixed links – 28 GHz (27.5-29.5 GHz) ▪ ESIM (under the FSS)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this recommendation, this band is known as 28 GHz) ▪ Res.143 applies for HDFS. ▪ The band 27.5-30 GHz may be used by the FSS for BSS feeder links ▪ Res 169 (WRC-19) applies for ESIM.
29.5 - 29.9 GHz			
FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539	▪ Fixed links – 28 GHz (27.5-29.5 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.748 (Note: In this

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540	▪ ESIM (under the FSS)	recommendation, this band is known as 28 GHz) ▪ Res.143 applies for HDFS. ▪ The band 27.5-30 GHz may be used by the FSS for BSS feeder links ▪ Res 169 (WRC-19) applies for ESIM.
29.9 - 30 GHz			
FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542	FIXED-SATELLITE (Earth-to-space) 5.484A 5.484B 5.516B 5.527A 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540	▪ ESIM (under the FSS)	▪ Res.143 applies for HDFS. ▪ Res 156 (WRC-15) applies for ESIM.
30 - 31GHz			
FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) 5.542	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth)	▪ Fixed satellite uplink Mobile satellite uplink	
31 - 31.3 GHz			
FIXED 5.338A 5.543B MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	FIXED 5.338A 5.543B MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	▪ Fixed links ▪ Fixed satellite systems	▪ Channelling plan in accordance with Rec. ITU-R F.746 (Note: In this recommendation, this band is known as 31 GHz). ▪ Res 167 (WRC-19) applies for HAPS
31.3 - 31.5 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	▪ Radio Astronomy (Continuum Observations)	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.340	5.340		
31.5 - 31.8 GHz ▪			
EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.546	EARTH EXPLORATION SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149	▪ Radio Astronomy (Continuum Observations)	
31.8 - 32 GHz			
FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	▪ Fixed links (PTP/PTMP) (31.8-33.4 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.1520 (Note: In this recommendation, this band is known as 32 GHz). ▪ Res.75 applies for HDFS.
32 - 32.3 GHz			
FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548	▪ Fixed links (PTP/PTMP) (31.8-33.4 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.1520 (Note: In this recommendation, this band is known as 32 GHz). ▪ Res.75 applies for HDFS.
32.3 - 33 GHz			
FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.548	▪ Fixed links (PTP/PTMP) (31.8-33.4 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.1520 (Note: In this recommendation, this band is known as 32 GHz). ▪ Res.75 applies for HDFS.
33 - 33.4 GHz			
FIXED 5.547A RADIONAVIGATION 5.547	FIXED 5.547A RADIONAVIGATION 5.547	▪ Fixed links (PTP/PTMP) (31.8-33.4 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.1520 (Note: In this recommendation, this band is known as 32 GHz).

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ Res.75 applies for HDFS.
33.4 - 34.2 GHz			
RADIOLOCATION 5.549	RADIOLOCATION	▪ Radiolocation services	
34.2 - 34.7 GHz			
RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space)	▪ Radiolocation services ▪ Space research feeder link	
34.7 - 35.2 GHz			
RADIOLOCATION Space research 5.550 5.549	RADIOLOCATION Space research	▪ Radiolocation services	
35.2 - 35.5 GHz			
METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION	▪ Meteorological aids Radiolocation	
35.5 - 36 GHz			
METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549A	▪ Meteorological aids ▪ Earth exploration satellite Radiolocation ▪ Space research	
36 - 37 GHz			
EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	▪ Earth exploration satellite Fixed ▪ Mobile ▪ Space research	▪ In making assignments to stations in the frequency band 36.43-36.5 GHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
37 - 37.5 GHz			
FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) 5.547	FIXED MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) 5.547	▪ FWS point to point radio links - 38 GHz (37.0-39.5 GHz) ▪ IMT (37-43.5 GHz)	▪ Res.75 applies for HDFS. ▪ Res 243 (WRC-19) applies for IMT ▪ Channelling plan in accordance with Rec. ITU-R

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			F.749 (Note: In this recommendation, this band is known as 38 GHz)
37.5 - 38 GHz			
FIXED FIXED-SATELLITE (space-to-Earth)5.550C MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	FIXED FIXED-SATELLITE (space-to-Earth)5.550C MOBILE except aeronautical mobile 5.550B SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	▪ FWS point to point radio links - 38 GHz (37.0-39.5 GHz) ▪ IMT (37-43.5 GHz)	▪ Res.75 applies for HDFS. ▪ Res 243 (WRC-19) applies for IMT ▪ Channelling plan in accordance with Rec. ITU-R F.749 (Note: In this recommendation, this band is known as 38 GHz) ▪ Res 167 (WRC-19) applies for HAPS
38 - 39.5 GHz			
FIXED 5.550D FIXED-SATELLITE (space-to-Earth) 5.550C MOBILE 5.550B Earth exploration-satellite (space-to-Earth) 5.547	FIXED 5.550D FIXED-SATELLITE (space-to-Earth)5.550C MOBILE 5.550B Earth exploration-satellite (space-to-Earth) 5.547	▪ Fixed links - 38 GHz (37.0-39.5 GHz) ▪ IMT (37-43.5 GHz)	▪ Res 243 (WRC-19) applies for IMT ▪ Channelling plan in accordance with Rec. ITU-R F.749 (Note: In this recommendation, this band is known as 38 GHz) ▪ Res.75 applies for HDFS. ▪ Res 168 (WRC-19) applies for HAPS
39.5 - 40 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth)	▪ IMT (37-43.5 GHz) ▪ Fixed Links	▪ Res.75 applies for HDFS. ▪ Res.143 applies for HDFS. ▪ Res 243 (WRC-19) applies for IMT

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
Earth exploration-satellite (space-to-Earth) 5.547 5.550E	Earth exploration-satellite (space-to-Earth) 5.547 5.550E		
40 - 40.5 GHz			
EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C MOBILE 5.550B MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) 5.550E	▪ IMT (37-43.5 GHz)	▪ Res.143 applies for HDFS. ▪ Res 243 (WRC-19) applies for IMT
40.5 - 41 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile (space-to-Earth) 5.547	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile (space-to-Earth) 5.547	▪ Fixed links (40.5 – 43.5 GHz) ▪ IMT (37-43.5 GHz)	▪ BFWA or MWS (40.5-43.5 GHz) ▪ Res.75 applies for HDFS. ▪ Channelling plan in accordance with Rec. ITU-R F.2005 (Note: In this recommendation, this band is known as 42 GHz) ▪ Res 243 (WRC-19) applies for IMT
41 - 42.5 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.550C LAND MOBILE 5.550B BROADCASTING BROADCASTING-SATELLITE Aeronautical mobile Maritime mobile 5.547 5.551F 5.551H 5.551I	▪ Fixed links (40.5 – 43.5 GHz) ▪ IMT (37-43.5 GHz)	▪ BFWA or MWS (40.5-43.5 GHz) ▪ Res.75 applies for HDFS. ▪ Channelling plan in accordance with Rec. ITU-R F.2005 (Note: In this recommendation, this band is known as 42 GHz)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
			▪ Res 243 (WRC-19) applies for IMT
42.5 - 43.5 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile 5.550B RADIO ASTRONOMY 5.149 5.547	▪ Fixed links (40.5 – 43.5 GHz) ▪ IMT (37-43.5 GHz) ▪ Radio Astronomy (Observation of silicon monoxide)	▪ BFWA or MWS (40.5-43.5 GHz) ▪ Res.75 applies for HDFS. ▪ Res 243 (WRC-19) applies for IMT ▪ Channelling plan in accordance with Rec. ITU-R F.2005 (Note: In this recommendation, this band is known as 42 GHz)
43.5 - 47 GHz			
MOBILE 5.553 5.553A MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 5.553A MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	▪ IMT (45.5-47 GHz)	▪ Res 244 (WRC-19) applies
47 - 47.2 GHz			
AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	▪ Amateur communications ▪ Amateur satellite	
47.2 - 47.5 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	▪ IMT (47.2-48.2 GHz)	▪ Res 243 (WRC-19) applies ▪ Res 122 (rev. WRC-19) applies for HAPS
47.5 - 47.9 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A	▪ IMT (47.2-48.2 GHz)	▪ Res.143 applies for HDFSS. ▪ Res 243 (WRC-19) applies

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
MOBILE 5.553B	MOBILE 5.553B		
47.9 - 48.2 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553 B 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C.552 MOBILE 5.553B 5.552A	▪ IMT (47.2-48.2 GHz)	▪ Res 243 (WRC-19) applies ▪ Res 122 (rev. WRC-19) applies for HAPS
48.2 - 48.54 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	▪ 48.2-48.54 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	▪ Res.143 applies for HDFS.
48.54 - 49.44 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.149 5.340 5.555	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.149 5.340 5.555	▪ Fixed ▪ Fixed satellite uplink Mobile	▪ In making assignments to stations in the frequency band 48.94-49.04 GHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
49.44 - 50.2 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	▪ 49.44-50.2 GHz designated for HDFSS uncoordinated Earth station downlinks according to Res.143 (Rev. WRC-07) and 5.516B	▪ Res.143 applies for HDFS.
50.2 - 50.4 GHz			
EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	▪ Earth exploration satellite Space research	
50.4 - 51.4 GHz			
	FIXED	▪ Fixed Links	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	▪ Fixed satellite Mobile	
51.4 - 52.4 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) 5.555C MOBILE 5.338A 5.547 5.556	FIXED FIXED-SATELLITE (Earth-to-space) 5.555C MOBILE 5.338A 5.547 5.556	▪ 51.4-52.4 GHz (52 GHz Band) designated for FWS (e.g. short-range digital point-to-point radio links in HDFS according to ITU-R Rec F.1496-1)	▪ Res.75 applies for HDFS.
52.4 - 52.6GHz			
FIXED MOBILE 5.547 5.556	FIXED MOBILE 5.547 5.556	▪ Fixed services ▪ Mobile services	
52.6 - 54.25 GHz			
EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	▪ Passive sensing (53.6 – 59.3 GHz)	
54.25 - 55.78 GHz			
EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	▪ Passive sensing (53.6 – 59.3 GHz)	
55.78 - 56.9 GHz ▪			
EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	▪ Passive sensing (53.6 – 59.3 GHz)	▪ Res.75 applies for HDFS.
56.9 - 57 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED	EARTH EXPLORATION-SATELLITE (passive) FIXED	▪ Passive sensing (53.6 – 59.3 GHz)	▪ Res.75 applies for HDFS.

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547		
57 - 58.2 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	▪ Passive sensing (53.6 – 59.3 GHz) ▪ Fixed Links ▪ Licence-exempt WAS/RLAN in the range 57 - 66 MHz e.g. Multiple GIGABIT wireless systems WAS/RLAN (57-66 GHz) ▪ SRD Applications (57 – 64 GHz)	▪ Res.75 applies for HDFS. ▪ Report ITU-R M.2227-X and Rec. ITU-R M.2003-X, EN 302 567 and ▪ EN305 550 ▪ ATU-R Recommendation 005-X applies in the range (57 – 66 GHz)
58.2 - 59 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	▪ Licence-exempt WAS/RLAN in the range 57 - 66 MHz e.g. Multiple GIGABIT wireless systems WAS/RLAN ▪ Passive sensing (53.6 – 59.3 GHz)	▪ Res.75 applies for HDFS. ▪ EN 302567 applies for WiGig ▪ ATU-R Recommendation 005-0 applies in the range (57 – 66 GHz)
59 - 59.3 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	▪ Licence-exempt WAS/RLAN in the range 57 - 66 MHz e.g. Multiple GIGABIT wireless systems WAS/RLAN ▪ Passive sensing (53.6 – 59.3 GHz)	▪ EN 302567 applies for WiGig ▪ ATU-R Recommendation 005-0 applies in the range (57 – 66 GHz)

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
59.3 - 64 GHz			
FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	▪ SRD applications (61-61.5 GHz): Reservoir Level Probing Radar (RLPR) ▪ Licence-exempt WAS/RLAN in the range 57 - 66 MHz e.g. Multiple GIGABIT wireless systems WAS/RLAN	▪ ISM band (61-61.5 GHz) Center frequency 61.25 GHz ▪ Rec. ITU-R SM.1896-X, Report ITU-R SM.2153-X ▪ EN 302567 applies for WiGig ▪ ATU-R Recommendation 005-0 applies in the range (57 – 66 GHz)
64 - 65 GHz			
FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	▪ Licence-exempt WAS/RLAN in the range 57 - 66 MHz e.g. Multiple GIGABIT wireless systems WAS/RLAN	▪ Res.75 applies for HDFS. ▪ EN 302567 applies for WiGig ▪ ATU-R Recommendation 005-0 applies in the range (57 – 66 GHz)
65 - 66 GHz			
EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	▪ Licence-exempt WAS/RLAN in the range 57 - 66 MHz e.g. Multiple GIGABIT wireless systems WAS/RLAN	▪ Res.75 applies for HDFS. ▪ EN 302567 applies for WiGig ▪ ATU-R Recommendation 005-0 applies in the range (57 – 66 GHz)
66 - 71 GHz			
INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	INTER-SATELLITE MOBILE 5.553 5.558 5.559AA MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	▪ IMT (66-71 GHz)	▪ Res 241 (WRC-19) applies ▪ The use of the band 66-71 GHz by WAS (e.g. WiGig) is subject to coexistance study under Res 241

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
71 - 74 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	▪ Fixed links (71-76 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.2006 (Note: In this recommendation, this band is known as 70/80 GHz)
74 - 76 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	▪ Fixed links (71-76 GHz) ▪ E-Band point to point links	▪ Channelling plan in accordance with Rec. ITU-R F.2006 (Note: In this recommendation, this band is known as 70/80 GHz)
76 - 77.5 GHz			
RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	▪ Radio Astronomy (Observations of continuum lines and celestial objects) SRD: ▪ Road Transport and Traffic Telematics Radar (76 – 77 GHz) ▪ Reservoir Level Probing Radar (RLPR)	▪ ISM Band (76 – 77 GHz Rec. ITU-R M.1452, Report ITU-R .SM. 2153-X
77.5 - 78 GHz			
AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	▪ Radio Astronomy (Observations of continuum lines and celestial objects)	
78 - 79 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	▪ Radio Astronomy (Observations of continuum lines and celestial objects)	
79 - 81 GHz			
RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	▪ Radio Astronomy (Observations of continuum lines and celestial objects)	
81 - 84 GHz			
FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) 5.149 5.561A	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) 5.149 5.561A	▪ Radio Astronomy (Observations of continuum lines and celestial objects) ▪ Fixed links (81-86 GHz) ▪ E-Band point to point links	▪ Channelling plan in accordance with Rec. ITU-R F.2006 (Note: In this recommendation, this band is known as 70/80 GHz).
84 - 86 GHz			
FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149	▪ Radio Astronomy (Observations of continuum lines and celestial objects) ▪ Fixed links (81-86 GHz)	▪ Channelling plan in accordance with Rec. ITU-R F.2006 (Note: In this recommendation, this band is known as 70/80 GHz)
86 - 92 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy (Observations of continuum lines and celestial objects)	
92 - 94 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Spectral line observation of diazenylium)	
94 - 94.1 GHz			
EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Spectral line observation of diazenylium) ▪ Short Range Radar Systems ▪ Cloud Profile Radar	
94.1 - 95 GHz			
FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Spectral line observation of diazenylium) ▪ Short Range Radar Systems	
95 - 100 GHz			
FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Observation of carbon monosulphide, sulphur monoxide and methyl acetylene)	
100 - 102 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Observation of carbon monosulphide, sulphur monoxide and methyl acetylene)	
102 - 105 GHz			
FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Observation of carbon monosulphide, sulphur monoxide and methyl acetylene)	
105 - 109.5 GHz			
FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Spectral line observation and observations of carbon monoxide)	
109.5 - 111.8 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Spectral line observation and observations of carbon monoxide)	
111.8 - 114.25 GHz			
FIXED MOBILE RADIO ASTRONOMY	FIXED MOBILE RADIO ASTRONOMY	▪ Radio Astronomy (Observations of continuum lines and	

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
SPACE RESEARCH (passive) 5.562B 5.149 5.341	SPACE RESEARCH (passive) 5.562B 5.149 5.341	celestial objects and Spectral line observation and observations of carbon monoxide)	
114.25 - 116 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	▪ Radio Astronomy (Observations of continuum lines and celestial objects and Spectral line observation and observations of carbon monoxide)	
116 - 119.98 GHz			
EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341		
119.98 - 122.25 GHz			
EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	▪ SRD Applications	
122.25 - 123 GHz			
FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	▪ SRD Applications	
123 - 130 GHz			
FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.149 5.554	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.149 5.554	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	
130 - 134 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	▪
134 - 136 GHz			
AMATEUR AMATEUR-SATELLITE Radio astronomy	AMATEUR AMATEUR-SATELLITE Radio astronomy	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	▪
136 - 141 GHz			
RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	▪
141 - 148.5 GHz			
FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	▪
148.5 - 151.5 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide, and carbon monoxide)	▪
151.5 - 155.5 GHz			
FIXED MOBILE	FIXED MOBILE	▪ Radio Astronomy (Observation of	▪

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
RADIO ASTRONOMY RADIOLOCATION 5.149	RADIO ASTRONOMY RADIOLOCATION 5.149	Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	
155.5 - 158.5 GHz			
FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY 5.149	▪ Radio Astronomy (Observation of Formaldehyde, Deuterated Hydrogen cyanide and carbon monoxide)	▪
158.5 - 164 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)		▪
164 - 167 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy (Continuum Observations)	▪
167 - 174.5 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149		▪ In making assignments to stations in the frequency band 168-174.5 GHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
174.5 - 174.8 GHz			
FIXED INTER-SATELLITE MOBILE 5.558	FIXED INTER-SATELLITE MOBILE 5.558		▪
174.8 - 182 GHz			
EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)		▪
182 - 185 GHz			

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ Radio Astronomy (Observation of H_20)	▪
185 - 190 GHz			
EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)		▪
190 - 191.8 GHz			
EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340		▪
191.8 - 200 GHz			
FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554		▪ In making assignments to stations in the frequency band 191.8 – 231.5 GHz, administrations are urged to give consideration to Radio Astronomy applications as per RR n° 5.149
200 - 209 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	▪ Radio Astronomy (Observation of carbon monoxide)	▪
209 - 217 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	▪ Radio Astronomy (Observation of carbon monoxide)	▪
217 - 226 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive)	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive)	▪ Radio Astronomy (Observation of carbon monoxide)	▪

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
5.562B 5.149 5.341	5.562B 5.149 5.341		
226 - 231.5 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	▪ ▪ Radio Astronomy (Observation of carbon monoxide)	▪
231.5 - 232 GHz			
FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation		▪
232 - 235 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation		▪
235 - 238 GHz			
EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B		▪
238 - 240 GHz			
FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE		▪
240 - 241 GHz			
FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION		▪
241 - 248 GHz			
RADIO ASTRONOMY RADIOLOCATION	RADIO ASTRONOMY RADIOLOCATION	▪ Radio Astronomy (Observation of spectral	▪ ISM Band (244 – 246 GHz) centre frequency 245 GHz

ITU RR REGION 1 ALLOCATIONS	EAC ALLOCATION(S) AND FOOTNOTES	Typical Usage in EAC	ADDITIONAL INFORMATION
Amateur Amateur-satellite 5.138 5.149	Amateur Amateur-satellite 5.138 5.149	lines of C_2H, HCN Hydrogen cyanide, HCO+ and formallyl) ▪ SRD Applications	▪ Rec. ITU-R SM.1896-X ▪ Report ITU-R SM.2153-X
248 - 250 GHz			
AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	▪ Radio astronomy (Observation of spectral lines of C_2H, HCN Hydrogen cyanide, HCO+ and formallyl)	▪
250 - 252 GHz			
EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	▪ Radio Astronomy (Observation of spectral lines of C_2H, HCN Hydrogen cyanide, HCO+ and formallyl)	▪
252 - 265 GHz			
FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	▪ Radio Astronomy (Observation of spectral lines of C_2H, HCN Hydrogen cyanide, HCO+ and formallyl)	▪
265 - 275 GHz			
FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	▪ Radio Astronomy (Observation of spectral lines of C_2H, HCN Hydrogen cyanide, HCO+ and formallyl)	▪ Radio Astronomy (Observation of spectral lines of C_2H, HCN Hydrogen cyanide, HCO+ and formallyl)
275 - 3000 GHz			
(Not allocated) 5.564A 5.565	(Not allocated) 5.564A 5.565		

5. BAND PLANS AND FREQUENCY MIGRATION/RE-FARMING

The high-level scope of EAC RFSAP does not include detailed information regarding the various spectrum bands. Detailed information found in band plans such as channelling plans (frequency pairing and guard bands), maximum power levels, migration/re-farming plans, etc, are contained in separate documents as band plans, as appropriate. Where available, these could be annexed or referenced in EAC RFSAP, as appropriate. A good example is the bands plans related to the Digital Dividend bands as found in the AU Guidelines on the Harmonized Use of the Digital Dividend bands in Africa.

6. FUTURE EDITIONS

This plan will be amended from-time-to-time, and new editions produced as a result, on account of major developments in the spectrum sector that have a material impact on the substance of the plan such as the outcomes of the WRCs and other institutions such as the Radio Regulations Board (RRB) of the ITU, as well as, appropriate developments within the sub-regions/countries, among others. As a general rule, EAC RFSAP will therefore be amended preferably not later than twelve (12) months after the official publication of the RR following a WRC, and such other publications which impacts on the substance of the text of EAC RFSAP. Biennial (every 2 years) revision is desired.

7. REVISION

An update of the EAC RFSAP and its attachments will be carried out at least after every WRC based on revision of application and standards, following national consultation by Member States. The responsibility of the revision of the EA RFSAP document will be initiated by the EACO Secretariat.

8. RECOMMENDATIONS

1. EAC Member States are encouraged and invited, where practically possible, and as necessary and appropriate, to harmonize their National frequency allocation plans with this plan taking into account their national/sub-regional needs.
2. All East African countries are invited to review the RR footnotes in which they are named to ascertain the continued need of their countries' names in those footnotes as part of the preparation towards relevant WRC agenda item.

10 ANNEXES

The following additional information is contained as annexes to EAC RFSAP:

- Annex A: List of ITU Radio Regulation footnotes
- Annex B: Radio Regulations footnotes with reference to EAC African countries
- Annex C: Satellite Planned Bands orbital slots relevant to EAC countries
- Annex D: Satellite Planned Bands relevant to EAC countries
- Annex E: Spectrum Bands Identified for IMT

Annex A: List of ITU Radio Regulations footnotes referenced/relevant for/in Columns 1 and 2

5.53 Administrations authorising the use of frequencies below 8.3 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 8.3 kHz are allocated.

5.54 Administrations conducting scientific research using frequencies below 8.3 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.

5.54A Use of the 8.3-11.3 kHz frequency band by stations in the meteorological aids service is limited to passive use only. In the band 9-11.3 kHz, meteorological aids stations shall not claim protection from stations of the radionavigation service submitted for notification to the Bureau prior to 1 January 2013. For sharing between stations of the meteorological aids service and stations in the radionavigation service submitted for notification after this date, the most recent version of Recommendation ITU-R RS.1881 should be applied.

5.54B Additional allocation: in Algeria, Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, the Russian Federation, Iran (Islamic Republic of), Iraq, Kuwait, Lebanon, Morocco, Qatar, the Syrian Arab Republic, Sudan and Tunisia, the frequency band 8.3-9 kHz is also allocated to the radionavigation, fixed and mobile services on a primary basis. (WRC-15)

5.54C Additional allocation: in China, the frequency band 8.3-9 kHz is also allocated to the maritime radionavigation and maritime mobile services on a primary basis.

5.55 Additional allocation: in Armenia, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the frequency band 14-17 kHz is also allocated to the radionavigation service on a primary basis. (WRC-15)

5.56 The stations of services to which the bands 14-19.95 kHz and 20.05-70 kHz and in Region 1 also the bands 72-84 kHz and 86-90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, Bulgaria, the Russian Federation, Georgia, Kazakhstan, Kyrgyzstan, , Tajikistan and Turkmenistan, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-12)

5.57 The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.

5.58 Additional allocation: in Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan, the band 67-70 kHz is also allocated to the radionavigation service on a primary basis. (WRC-2000)

5.60 In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.

5.62 Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.

5.64 Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.

5.66 Different category of service: in Germany, the allocations of the band 115-117.6 kHz to the fixed and maritime mobile services is on a primary basis (see No. 5.33) and to the radionavigation service on a secondary basis (see No. 5.32).

5.67 Additional allocation: in Kyrgyzstan and Turkmenistan, the frequency band 130-148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate. (WRC-19)

5.67A Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. 5.67. (WRC-07)

5.67B The use of the frequency band 135.7-137.8 kHz in Algeria, Egypt, Iraq, Lebanon, Syrian Arab Republic, Sudan, South Sudan and Tunisia is limited to the fixed and maritime mobile services. The amateur service shall not be used in the above-mentioned countries in the frequency band 135.7-137.8 kHz, and this should be taken into account by the countries authorizing such use. (WRC-19)

5.68 Alternative allocation: in Congo (Rep. of the), the Dem. Rep. of the Congo and South Africa, the frequency band 160-200 kHz is allocated to the fixed service on a primary basis. (WRC-15)

5.69 Additional allocation: in Somalia, the band 200-255 kHz is also allocated to the aeronautical radionavigation service on a primary basis.

5.70 Alternative allocation: in Angola, Botswana, Burundi, the Central African Rep., Congo (Rep. of the), Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, the Dem. Rep. of the Congo, South Africa, Tanzania, Chad, Zambia and Zimbabwe, the frequency band 200-283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis. (WRC-19)

5.73 The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service. (WRC-97)

5.74 Additional Allocation: in Region 1, the frequency band 285.3-285.7 kHz is also allocated to the maritime radionavigation service (other than radiobeacons) on a primary basis.

5.75 Different category of service: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Moldova, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Romania, the allocation of the band 315-325 kHz to the maritime radionavigation service is on a primary basis under the condition that in the Baltic Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned. (WRC-07)

5.76 The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.

5.77 Different category of service: in Australia, China, the French overseas communities of Region 3, Korea (Rep. of), India, Iran (Islamic Republic of), Japan, Pakistan, Papua New Guinea, the Dem. People's Rep. of Korea and Sri Lanka, the allocation of the frequency band 415-495 kHz to the aeronautical radionavigation service is on a primary basis. In Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Latvia, Uzbekistan and Kyrgyzstan, the allocation of the frequency band 435-495 kHz to the aeronautical radionavigation service is on a primary basis. Administrations in all the aforementioned countries shall take all practical steps necessary to ensure that aeronautical radionavigation stations in the frequency band 435-495 kHz do not cause interference to reception by coast stations of transmissions from ship stations on frequencies designated for ship stations on a worldwide basis. (WRC-19)

5.79 In the maritime mobile service, the frequency bands 415-495 kHz and 505-526.5 kHz are limited to radiotelegraphy and may also be used for the NAVDAT system in accordance with the most recent version of Recommendation ITU-R M.2010, subject to agreement between interested and affected administrations. NAVDAT transmitting stations are limited to coast stations. (WRC-19)

5.79A When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4 209.5 kHz, administrations are strongly recommended to coordinate the operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution 339 (Rev.WRC-07)). (WRC-07)

5.80 In Region 2, the use of the band 435-495 kHz by the aeronautical radionavigation service is limited to non-directional beacons not employing voice transmission.

5.80A The maximum equivalent isotropically radiated power (e.i.r.p.) of stations in the amateur service using frequencies in the band 472-479 kHz shall not exceed 1 W. Administrations may increase this limit of e.i.r.p. to 5 W in portions of their territory which are at a distance of over 800 km from the borders of Algeria, Saudi Arabia, Azerbaijan, Bahrain, Belarus, China, Comoros, Djibouti, Egypt, United Arab Emirates, the Russian Federation, Iran (Islamic Republic of), Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Libya, Morocco, Mauritania, Oman, Uzbekistan, Qatar, Syrian Arab Republic, Kyrgyzstan, Somalia, Sudan, Tunisia, Ukraine and Yemen. In this frequency band, stations in the amateur service shall not cause harmful interference to, or claim protection from, stations of the aeronautical radionavigation service.

5.80B The use of the frequency band 472-479 kHz in Algeria, Saudi Arabia, Azerbaijan, Bahrain, Belarus, China, Comoros, Djibouti, Egypt, United Arab Emirates, the Russian Federation, Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Libya, Mauritania, Oman, Uzbekistan, Qatar, Syrian Arab Republic, Kyrgyzstan, Somalia, Sudan, Tunisia and Yemen is limited to the maritime mobile and aeronautical radionavigation services. The amateur service shall not be used in the abovementioned countries in this frequency band, and this should be taken into account by the countries authorizing such use.

5.82 In the maritime mobile service, the frequency 490 kHz is to be used exclusively for the transmission by coast stations of navigational and meteorological

warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles 31 and 52. In using the frequency band 415-495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz. In using the frequency band 472-479 kHz for the amateur service, administrations shall ensure that no harmful interference is caused to the frequency 490 kHz. (WRC-12)

5.82C The frequency band 495-505 kHz is used for the international NAVDAT system as described in the most recent version of Recommendation ITU-R M.2010. NAVDAT transmitting stations are limited to coast stations. (WRC-19)

5.84 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles 31 and 52. (WRC-07)

5.87 Additional allocation: in Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia and Niger, the frequency band 526.5-535 kHz is also allocated to the mobile service on a secondary basis. (WRC 19)

5.87A Additional allocation: in Uzbekistan, the band 526.5-1 606.5 kHz is also allocated to the radionavigation service on a primary basis. Such use is subject to agreement obtained under No. 9.21 with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-97)

5.90 In the band 1 605-1 705 kHz, in cases where a broadcasting station of Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.

5.92 Some countries of Region 1 use radiodetermination systems in the bands 1 606.5-1 625 kHz, 1 635-1 800 kHz, 1 850-2 160 kHz, 2 194-2 300 kHz, 2 502-2 850 kHz and 3 500-3 800 kHz, subject to agreement obtained under No. 9.21. The radiated mean power of these stations shall not exceed 50 W.

5.93 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Tajikistan, Chad, Turkmenistan and Ukraine, the frequency bands 1 625-1 635 kHz, 1 800-1 810 kHz and 2 160-2 170 kHz are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. 9.21. (WRC-15)

5.96 In Germany, Armenia, Austria, Azerbaijan, Belarus, Croatia, Denmark, Estonia, the Russian Federation, Finland, Georgia, Hungary, Ireland, Iceland, Israel, Kazakhstan, Latvia, Liechtenstein, Lithuania, Malta, Moldova, Norway, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., the United Kingdom, Sweden, Switzerland, Tajikistan, Turkmenistan and Ukraine, administrations may allocate up to 200 kHz to their amateur service in the frequency bands 1 715-1 800 kHz and 1 850-2 000 kHz. However, when allocating the frequency bands within this range to their amateur service, administrations shall, after prior consultation with administrations of neighbouring countries, take such steps as may be necessary to prevent harmful interference from their amateur service to the fixed and mobile services of other countries. The mean power of any amateur station shall not exceed 10 W. (WRC-15)

5.98 Alternative allocation: in Armenia, Azerbaijan, Belarus, Belgium, Cameroon, Congo (Rep. of the), Denmark, Egypt, Eritrea, Spain, Ethiopia, the Russian

Federation, Georgia, Greece, Italy, Kazakhstan, Lebanon, Lithuania, the Syrian Arab Republic, Kyrgyzstan, Somalia, Tajikistan, Tunisia, Turkmenistan and Turkey, the frequency band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-15)

5.99 Additional allocation: in Saudi Arabia, Austria, Iraq, Libya, Uzbekistan, Slovakia, Romania, Serbia, Slovenia, Chad, and Togo, the band 1 810-1 830 kHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12)

5.100 In Region 1, the authorization to use the band 1 810-1 830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. 5.98 and 5.99 to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. 5.98 and 5.99.

5.103 In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1 850-2 045 kHz, 2 194-2 498 kHz, 2 502-2 625 kHz and 2 650-2 850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.

5.104 In Region 1, the use of the band 2 025-2 045 kHz by the meteorological aids service is limited to oceanographic buoy stations.

5.107 Additional allocation: in Saudi Arabia, Eritrea, Eswatini, Ethiopia, Iraq, Libya and Somalia, the frequency band 2 160-2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W. (WRC-19)

5.108 The carrier frequency 2 182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2 173.5-2 190.5 kHz are prescribed in Articles 31 and 52. (WRC-07)

5.109 The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz, 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article 31.

5.110 The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz, 12 520 kHz and 16 695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article 31.

5.111 The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.525 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article 31.

The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of □ 3 kHz about the frequency. (WRC-07)

5.112 Alternative allocation: in Sri Lanka, the frequency band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.113 For the conditions for the use of the bands 2 300-2 495 kHz (2 498 kHz in Region 1), 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service, see Nos. 5.16 to 5.20, 5.21 and 23.3 to 23.10.

5.114 Alternative allocation: in Iraq, the frequency band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.115 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article 31, by stations of the maritime mobile service engaged in coordinated search and rescue operations. (WRC-07)

5.116 Administrations are urged to authorize the use of the band 3 155-3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs.

It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.

5.117 Alternative allocation: in Côte d'Ivoire, Egypt, Liberia, Sri Lanka and Togo, the frequency band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.118 Additional allocation: in the United States, Mexico and Peru, the frequency band 3 230-3 400 kHz is also allocated to the radiolocation service on a secondary basis. (WRC-19)

5.123 Additional allocation: in Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe, the frequency band 3 900-3 950 kHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21. (WRC 19)

5.127 The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. 52.220 and Appendix 17).

5.128 Frequencies in the frequency bands 4 063-4 123 kHz and 4 130-4 438 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W, on condition that harmful interference is not caused to the maritime mobile service. In addition, in Afghanistan, Argentina, Armenia, Belarus, Botswana, Burkina Faso, the Central African Rep., China, the Russian Federation, Georgia, India, Kazakhstan, Mali, Niger, Pakistan, Kyrgyzstan, Tajikistan, Chad, Turkmenistan and Ukraine, in the frequency bands 4 063-4 123 kHz, 4 130-4 133 kHz and 4 408-4 438 kHz, stations in the fixed service, with a mean power not exceeding 1 kW, can be operated on condition that they are situated at least 600 km from the coast and that harmful interference is not caused to the maritime mobile service. (WRC-19)

5.130 The conditions for the use of the carrier frequencies 4 125 kHz and 6 215 kHz are prescribed in Articles 31 and 52. (WRC-07)

5.131 The frequency 4 209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)

5.132 The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix 17).

5. 132A Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed or mobile services.

Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution 612 (WRC-12).

5. 132B Alternative allocation: in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 4 438-4 488 kHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. (WRC-19)

5.133 Different category of service: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Latvia, Lithuania, Niger,Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 130-5 250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 5.33). (WRC-12)

5. 133A Alternative allocation: in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency bands 5 250-5 275 kHz and 26 200-26 350 kHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.134 The use of the frequency bands 5 900-5 950 kHz, 7 300-7 350 kHz, 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 13 570-13 600 kHz, 13 800-13 870 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz by the broadcasting service is subject to the application of the procedure of Article 12. Administrations are encouraged to use these frequency bands to facilitate the introduction of digitally modulated emissions in accordance with the provisions of Resolution 517 (Rev.WRC-19). (WRC-19)

5.136 Additional allocation: frequencies in the band 5 900-5 950 kHz may be used by stations in the following services, communicating only within the boundary of the country in which they are located: fixed service (in all three Regions), land mobile service (in Region 1), mobile except aeronautical mobile (R) service (in Regions 2 and 3), on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.137 On condition that harmful interference is not caused to the maritime mobile service, the bands 6 200-6 213.5 kHz and 6 220.5-6 525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.

5.138 The following bands:

6 765-6 795 kHz (centre frequency 6 780 kHz),
433.05-434.79 MHz (centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. 5.280,
61-61.5 GHz (centre frequency 61.25 GHz),
122-123 GHz (centre frequency 122.5 GHz), and
244-246 GHz (centre frequency 245 GHz)

are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.

5.140 Additional allocation: in Angola, Iraq, Somalia and Togo, the frequency band 7 000-7 050 kHz is also allocated to the fixed service on a primary basis. (WRC-15)

5.141 Alternative allocation: in Egypt, Eritrea, Ethiopia, Guinea, Libya, Madagascar and Niger, the band 7 000-7 050 kHz is allocated to the fixed service on a primary basis. (WRC-12)

5.141A Additional allocation: in Uzbekistan and Kyrgyzstan, the bands 7 000-7 100 kHz and 7 100-7 200 kHz are also allocated to the fixed and land mobile services on a secondary basis. (WRC-03)

5.141B Additional allocation: in Algeria, Saudi Arabia, Australia, Bahrain, Botswana, Brunei Darussalam, China, Comoros, Korea (Rep. of), Diego Garcia, Djibouti, Egypt, United Arab Emirates, Eritrea, Guinea, Indonesia, Iran (Islamic Republic of), Japan, Jordan, Kuwait, Libya, Mali, Morocco, Mauritania, Niger, New Zealand, Oman, Papua New Guinea, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sudan, South Sudan, Tunisia, Viet Nam and Yemen, the frequency band 7 100-7 200 kHz is also allocated to the fixed and the mobile, except aeronautical mobile (R), services on a primary basis. (WRC 19)

5.143 Additional allocation: frequencies in the band 7 300-7 350 kHz may be used by stations in the fixed service and in the land mobile service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.143B In Region 1, the band 7 350-7 450 kHz is allocated, until 29 March 2009, to the fixed service on a primary basis and to the land mobile service on a secondary basis. After 29 March 2009, on condition that harmful interference is not caused to the broadcasting service, frequencies in the band 7 350-7 450 kHz may be used by stations in the fixed and land mobile services communicating only within the boundary of the country in which they are located, each station using a total radiated power that shall not exceed 24 dBW. (WRC-03)

5.143C Additional allocation: after 29 March 2009 in Algeria, Saudi Arabia, Bahrain, Comoros, Djibouti, Egypt, United Arab Emirates, Iran (Islamic Republic of), Libya, Jordan, Kuwait, Morocco, Mauritania, Oman, Qatar, the Syrian Arab Republic, Sudan, South Sudan,Tunisia and Yemen, the bands 7 350-7 400 kHz and 7 400-7 450 kHz are also allocated to the fixed service on a primary basis. (WRC-12)

5.144 In Region 3, the stations of those services to which the band 7 995-8 005 kHz is allocated may transmit standard frequency and time signals.

5.145 The conditions for the use of the carrier frequencies 8 291 kHz, 12 290 kHz and 16 420 kHz are prescribed in Articles 31 and 52. (WRC-07)

5.145A Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed service. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution 612 (WRC-12).

5.145B Alternative allocation: in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency bands 9 305-9 355 kHz and 16 100-16 200 kHz are allocated to the fixed service on a primary basis. (WRC-19)

5.146 Additional allocation: frequencies in the bands 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.147 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

5.149 In making assignments to stations of other services to which the bands:

13 360-13 410 kHz,
25 550-25 670 kHz,
37.5-38.25 MHz,
73-74.6 MHz in Regions 1 and 3,
150.05-153 MHz in Region 1,
322-328.6 MHz,
406.1-410 MHz,
608-614 MHz in Regions 1 and 3,
1 330-1 400 MHz,
1 610.6-1 613.8 MHz,
1 660-1 670 MHz,
1 718.8-1 722.2 MHz,
2 655-2 690 MHz,
3 260-3 267 MHz,
3 332-3 339 MHz,
3 345.8-3 352.5 MHz,
4 825-4 835 MHz,
4 950-4 990 MHz,
4 990-5 000 MHz,
6 650-6 675.2 MHz,
10.6-10.68 GHz,
14.47-14.5 GHz,
22.01-22.21 GHz,
22.21-22.5 GHz,
22.81-22.86 GHz,
23.07-23.12 GHz,
31.2-31.3 GHz,
31.5-31.8 GHz in Regions 1 and 3,
36.43-36.5 GHz,
42.5-43.5 GHz,
48.94-49.04 GHz,
76-86 GHz,
92-94 GHz,
94.1-100 GHz,
102-109.5 GHz,
111.8-114.25 GHz,
128.33-128.59 GHz,
129.23-129.49 GHz,
130-134 GHz,
136-148.5 GHz,
151.5-158.5 GHz,
168.59-168.93 GHz,
171.11-171.45 GHz,
172.31-172.65 GHz,
173.52-173.85 GHz,
195.75-196.15 GHz,
209-226 GHz,
241-250 GHz,
252-275 GHz

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 4.5 and 4.6 and Article 29). (WRC-07)

5.149A Alternative allocation: in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 13 450-13 550 kHz is allocated to the fixed service on a primary basis and to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-19)

5.150 The following bands:
13 553-13 567 kHz (centre frequency 13 560 kHz),

26 957-27 283 kHz (centre frequency 27 120 kHz),
40.66-40.70 MHz (centre frequency 40.68 MHz),
902-928 MHz in Region 2 (centre frequency 915 MHz),
2 400-2 500 MHz (centre frequency 2 450 MHz),
5 725-5 875 MHz (centre frequency 5 800 MHz), and
24-24.25 GHz (centre frequency 24.125 GHz)

are also designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within these bands must accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. 15.13.

5.151 Additional allocation: frequencies in the bands 13 570-13 600 kHz and 13 800-13 870 kHz may be used by stations in the fixed service and in the mobile except aeronautical mobile (R) service, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.152 Additional allocation: in Armenia, Azerbaijan, China, Côte d'Ivoire, the Russian Federation, Georgia, Iran (Islamic Republic of), Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 14 250-14 350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW. (WRC-03)

5.153 In Region 3, the stations of those services to which the band 15 995-16 005 kHz is allocated may transmit standard frequency and time signals.

5.154 Additional allocation: in Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 18 068-18 168 kHz is also allocated to the fixed service on a primary basis for use within their boundaries, with a peak envelope power not exceeding 1 kW. (WRC-03)

5.155 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, Tajikistan, Turkmenistan and Ukraine, the band 21 850-21 870 kHz is also allocated to the aeronautical mobile (R) service on a primary basis. (WRC-07)

5.155A In Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, Tajikistan, Turkmenistan and Ukraine, the use of the band 21 850-21 870 kHz by the fixed service is limited to provision of services related to aircraft flight safety. (WRC-07)

5.155B The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.

5.156 Additional allocation: in Nigeria, the band 22 720-23 200 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.

5.156A The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.

5.157 The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

5.158 Alternative allocation: in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 24 450-24 600 kHz is allocated to the fixed and land mobile services on a primary basis. (WRC-19)

5.159 Alternative allocation: in Armenia, Belarus, Moldova and Kyrgyzstan, the frequency band 39-39.5 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-19)

5.160 Additional allocation: in Botswana, Burundi, Dem. Rep. of the Congo and Rwanda, the band 41-44 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)

5.161 Additional allocation: in Iran (Islamic Republic of) and Japan, the band 41-44 MHz is also allocated to the radiolocation service on a secondary basis.

5.161A Additional allocation: in Korea (Rep. of), the United States and Mexico, the frequency bands 41.015-41.665 MHz and 43.35-44 MHz are also allocated to the radiolocation service on a primary basis. Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed or mobile services. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution 612 (Rev.WRC-12). (WRC-19)

5.161B Alternative allocation: in Albania, Germany, Armenia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Cyprus, Vatican, Croatia, Denmark, Spain, Estonia, Finland, France, Greece, Hungary, Ireland, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malta, Moldova, Monaco, Montenegro, Norway, Uzbekistan, Netherlands, Portugal, Kyrgyzstan, Slovakia, Czech Rep., Romania, United Kingdom, San Marino, Slovenia, Sweden, Switzerland, Turkey and Ukraine, the frequency band 42-42.5 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-19)

5.162A Additional allocation: in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, the Russian Federation, Finland, France, Ireland, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Monaco, Montenegro, Norway, the Netherlands, Poland, Portugal, the Czech Rep., the United Kingdom, Serbia, Slovenia, Sweden and Switzerland the frequency band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC-97). (WRC-19)

5.163 Additional allocation: in Armenia, Belarus, the Russian Federation, Georgia, Kazakhstan, Latvia, Moldova, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency bands 47-48.5 MHz and 56.5-58 MHz are also allocated to the fixed and land mobile services on a secondary basis. (WRC-19)

5.164 Additional allocation: in Albania, Algeria, Germany, Austria, Belgium, Bosnia and Herzegovina, Botswana, Bulgaria, Côte d'Ivoire, Croatia, Denmark, Spain, Estonia, Eswatini, Finland, France, Gabon, Greece, Hungary, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Montenegro, Nigeria, Norway, the Netherlands, Poland, Syrian Arab Republic, Slovakia, Czech Rep., Romania, the United Kingdom, Serbia, Slovenia, Sweden, Switzerland, Chad, Togo, Tunisia and Turkey, the frequency band 47-68 MHz, in South Africa the frequency band 47-50 MHz, and in Latvia the frequency bands 48.5-56.5 MHz and 58-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each frequency band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting

stations of countries other than those mentioned in connection with the frequency band. (WRC-19)

5.165 Additional allocation: in Angola, Cameroon, Congo (Rep. of the), Egypt, Madagascar, Mozambique, Niger, Somalia, Sudan, South Sudan, Tanzania and Chad, the frequency band 47-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.166A Different category of service: in Austria, Cyprus, the Vatican, Croatia, Denmark, Spain, Finland, Hungary, Latvia, the Netherlands, the Czech Republic, the United Kingdom, Slovakia and Slovenia, the frequency band 50.0-50.5 MHz is allocated to the amateur service on a primary basis. Stations in the amateur service in these countries shall not cause harmful interference to, or claim protection from, stations of the broadcasting, fixed and mobile services operating in accordance with the Radio Regulations in the frequency band 50.0-50.5 MHz in the countries not listed in this provision. For a station of these services, the protection criteria in No. 5.169B shall also apply. In Region 1, with the exception of those countries listed in No. 5.169, wind profiler radars operating in the radiolocation service under No. 5.162A are authorized to operate on the basis of equality with stations in the amateur service in the frequency band 50.0-50.5 MHz. (WRC-19)

5.166B In Region 1, stations in the amateur service operating on a secondary basis shall not cause harmful interference to, or claim protection from, stations of the broadcasting service. The field strength generated by an amateur station in Region 1 in the frequency band 50-52 MHz shall not exceed a calculated value of +6 dB(μV/m) at a height of 10 m above ground for more than 10% of time along the border of a country with operational analogue broadcasting stations in Region 1 and of neighbouring countries with broadcasting stations in Region 3 listed in Nos. 5.167 and 5.168. (WRC-19)

5.166C In Region 1, stations in the amateur service in the frequency band 50-52 MHz, with the exception of those countries listed in No. 5.169, shall not cause harmful interference to, or claim protection from, wind profiler radars operating in the radiolocation service under No. 5.162A. (WRC-19)

5.166D Different category of service: in Lebanon, the frequency band 50-52 MHz is allocated to the amateur service on a primary basis. Stations in the amateur service in Lebanon shall not cause harmful interference to, or claim protection from, stations of the broadcasting, fixed and mobile services operating in accordance with the Radio Regulations in the frequency band 50-52 MHz in the countries not listed in this provision. (WRC-19)

5.166E In the Russian Federation, only the frequency band 50.080-50.280 MHz is allocated to the amateur service on a secondary basis. The protection criteria for the other services in the countries not listed in this provision are specified in Nos. 5.166B and 5.169B. (WRC-19)

5.169 Alternative allocation: in Botswana, Eswatini, Lesotho, Malawi, Namibia, Rwanda, South Africa, Zambia and Zimbabwe, the frequency band 50-54 MHz is allocated to the amateur service on a primary basis. In Senegal, the frequency band 50-51 MHz is allocated to the amateur service on a primary basis. (WRC-19)

5.169A Alternative allocation: in the following countries in Region 1: Angola, Saudi Arabia, Bahrain, Burkina Faso, Burundi, the United Arab Emirates, Gambia,

Jordan, Kenya, Kuwait, Mauritius, Mozambique, Oman, Uganda, Qatar, South Sudan and Tanzania, the frequency band 50-54 MHz is allocated to the amateur service on a primary basis. In Guinea-Bissau, the frequency band 50.0-50.5 MHz is allocated to the amateur service on a primary basis. In Djibouti, the frequency band 50-52 MHz is allocated to the amateur service on a primary basis. With the exception of those countries listed in No. 5.169, stations in the amateur service operating in Region 1 under this footnote, in all or part of the frequency band 50-54 MHz, shall not cause harmful interference to, or claim protection from, stations of other services operating in accordance with the Radio Regulations in Algeria, Egypt, Iran (Islamic Republic of), Iraq, Israel, Libya, Palestine[2*], the Syrian Arab Republic, the Dem. People's Republic of Korea, Sudan and Tunisia. The field strength generated by an amateur station in the frequency band 50-54 MHz shall not exceed a value of +6 dB(μV/m) at a height of 10 m above ground for more than 10% of time along the borders of listed countries requiring protection. (WRC-19)

5.169B Except countries listed under No. 5.169, stations in the amateur service used in Region 1, in all or part of the 50-54 MHz frequency band, shall not cause harmful interference to, or claim protection from, stations of other services used in accordance with the Radio Regulations in Algeria, Armenia, Azerbaijan, Belarus, Egypt, Russian Federation, Iran (Islamic Republic of), Iraq, Kazakhstan, Kyrgyzstan, Libya, Uzbekistan, Palestine*, the Syrian Arab Republic, Sudan, Tunisia and Ukraine. The field strength generated by an amateur station in the frequency band 50-54 MHz shall not exceed a value of +6 dB(μV/m) at a height of 10 m above ground for more than 10% of time along the borders of the countries listed in this provision. (WRC-19)

5.171 Additional allocation: in Botswana, Eswatini, Lesotho, Malawi, Mali, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Zambia and Zimbabwe, the frequency band 54-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.175 Alternative allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Moldova, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting service on a primary basis. In Latvia and Lithuania, the bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting and mobile, except aeronautical mobile, services on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned. (WRC-07)

5.177 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-07)

5.179 Additional allocation: in Armenia, Azerbaijan, Belarus, China, the Russian Federation, Georgia, Kazakhstan, Lithuania, Mongolia, Kyrgyzstan, Slovakia, Tajikistan, Turkmenistan and Ukraine, the bands 74.6-74.8 MHz and 75.2-75.4

[2*] Pursuant to Resolution 99 (Rev. Dubai, 2018) and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only. (WRC-07)

5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons. Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

5.181 Additional allocation: in Egypt, Israel and the Syrian Arab Republic, the band 74.8-75.2 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. 9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. 9.21. (WRC-03)

5.187 Alternative allocation: in Albania, the band 81-87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).

5.190 Additional allocation: in Monaco, the band 87.5-88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-97)

5.192 Additional allocation: in China and Korea (Rep. of), the band 100-108 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)

5.194 Additional allocation: in Kyrgyzstan, Somalia and Turkmenistan, the frequency band 104-108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-19)

5.197 Additional allocation: in the Syrian Arab Republic, the band 108-111.975 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. 9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedures invoked under No. 9.21. (WRC-12)

5.197A Additional allocation: the band 108-117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service, limited to systems operating in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution 413 (Rev.WRC-07). The use of the band 108-112 MHz by the aeronautical mobile (R) service shall be limited to systems composed of ground-based transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. (WRC-07)

5.200 In the band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime

mobile service may communicate on these frequencies under the conditions laid down in Article 31 for distress and safety purposes with stations of the aeronautical mobile service. (WRC-07)

5.201 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Iraq (Republic of), Japan, Kazakhstan, Mali, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Kyrgyzstan, Romania, Senegal, Tajikistan, Turkmenistan and Ukraine, the frequency band 132-136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-19)

5.202 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bulgaria, the United Arab Emirates, the Russian Federation, Georgia, Iran (Islamic Republic of), Jordan, Mali, Oman, Uzbekistan, Poland, the Syrian Arab Republic, Kyrgyzstan, Romania, Senegal, Tajikistan, Turkmenistan and Ukraine, the frequency band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-19)

5.203C The use of the space operation service (space-to-Earth) with non-geostationary satellite short-duration mission systems in the frequency band 137-138 MHz is subject to Resolution 660 (WRC-19). Resolution 32 (WRC-19) applies. These systems shall not cause harmful interference to, or claim protection from, the existing services to which the frequency band is allocated on a primary basis. (WRC-19)

5.204 Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Kuwait, Montenegro, Oman, Pakistan, the Philippines, Qatar, Singapore, Thailand and Yemen, the frequency band 137-138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. 5.33). (WRC-19)

5.205 Different category of service: in Israel and Jordan, the allocation of the band 137-138 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 5.33).

5.206 Different category of service: in Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, the Russian Federation, Finland, France, Georgia, Greece, Kazakhstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, the Syrian Arab Republic, Slovakia, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 137-138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 5.33). (WRC-2000)

5.207 Additional allocation: in Australia, the band 137-144 MHz is also allocated to the broadcasting service on a primary basis until that service can be accommodated within regional broadcasting allocations.

5.208 The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. (WRC-97)

5.208A In making assignments to space stations in the mobile-satellite service in the frequency bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz and in the maritime mobile-satellite service (space-to-Earth) in the frequency bands

157.1875-157.3375 MHz and 161.7875-161.9375 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the frequency bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions as shown in the most recent version of Recommendation ITU-R RA.769. (WRC-19)

5.208B[3]* In the frequency bands:

137-138			MHz,
157.1875-157.3375			MHz,
161.7875-161.9375			MHz,
387-390			MHz,
400.15-401			MHz,
1	452-1	492	MHz,
1	525-1	610	MHz,
1	613.8-1	626.5	MHz,
2	655-2	690	MHz,

21.4-22 GHz,

Resolution 739 (Rev.WRC-19) applies. (WRC-19)

5.209 The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems. (WRC-97)

5.209A The use of the frequency band 137.175-137.825 MHz by non-geostationary-satellite systems in the space operation service identified as short-duration mission in accordance with Appendix 4 is not subject to No. 9.11A. (WRC-19)

5.210 Additional allocation: in Italy, the Czech Rep. and the United Kingdom, the bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis. (WRC-07)

5.211 Additional allocation: in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Denmark, the United Arab Emirates, Spain, Finland, Greece, Guinea, Ireland, Israel, Kenya, Kuwait, Lebanon, Liechtenstein, Luxembourg, North Macedonia, Mali, Malta, Montenegro, Norway, the Netherlands, Qatar, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sweden, Switzerland, Tanzania, Tunisia and Turkey, the frequency band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis. (WRC-19)

5.212 Alternative allocation: in Angola, Botswana, Cameroon, the Central African Rep., Congo (Rep. of the), Eswatini, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Niger, Oman, Uganda, Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Chad, Togo, Zambia and Zimbabwe, the frequency band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-19)

5.214 Additional allocation: in Eritrea, Ethiopia, Kenya, North Macedonia, Montenegro, Serbia, Somalia, Sudan, South Sudan and Tanzania, the frequency band 138-144 MHz is also allocated to the fixed service on a primary basis. (WRC-19)

5.216 Additional allocation: in China, the band 144-146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.

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[3]* This provision was previously numbered as No. 5.347A. It was renumbered to preserve the sequential order.

5.218 Additional allocation: the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. 9.21. The bandwidth of any individual transmission shall not exceed ±25 kHz.

5.218A The frequency band 148-149.9 MHz in the space operation service (Earth-to-space) may be used by non-geostationary-satellite systems with short-duration missions. Non-geostationary-satellite systems in the space operation service used for a short-duration mission in accordance with Resolution 32 (WRC-19) of the Radio Regulations are not subject to agreement under No. 9.21. At the stage of coordination, the provisions of Nos. 9.17 and 9.18 also apply. In the frequency band 148-149.9 MHz, non-geostationary-satellite systems with short-duration missions shall not cause unacceptable interference to, or claim protection from, existing primary services within this frequency band, or impose additional constraints on the space operation and mobile-satellite services. In addition, earth stations in non-geostationary-satellite systems in the space operation service with short-duration missions in the frequency band 148-149.9 MHz shall ensure that the power flux-density does not exceed −149 dB(W/(m^2 □ 4 kHz)) for more than 1% of time at the border of the territory of the following countries: Armenia, Azerbaijan, Belarus, China, Korea (Rep. of), Cuba, Russian Federation, India, Iran (Islamic Republic of), Japan, Kazakhstan, Malaysia, Uzbekistan, Kyrgyzstan, Thailand and Viet Nam. In case this power flux-density limit is exceeded, agreement under No. 9.21 is required to be obtained from countries mentioned in this footnote. (WRC-19)

5.219 The use of the frequency band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the frequency band 148-149.9 MHz. The use of the frequency band 148-149.9 MHz by non-geostationary-satellite systems in the space operation service identified as short-duration mission is not subject to No. 9.11A. (WRC 19)

5.220 The use of the frequency bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. (WRC-15)

5.221 Stations of the mobile-satellite service in the frequency band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Croatia, Cuba, Denmark, Djibouti, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Eswatini, Ethiopia, the Russian Federation, Finland, France, Gabon, Georgia, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Montenegro, Mozambique, Namibia, Norway, New Zealand, Oman,

Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Kyrgyzstan, Dem. People's Rep. of Korea, Slovakia, Romania, the United Kingdom, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Tanzania, Chad, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Zambia and Zimbabwe. (WRC-19)

5.225A Additional allocation: in Algeria, Armenia, Azerbaijan, Belarus, China, the Russian Federation, France, Iran (Islamic Republic of), Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and Viet Nam, the frequency band 154-156 MHz is also allocated to the radiolocation service on a primary basis. The usage of the frequency band 154-156 MHz by the radiolocation service shall be limited to space-object detection systems operating from terrestrial locations. The operation of stations in the radiolocation service in the frequency band 154-156 MHz shall be subject to agreement obtained under No. 9.21. For the identification of potentially affected administrations in Region 1, the instantaneous field-strength value of 12 dB(V/m) for 10% of the time produced at 10 m above ground level in the 25 kHz reference frequency band at the border of the territory of any other administration shall be used. For the identification of potentially affected administrations in Region 3, the interference-to-noise ratio (I/N) value of 6 dB (N = 161 dBW/4 kHz), or 10 dB for applications with greater protection requirements, such as public protection and disaster relief (PPDR (N = 161 dBW/4 kHz)), for 1% of the time produced at 60 m above ground level at the border of the territory of any other administration shall be used. In the frequency bands 156.7625-156.8375 MHz, 156.5125-156.5375 MHz, 161.9625-161.9875 MHz, 162.0125-162.0375 MHz, out-of-band e.i.r.p. of space surveillance radars shall not exceed 16 dBW. Frequency assignments to the radiolocation service under this allocation in Ukraine shall not be used without the agreement of Moldova. (WRC-12)

5.226 The frequency 156.525 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service using digital selective calling (DSC). The conditions for the use of this frequency and the band 156.4875-156.5625 MHz are contained in Articles 31 and 52, and in Appendix 18.

The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency and the band 156.7625-156.8375 MHz are contained in Article 31 and Appendix 18.

In the bands 156-156.4875 MHz, 156.5625-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475-162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles 31 and 52, and Appendix 18).

Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service.

However, the frequencies 156.8 MHz and 156.525 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements. (WRC-07)

5.227 Additional allocation: the bands 156.4875-156.5125 MHz and 156.5375-156.5625 MHz are also allocated to the fixed and land mobile services on a primary basis. The use of these bands by the fixed and land mobile services shall not cause harmful interference to nor claim protection from the maritime mobile VHF radiocommunication service. (WRC-07)

5.227A SUP (WRC-12)

5.228 The use of the frequency bands 156.7625-156.7875 MHz and 156.8125-156.8375 MHz by the mobilesatellite service (Earth-to-space) is limited to the reception of automatic identification system (AIS) emissions of long range AIS broadcast messages (Message 27, see the most recent version of Recommendation ITU-R M.1371). With the exception of AIS emissions, emissions in these frequency bands by systems operating in the maritime mobile service for communications shall not exceed 1W. (WRC-12)

5.228A The frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz may be used by aircraft stations for the purpose of search and rescue operations and other safety-related communications. (WRC-12)

5.228AA The use of the frequency bands 161.9375-161.9625 MHz and 161.9875-162.0125 MHz by the maritime mobile-satellite (Earth-to-space) service is limited to the systems which operate in accordance with Appendix 18. (WRC-15)

5.228AB The use of the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz by the maritime mobile-satellite service (Earth-to-space) is limited to non-geostationary-satellite systems operating in accordance with Appendix 18. (WRC-19)

5.228AC The use of the frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz by the maritime mobile-satellite service (space-to-Earth) is limited to non-geostationary-satellite systems operating in accordance with Appendix 18. Such use is subject to agreement obtained under No. 9.21 with respect to the terrestrial services in Azerbaijan, Belarus, China, Korea (Rep. of), Cuba, the Russian Federation, the Syrian Arab Republic, the Dem. People's Rep. of Korea, South Africa and Viet Nam. (WRC 19)

5.228B The use of the frequency bands 161.9625-161.9875 MHz and 162.0125-162.0375 MHz by the fixed and land mobile services shall not cause harmful interference to, or claim protection from, the maritime mobile service. (WRC-12)

5.229 Alternative allocation: in Morocco, the band 162-174 MHz is allocated to the broadcasting service on a primary basis. The use of this band shall be subject to agreement with administrations having services, operating or planned, in accordance with the Table which are likely to be affected. Stations in existence on 1 January 1981, with their technical characteristics as of that date, are not affected by such agreement.

5.235 Additional allocation: in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174-223 MHz is also allocated to the land mobile service on a primary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.

5.237 Additional allocation: in Congo (Rep. of the), Egypt, Eritrea, Ethiopia, Gambia, Guinea, the Libya, Mali, Sierra Leone, Somalia and Chad, the band 174-223

MHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-12)

5.243 Additional allocation: in Somalia, the band 216-225 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to not causing harmful interference to existing or planned broadcasting services in other countries.

5.246 Alternative allocation: in Spain, France, Israel and Monaco, the band 223-230 MHz is allocated to the broadcasting and land mobile services on a primary basis (see No. 5.33) on the basis that, in the preparation of frequency plans, the broadcasting service shall have prior choice of frequencies; and allocated to the fixed and mobile, except land mobile, services on a secondary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations in Morocco and Algeria.

5.247 Additional allocation: in Saudi Arabia, Bahrain, the United Arab Emirates, Jordan, Oman, Qatar and Syrian Arab Republic, the band 223-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

5.251 Additional allocation: in Nigeria, the band 230-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to agreement obtained under No. 9.21.

5.252 Alternative allocation: in Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe, the frequency bands 230-238 MHz and 246-254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-19)

5.254 The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. 9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations except for the additional allocation made in footnote No. 5.256A. (WRC-03)

5.255 The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. 9.11A.

5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes. (WRC-07)

5.256A Additional allocation: in China, the Russian Federation and Kazakhstan, the frequency band 258-261 MHz is also allocated to the space research service (Earth-to-space) and space operation service (Earth-to-space) on a primary basis. Stations in the space research service (Earth-to-space) and space operation service (Earth-to-space) shall not cause harmful interference to, or claim protection from, or constrain the use and development of, the mobile service systems and mobile-satellite service systems operating in the frequency band. Stations in space research service (Earth-to-space) and space operation service (Earth-to-space) shall not constrain the future development of fixed service systems of other countries. (WRC-15)

5.257 The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. 9.21.

5.258 The use of the band 328.6-335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).

5.259 Additional allocation: in Egypt, and the Syrian Arab Republic, the band 328.6-335.4 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. 9.21. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. 9.21. (WRC-12)

5.260A In the frequency band 399.9-400.05 MHz, the maximum e.i.r.p. of any emission of earth stations in the mobile-satellite service shall not exceed 5 dBW in any 4 kHz band and the maximum e.i.r.p. of each earth station in the mobile-satellite service shall not exceed 5 dBW in the whole 399.9-400.05 MHz frequency band. Until 22 November 2022, this limit shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2022, these limits shall apply to all systems within the mobile-satellite service operating in this frequency band.

In the frequency band 399.99-400.02 MHz, the e.i.r.p. limits as specified above shall apply after 22 November 2022 to all systems within the mobile-satellite service. Administrations are requested that their mobile-satellite service satellite links in the 399.99-400.02 MHz frequency band comply with the e.i.r.p. limits as specified above, after 22 November 2019. (WRC 19)

5.260B In the frequency band 400.02-400.05 MHz, the provisions of No. 5.260A are not applicable for telecommand uplinks within the mobile-satellite service. (WRC-19)

5.261 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

5.262 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Botswana, Colombia, Cuba, Egypt, the United Arab Emirates, Ecuador, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Liberia, Malaysia, Moldova, Uzbekistan, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, Kyrgyzstan, Romania, Singapore, Somalia, Tajikistan, Chad, Turkmenistan and Ukraine, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-12)

5.263 The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

5.264A In the frequency band 401-403 MHz, the maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW in any 4 kHz band for geostationary-satellite systems and non-geostationary-satellite systems with an orbit of apogee equal or greater than 35 786 km.

The maximum e.i.r.p. of any emission of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW in any 4 kHz band for non-geostationary-satellite systems with an orbit of apogee lower than 35 786 km.

The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 22 dBW for geostationary-satellite systems and non-geostationary-satellite systems with an

orbit of apogee equal or greater than 35 786 km in the whole 401-403 MHz frequency band. The maximum e.i.r.p. of each earth station in the meteorological-satellite service and the Earth exploration-satellite service shall not exceed 7 dBW for non-geostationary-satellite systems with an orbit of apogee lower than 35 786 km in the whole 401-403 MHz frequency band.

Until 22 November 2029, these limits shall not apply to satellite systems for which complete notification information has been received by the Radiocommunication Bureau by 22 November 2019 and that have been brought into use by that date. After 22 November 2029, these limits shall apply to all systems within the meteorological-satellite service and the Earth exploration-satellite service operating in this frequency band. (WRC 19)

5.264B Non-geostationary-satellite systems in the meteorological-satellite service and the Earth exploration-satellite service for which complete notification information has been received by the Radiocommunication Bureau before 28 April 2007 are exempt from provisions of No. 5.264A and may continue to operate in the frequency band 401.898-402.522 MHz on a primary basis without exceeding a maximum e.i.r.p. level of 12 dBW. (WRC-19)

5.264 The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. The power flux-density limit indicated in Annex 1 of Appendix 5 shall apply until such time as a competent world radiocommunication conference revises it.

5.265 In the frequency band 403-410 MHz, Resolution 205 (Rev.WRC-19) applies. (WRC-19)

5.266 The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article 31). (WRC-07)

5.267 Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

5.268 Use of the frequency band 410-420 MHz by the space research service is limited to space-to-space communication links with an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from transmitting stations of the space research service (space-to-space) in the frequency band 410-420 MHz shall not exceed –153 dB(W/m^2) for 0^o □ □ □ 5^o, -153+ 0.077 (d – 5) dB(W/m^2) for 5^o □ □ □ 70^o and –148 dB(W/m^2) for 70^o □ □ □ 90^o, where □ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. In this frequency band, stations of the space research service (space-to-space) shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. No. 4.10 does not apply. (WRC-15)

5.269 Different category of service: in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420-430 MHz and 440-450 MHz to the radiolocation service is on a primary basis (see No. 5.33).

5.270 Additional allocation: in Australia, the United States, Jamaica and the Philippines, the bands 420-430 MHz and 440-450 MHz are also allocated to the amateur service on a secondary basis.

5.271 Additional allocation: in Belarus, China, India, Kyrgyzstan and Turkmenistan, the band 420-460 MHz isalso allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis. (WRC-07)

5.274 Alternative allocation: in Denmark, Norway, Sweden, and Chad the bands 430-432 MHz and 438-440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC12)

5.275 Additional allocation: in Croatia, Estonia, Finland, Libya, North Macedonia, Montenegro and Serbia, the frequency bands 430-432 MHz and 438-440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-19)

5.276 Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Djibouti, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Libya, Malaysia, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Switzerland, Thailand, Togo, Turkey and Yemen, the frequency band 430-440 MHz is also allocated to the fixed service on a primary basis and the frequency bands 430-435 MHz and 438-440 MHz are also allocated, except in Ecuador, to the mobile, except aeronautical mobile, service on a primary basis. (WRC-15)

5.277 Additional allocation: in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo (Rep. of the), Djibouti, the Russian Federation, Georgia, Hungary, Israel, Kazakhstan, Mali, Uzbekistan, Poland, the Dem. Rep. of the Congo, Kyrgyzstan, Slovakia, Romania, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the frequency band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC 19)

5.279A The use of the frequency band 432-438 MHz by sensors in the Earth exploration-satellite service (active) shall be in accordance with Recommendation ITU-R RS.1260-2. Additionally, the Earth exploration-satellite service (active) in the frequency band 432-438 MHz shall not cause harmful interference to the aeronautical radionavigation service in China. The provisions of this footnote in no way diminish the obligation of the Earth exploration-satellite service (active) to operate as a secondary service in accordance with Nos. 5.29 and 5.30. (WRC-19)

5.280 In Germany, Austria, Bosnia and Herzegovina, Croatia, Liechtenstein, North Macedonia, Montenegro, Portugal, Serbia, Slovenia and Switzerland, the frequency band 433.05-434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this frequency band must accept harmful interference which may be caused by these applications. ISM equipment operating in this frequency band is subject to the provisions of No. 15.13. (WRC-19)

5.281 Additional allocation: in the French overseas departments and communities in Region 2 and India, the band 433.75-434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.

5.282 In the bands 435-438 MHz, 1 260-1 270 MHz, 2 400-2 450 MHz, 3 400-3 410 MHz (in Regions 2 and 3 only) and 5 650-5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. 5.43). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. 25.11. The use of the bands

1 260-1 270 MHz and 5 650-5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.

5.283 Additional allocation: in Austria, the band 438-440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

5.284 Additional allocation: in Canada, the band 440-450 MHz is also allocated to the amateur service on a secondary basis.

5.285 Different category of service: in Canada, the allocation of the band 440-450 MHz to the radiolocation service is on a primary basis (see No. 5.33).

5.286 The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. 9.21.

5.286A The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. (WRC-97)

5.286AA The frequency band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) - see Resolution 224 (Rev.WRC-19). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-19)

5.286B The use of the band 454-455 MHz in the countries listed in No. 5.286D, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. 5.286E, by stations in the mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)

5.286C The use of the band 454-455 MHz in the countries listed in No. 5.286D, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. 5.286E, by stations in the mobile-satellite service, shall not constrain the development and use of the fixed and mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)

5.286E Additional allocation: in Cape Verde, Nepal and Nigeria, the bands 454-456 MHz and 459-460 MHz are also allocated to the mobile-satellite (Earth-to-space) service on a primary basis. (WRC-07)

5.287 Use of the frequency bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz by the maritime mobile service is limited to on-board communication stations. The characteristics of the equipment and the channelling arrangement shall be in accordance with Recommendation ITU R M.1174 4. The use of these frequency bands in territorial waters is subject to the national regulations of the administration concerned. (WRC 19)

5.288 In the territorial waters of the United States and the Philippines, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174-4. (WRC-19)

5.289 Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

5.290 Different category of service: in Afghanistan, Azerbaijan, Belarus, China, the Russian Federation, Japan, Kyrgyzstan, , Tajikistan and, Turkmenistan the

allocation of the band 460-470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. 5.33), subject to agreement obtained under No. 9.21. (WRC-12)

5.291A Additional allocation: in Germany, Austria, Denmark, Estonia, Liechtenstein, the Czech Rep., Serbia and Switzerland, the frequency band 470-494 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC-97). (WRC-15)

5.294 Additional allocation: in Saudi Arabia, Cameroon, Côte d'Ivoire, Egypt, Ethiopia, Israel, Libya, the Syrian Arab Republic, Chad and Yemen, the frequency band 470-582 MHz is also allocated to the fixed service on a secondary basis. (WRC-15)

5.296 Additional allocation: in Albania, Germany, Angola, Saudi Arabia, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cameroon, Vatican, Congo (Rep. of the), Côte d'Ivoire, Croatia, Denmark, Djibouti, Egypt, United Arab Emirates, Spain, Estonia, Eswatini, Finland, France, Gabon, Georgia, Ghana, Hungary, Iraq, Ireland, Iceland, Israel, Italy, Jordan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malawi, Mali, Malta, Morocco, Mauritius, Mauritania, Moldova, Monaco, Mozambique, Namibia, Niger, Nigeria, Norway, Oman, Uganda, the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Slovakia, the Czech Republic, Romania, the United Kingdom, Rwanda, San Marino, Serbia, Sudan, South Africa, Sweden, Switzerland, Tanzania, Chad, Togo, Tunisia, Turkey, Ukraine, Zambia and Zimbabwe, the frequency band 470-694 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting and programme-making. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table in countries other than those listed in this footnote. (WRC-19)

5.300 Additional allocation: in Saudi Arabia, Cameroon, Egypt, United Arab Emirates, Israel, Jordan, Libya, Oman, Qatar, the Syrian Arab Republic and Sudan, the frequency band 582-790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis. (WRC-15)

5.304 Additional allocation: in the African Broadcasting Area (see Nos. 5.10 to 5.13), the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.

5.306 Additional allocation: in Region 1, except in the African Broadcasting Area (see Nos. 5.10 to 5.13), and in Region 3, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.

5.312 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 645-862 MHz, and in Bulgaria the frequency bands 646-686 MHz, 726-753 MHz, 778-811 MHz and 822-852 MHz, are also allocated to the aeronautical radionavigation service on a primary basis. (WRC-19)

5.312A In Region 1, the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service is subject to the provisions of Resolution 760 (Rev.WRC-19). See also Resolution 224 (Rev.WRC-19). (WRC-19)

5.313A The frequency band, or portions of the frequency band 698-790 MHz, in Australia, Bangladesh, Brunei Darussalam, Cambodia, China, Korea (Rep. of), Fiji, India, Indonesia, Japan, Kiribati, Lao P.D.R., Malaysia, Myanmar (Union of), New Zealand, Pakistan, Papua New Guinea, the Philippines, the Dem. People's Rep. of Korea, Solomon Islands, Samoa, Singapore, Thailand, Tonga, Tuvalu, Vanuatu and Viet Nam, are identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC 19)

5.316B In Region 1, the allocation to the mobile, except aeronautical mobile, service in the frequency band 790-862 MHz is subject to agreement obtained under No. 9.21 with respect to the aeronautical radionavigation service in countries mentioned in No. 5.312. For countries party to the GE06 Agreement, the use of stations of the mobile service is also subject to the successful application of the procedures of that Agreement. Resolutions 224 (Rev.WRC-19) and 749 (Rev.WRC-19) shall apply, as appropriate. (WRC-19)

5.317A The parts of the frequency band 698-960 MHz in Region 2 and the frequency bands 694-790 MHz in Region 1 and 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) – see Resolutions 224 (Rev.WRC 19), 760 (Rev.WRC 19) and 749 (Rev.WRC 19), where applicable. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-19)

5.319 Additional allocation: in Belarus, the Russian Federation and Ukraine, the bands 806-840 MHz (Earth-to-space) and 856-890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.

5.322 In Region 1, in the band 862-960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. 5.10 to 5.13) excluding Algeria, Burundi, Egypt, Spain, Lesotho, Libya, Morocco, Malawi, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe and Zambia, subject to agreement obtained under No. 9.21. (WRC-12)

5.323 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 862-960 MHz, in Bulgaria the frequency bands 862-880 MHz and 915-925 MHz, and in Romania the frequency bands 862-880 MHz and 915-925 MHz, are also allocated to the aeronautical radionavigation service on a primary basis. Such use is subject to agreement obtained under No. 9.21 with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-19)

5.327A The use of the frequency band 960-1 164 MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution 417 (Rev.WRC-15). (WRC-15)

5.328 The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities. (WRC-2000)

5.328A Stations in the radionavigation-satellite service in the band 1 164-1 215 MHz shall operate in accordance with the provisions of Resolution 609 (Rev.WRC-07) and shall not claim protection from stations in the aeronautical radionavigation service in the band 960-1 215 MHz. No. 5.43A does not apply. The provisions of No. 21.18 shall apply. (WRC-07)

5.328AA The frequency band 1 087.7-1 092.3 MHz is also allocated to the aeronautical mobile-satellite (R) service (Earth-to-space) on a primary basis, limited to the space station reception of Automatic Dependent Surveillance-Broadcast (ADS-B) emissions from aircraft transmitters that operate in accordance with recognized international aeronautical standards. Stations operating in the aeronautical mobile-satellite (R) service shall not claim protection from stations operating in the aeronautical radionavigation service. Resolution 425 (Rev.WRC-19) shall apply. (WRC-19)

5.328B The use of the bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010-5 030 MHz by systems and networks in the radionavigation-satellite service for which complete coordination or notification information, as appropriate, is received by the Radiocommunication Bureau after 1 January 2005 is subject to the application of the provisions of Nos. 9.12, 9.12A and 9.13. Resolution 610 (WRC-03) shall also apply; however, in the case of radionavigation-satellite service (space-to-space) networks and systems, Resolution 610 (WRC-03) shall only apply to transmitting space stations. In accordance with No. 5.329A, for systems and networks in the radionavigation-satellite service (space-to-space) in the bands 1 215-1 300 MHz and 1 559-1 610 MHz, the provisions of Nos. 9.7, 9.12, 9.12A and 9.13 shall only apply with respect to other systems and networks in the radionavigation-satellite service (space-to-space). (WRC-07)

5.329 Use of the radionavigation-satellite service in the frequency band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. 5.331. Furthermore, the use of the radionavigation-satellite service in the frequency band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to the radiolocation service. No. 5.43 shall not apply in respect of the radiolocation service. Resolution 608 (Rev.WRC-19) shall apply. (WRC-19)

5.329A Use of systems in the radionavigation-satellite service (space-to-space) operating in the bands 1 215-1 300 MHz and 1 559-1 610 MHz is not intended to provide safety service applications, and shall not impose any additional constraints on radionavigation-satellite service (space-to-Earth) systems or on other services operating in accordance with the Table of Frequency Allocations. (WRC-07)

5.330 Additional allocation: in Angola, Saudi Arabia, Bahrain, Bangladesh, Cameroon, China, Djibouti,Egypt,the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, , Nepal, Oman ,Pakistan, the Philippines, Qatar, the Syrian Arab Republic, Somalia, Sudan, South Sudan ,Chad, Togo and Yemen, the band 1 215-1 300 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-12)

5.331 Additional allocation: in Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brazil, Burkina Faso, Burundi, Cameroon, China, Korea (Rep. of), Croatia, Denmark, Egypt, the United Arab Emirates, Estonia, the Russian Federation, Finland, France, Ghana, Greece, Guinea, Equatorial Guinea, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Jordan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Madagascar, Mali, Mauritania, Montenegro, Nigeria, Norway, Oman, Pakistan, the Kingdom of the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Dem. People's Rep. of Korea, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sudan, South Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Thailand, Togo, Turkey, Venezuela and Viet Nam, the frequency band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis. In Canada and the United States, the frequency band 1 240-1 300 MHz is also allocated to the radionavigation service, and use of the radionavigation service shall be limited to the aeronautical radionavigation service. (WRC-19)

5.332 In the band 1 215-1 260 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis. (WRC-2000)

5.335 In Canada and the United States in the band 1 240-1 300 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause interference to, claim protection from, or otherwise impose constraints on operation or development of the aeronautical radionavigation service. (WRC-97)

5.335A In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis. (WRC-2000)

5.337 The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.

5.337A The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service. (WRC-2000)

5.338 In Kyrgyzstan, Slovakia, . and Turkmenistan, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz. (WRC-12)

5.338A In the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 24.25-27.5 GHz, 30-31.3 GHz, 49.7-50.2 GHz, 50.4-50.9 GHz, 51.4-52.4 GHz, 52.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution 750 (Rev.WRC-19) applies. (WRC-19)

5.339 The bands 1 370-1 400 MHz, 2 640-2 655 MHz, 4 950-4 990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and Earth exploration-satellite (passive) services on a secondary basis.

5.339A SUP (WRC-07)

5.340 All emissions are prohibited in the following bands:

1 400-1 427 MHz,
2 690-2 700 MHz, except those provided for by No. 5.422,
10.68-10.7 GHz, except those provided for by No. 5.483,
15.35-15.4 GHz, except those provided for by No. 5.511,
23.6-24 GHz,
31.3-31.5 GHz,
31.5-31.8 GHz, in Region 2,
48.94-49.04 GHz, from airborne stations
50.2-50.4 GHz[42],
52.6-54.25 GHz,
86-92 GHz,
100-102 GHz,
109.5-111.8 GHz,
114.25-116 GHz,
148.5-151.5 GHz,
164-167 GHz,
182-185 GHz,
190-191.8 GHz,
200-209 GHz,
226-231.5 GHz,
250-252 GHz. (WRC-03)

5.341 In the bands 1 400-1 727 MHz, 101-120 GHz and 197-220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

5.341A In Region 1, the frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-15). This identification does not preclude the use of these frequency bands by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. 9.21 with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. 5.342. (WRC-15)

5.342 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Uzbekistan, Kyrgyzstan and Ukraine, the frequency band 1 429-1 535 MHz is also allocated to the aeronautical mobile service on a primary basis, exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the frequency band 1 452-1 492 MHz is subject to agreement between the administrations concerned. (WRC-15)

5.345 Use of the frequency band 1 452-1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution 528 (Rev.WRC 19). (WRC 19)

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[42] 5.340.1 The allocation to the Earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands. (WRC-97)

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, Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Palestine[5**], Qatar, Dem. Rep. of the Congo, Rwanda, Senegal, Seychelles, Sudan, South Sudan, South Africa, Tanzania, Chad, Togo, Tunisia, Zambia, and Zimbabwe, the frequency band 1 452-1 492 MHz is identified for use by administrations listed above wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-19). This identification does not preclude the use of this frequency band by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained under No. 9.21 with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. 5.342. See also Resolution 761 (Rev.WRC-19). (WRC-19)

5.348 The use of the band 1 518-1 525 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from the stations in the fixed service. No. 5.43A does not apply. (WRC-03)

5.348A In the band 1 518-1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. 9.11A for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be –150 dB(W/m^2) in any 4 kHz band for all angles of arrival, instead of those given in Table 5-2 of Appendix 5. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from stations in the mobile service in the territory of Japan. No. 5.43A does not apply. (WRC-03)

5.348B In the band 1 518-1 525 MHz, stations in the mobile-satellite service shall not claim protection from aeronautical mobile telemetry stations in the mobile service in the territory of the United States (see Nos. 5.343 and 5.344) and in the countries listed in No. 5.342. No. 5.43A does not apply. (WRC-03)

5.349 Different category of service: in Saudi Arabia, Azerbaijan, Bahrain, Cameroon, Egypt, Iran (Islamic Republic of), Iraq, Israel, Kazakhstan, Kuwait, Lebanon, North Macedonia, Morocco, Qatar, Syrian Arab Republic, Kyrgyzstan, Turkmenistan and Yemen, the allocation of the frequency band 1 525-1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 5.33). (WRC-19)

5.350 Additional allocation: in Kyrgyzstan and Turkmenistan, the frequency band 1 525-1 530 MHz is also allocated to the aeronautical mobile service on a primary basis. (WRC-19)

5.351 The bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5-1 660.5 MHz shall not be used for feeder links of any service. In

[5**] The use by Palestine of the allocation to the mobile service in the frequency band 1 452-1 492 MHz identified for IMT is noted, pursuant to Resolution 99 (Rev. Dubai, 2018) and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

5.351A For the use of the bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 668-1 675 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions 212 (Rev.WRC-07) and 225 (Rev.WRC-07). (WRC-07)

5.352A In the frequency band 1 525-1 530 MHz, stations in the mobile-satellite service, except stations in the maritime mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed service in Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Morocco, Mauritania, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Viet Nam and Yemen notified prior to 1 April 1998. (WRC 19)

5.353A In applying the procedures of Section II of Article 9 to the mobile-satellite service in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution 222 (WRC-2000)[6*] shall apply.) (WRC-2000)

5.354 The use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite services is subject to coordination under No. 9.11A.

5.355 Additional allocation: in Bahrain, Bangladesh, Congo (Rep. of the), Djibouti, Egypt, Eritrea, Iraq, Israel, Kuwait, , Qatar, Syrian Arab Republic, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the bands 1 540-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis. (WRC-12)

5.356 The use of the band 1 544-1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article 31).

5.357 Transmissions in the band 1 545-1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.

5.357A In applying the procedures of Section II of Article 9 to the mobile-satellite service in the bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article 44. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44 shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service

[6*] Note by the Secretariat: This Resolution was revised by WRC-07.

communications with priority 1 to 6 in Article 44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution 222 (WRC-12)* shall apply.) (WRC-12)

5.359 Additional allocation: in Germany, Saudi Arabia, Armenia, Azerbaijan, Belarus, Cameroon, the Russian Federation, Georgia, Guinea, Guinea-Bissau, Jordan, Kazakhstan, Kuwait, Lithuania, Mauritania, Uganda, Uzbekistan, Pakistan, Poland, the Syrian Arab Republic, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, Tajikistan, Tunisia, Turkmenistan and Ukraine, the frequency bands 1 550-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in these frequency bands. (WRC-19)

5.362A In the United States, in the bands 1 555-1 559 MHz and 1 656.5-1 660.5 MHz, the aeronautical mobile-satellite (R) service shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (WRC-97)

5.364 The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. 9.11A. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. 5.366 (to which No. 4.10 applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed –3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. 5.366 and stations in the fixed service operating in accordance with the provisions of No. 5.359. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. 5.366.

5.365 The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. 9.11A.

5.366 The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. 9.21.

5.367 Additional allocation: The frequency bands 1 610-1 626.5 MHz is also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. 9.21.

5.368 The provisions of No. 4.10 do not apply with respect to the radiodetermination-satellite and mobile-satellite services in the frequency band 1 610-1 626.5 MHz. However, No. 4.10 applies in the frequency band 1 610-1 626.5 MHz with respect to the aeronautical radionavigation-satellite service when operating in accordance with No. 5.366, the aeronautical mobile satellite (R) service when

operating in accordance with No. 5.367, and in the frequency band 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for GMDSS. (WRC-19)

5.369 Different category of service: in Angola, Australia, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Israel, Lebanon, Liberia, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, the Dem. Rep. of the Congo, Sudan, South Sudan ,Togo and Zambia, the allocation of the band 1 610-1 626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. 5.33), subject to agreement obtained under No. 9.21 from countries not listed in this provision. (WRC-12)

5.371 Additional allocation: in Region 1, the bands 1 610-1 626.5 MHz (Earth-to-space) (space-to-Earth) is also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. 9.21. (WRC 12)

5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the frequency band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. 29.13 applies). The equivalent power flux-density (epfd) produced in the frequency band 1 610.6-1 613.8 MHz by all space stations of a non-geostationary-satellite system in the mobile-satellite service (space-to-Earth) operating in frequency band 1 613.8-1 626.5 MHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, using the methodology given in Recommendation ITU-R M.1583-1, and the radio astronomy antenna pattern described in Recommendation ITU-R RA.1631-0. (WRC-19)

5.373 Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose additional constraints on earth stations operating in the maritime mobile-satellite service or maritime earth stations of the radiodetermination-satellite service operating in accordance with the Radio Regulations in the frequency band 1 610-1 621.35 MHz or on earth stations operating in the maritime mobile-satellite service operating in accordance with the Radio Regulations in the frequency band 1 626.5-1 660.5 MHz, unless otherwise agreed between the notifying administrations. (WRC-19)

5.373A Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose constraints on the assignments of earth stations of the mobile-satellite service (Earth-to-space) and the radiodetermination-satellite service (Earth-to-space) in the frequency band 1 621.35-1 626.5 MHz in networks for which complete coordination information has been received by the Radiocommunication Bureau before 28 October 2019. (WRC 19

5.374 Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5-1 634.5 MHz and 1 656.5-1 660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. 5.359. (WRC-97)

5.375 The use of the band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article 31).

5.376 Transmissions in the band 1 646.5-1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

5.376A Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)

5.379 Additional allocation: in Bangladesh, India, Indonesia, Nigeria and Pakistan, the band 1 660.5-1 668.4 MHz is also allocated to the meteorological aids service on a secondary basis.

5.379A Administrations are urged to give all practicable protection in the band 1 660.5-1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4-1 668.4 MHz as soon as practicable.

5.379B The use of the band 1 668-1 675 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. In the band 1 668-1 668.4 MHz, Resolution 904 (WRC-07) shall apply. (WRC-07)

5.379C In order to protect the radio astronomy service in the band 1 668-1 670 MHz, the aggregate power flux-density values produced by mobile earth stations in a network of the mobile-satellite service operating in this band shall not exceed – 181 dB(W/m^2) in 10 MHz and 194 dB(W/m^2) in any 20 kHz at any radio astronomy station recorded in the Master International Frequency Register, for more than 2% of integration periods of 2 000 s. (WRC-03)

5.379D For sharing of the band 1 668.4-1 675 MHz between the mobile-satellite service and the fixed and mobile services, Resolution 744 (Rev.WRC-07) shall apply. (WRC-07)

5.379E In the band 1 668.4-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to stations in the meteorological aids service in China, Iran (Islamic Republic of), Japan and Uzbekistan. In the band 1 668.4-1 675 MHz, administrations are urged not to implement new systems in the meteorological aids service and are encouraged to migrate existing meteorological aids service operations to other bands as soon as practicable. (WRC-03)

5.380A In the band 1 670-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, existing earth stations in the meteorological-satellite service notified before 1 January 2004. Any new assignment to these earth stations in this band shall also be protected from harmful interference from stations in the mobile-satellite service. (WRC-07)

5.382 Different category of service: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Congo (Rep. of the), Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Russian Federation, Guinea, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, North Macedonia, Mauritania, Moldova, Mongolia, Oman, Uzbekistan, Poland, Qatar, the Syrian Arab Republic, Kyrgyzstan, Somalia, Tajikistan, Turkmenistan, Ukraine and Yemen, the allocation of the frequency band 1 690-1 700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 5.33), and in the Dem. People's Rep. of Korea, the allocation of the frequency band 1 690-1 700 MHz to the fixed service is on a primary basis (see No. 5.33) and to the mobile, except aeronautical mobile, service on a secondary basis. (WRC-19)

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5.384A The frequency bands 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, or portions thereof, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-15). This identification does not preclude the use of these by any

application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)

5.385 Additional allocation: the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. (WRC-2000)

5.386 Additional allocation: the frequency band 1 750-1 850 MHz is also allocated to the space operation (Earth-to- space) and space research (Earth-to-space) services in Region 2 (except in Mexico), in Australia, Guam, India, Indonesia and Japan on a primary basis, subject to agreement obtained under No. 9.21, having particular regard to troposcatter systems. (WRC-15)

5.387 Additional allocation: in Belarus, Georgia, Kazakhstan, Kyrgyzstan, Romania, Tajikistan and Turkmenistan, the band 1 770-1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-12)

5.388 The frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications (IMT). Such use does not preclude the use of these frequency bands by other services to which they are allocated. The frequency bands should be made available for IMT in accordance with Resolution 212 (Rev.WRC-15) (see also Resolution 223 (Rev.WRC-15)). (WRC-15)

5.388A In Regions 1 and 3, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz and, in Region 2, the bands 1 885-1 980 MHz and 2 110-2 160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications-2000 (IMT-2000), in accordance with Resolution 221 (Rev.WRC-03)*. Their use by IMT-2000 applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-03)

5.388B In Algeria, Saudi Arabia, Bahrain, Benin, Burkina Faso, Cameroon, Comoros, Côte d'Ivoire, China, Cuba, Djibouti, Egypt, United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, India, Iran (Islamic Republic of), Israel, Jordan, Kenya, Kuwait, Lebanon, Libya, Mali, Morocco, Mauritania, Nigeria, Oman, Uganda, Pakistan, Qatar, the Syrian Arab Republic, Senegal, Singapore, Sudan, South Sudan, Tanzania, Chad, Togo, Tunisia, Yemen, Zambia and Zimbabwe, for the purpose of protecting fixed and mobile services, including IMT mobile stations, in their territories from co-channel interference, a high altitude platform station (HAPS) operating as an IMT base station in neighbouring countries, in the frequency bands referred to in No. 5.388A, shall not exceed a co-channel power flux-density of −127 dB(W/(m^2 · MHz)) at the Earth's surface outside a country's borders unless explicit agreement of the affected administration is provided at the time of the notification of HAPS. (WRC-19)

5.389A The use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. 9.11A and to the provisions of Resolution 716 (Rev.WRC-2000). (WRC-07)

5.389B The use of the frequency band 1 980-1 990 MHz by the mobile-satellite service shall not cause harmful interference to or constrain the development of the fixed and mobile services in Argentina, Brazil, Canada, Chile, Ecuador, the United

States, Honduras, Jamaica, Mexico, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela. (WRC-19)

5.389E The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.

5.389F In Algeria, Cape Verde, Egypt, Iran (Islamic Republic of), Mali, Syrian Arab Republic and Tunisia, the use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service shall neither cause harmful interference to the fixed and mobile services, nor hamper the development of those services prior to 1 January 2005, nor shall the former service request protection from the latter services. (WRC-19)

5.391 In making assignments to the mobile service in the frequency bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154-0, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-15)

5.392 Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.

5.395 In France and Turkey, the use of the band 2 310-2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service. (WRC-03)

5.398 In respect of the radiodetermination-satellite service in the band 2 483.5-2 500 MHz, the provisions of No. 4.10 do not apply

5.398A Different category of service: In Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, the band 2 483.5-2 500 MHz is allocated on a primary basis to the radiolocation service. The radiolocation stations in these countries shall not cause harmful interference to, or claim protection from, stations of the fixed, mobile and mobile-satellite services operating in accordance with the Radio Regulations in the frequency band 2 483.5-2 500 MHz. (WRC-12

5.399 Except for cases referred to in No. 5.401, stations of the radiodetermination-satellite service operating in the frequency band 2 483.5-2 500 MHz for which notification information is received by the Bureau after 17 February 2012, and the service area of which includes Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, shall not cause harmful interference to, and shall not claim protection from stations of the radiolocation service operating in these countries in accordance with No. 5.398A. (WRC-12)

5.401 In Angola, Australia, Bangladesh, China, Eritrea, Eswatini, Ethiopia, India, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, Dem. Rep. of the Congo, Sudan, Togo and Zambia, the frequency band 2 483.5-2 500 MHz was already allocated on a primary basis to the radiodetermination-satellite service before WRC-12, subject to agreement obtained under No. 9.21 from countries not listed in this provision. Systems in the

radiodetermination-satellite service for which complete coordination information has been received by the Radiocommunication Bureau before 18 February 2012 will retain their regulatory status, as of the date of receipt of the coordination request information. (WRC-19)

5.402 The use of the band 2 483.5-2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. 9.11A. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2 483.5-2 500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990-5 000 MHz band allocated to the radio astronomy service worldwide.

5.410 The band 2 500-2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. 9.21. No. 9.21 does not apply to tropospheric scatter links situated entirely outside Region 1. Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in this band. When planning new tropospheric scatter radio-relay links in this band, all possible measures shall be taken to avoid directing the antennas of these links towards the geostationary-satellite orbit. (WRC-12)

5.412 Alternative allocation: in , Kyrgyzstan and Turkmenistan, the band 2 500-2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12

5.413 In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz.

5.416 The use of the band 2 520-2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. 9.21. The provisions of No. 9.19 shall be applied by administrations in this band in their bilateral and multilateral negotiations. (WRC-07)

5.418B Use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. 5.418, for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. 9.12. (WRC-03)

5.418C Use of the band 2 630-2 655 MHz by geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000 is subject to the application of the provisions of No. 9.13 with respect to non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. 5.418 and No. 22.2 does not apply. (WRC-03)

5.422 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Brunei Darussalam, Congo (Rep. of the), Côte d'Ivoire, Cuba, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Mauritania, , Mongolia, Montenegro, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, the Dem. Rep. of the Congo, Romania, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine and Yemen, the band 2 690-2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile,

services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-12)

5.423 In the band 2 700-2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.

5.424 Additional allocation: in Canada, the band 2 850-2 900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.

5.424A In the band 2 900-3 100 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the radionavigation service. (WRC-03)

5.425 In the band 2 900-3 100 MHz, the use of the shipborne interrogator-transponder (SIT) system shall be confined to the sub-band 2 930 -2 950 MHz.

5.426 The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

5.427 In the bands 2 900-3 100 MHz and 9 300-9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. 4.9.

5.428 Additional allocation: in Kyrgyzstan and Turkmenistan, the frequency band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)

5.429 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Benin, Brunei Darussalam, Cambodia, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Egypt, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, New Zealand, Oman, Uganda, Pakistan, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, the Dem. People's Rep. of Korea, Sudan and Yemen, the frequency band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. New Zealand and the countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service. (WRC-19)

5.429A Additional allocation: in Angola, Benin, Botswana, Burkina Faso, Burundi, Djibouti, Eswatini, Ghana, Guinea, Guinea-Bissau, Lesotho, Liberia, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sudan, South Sudan, South Africa, Tanzania, Chad, Togo, Zambia and Zimbabwe, the frequency band 3 300-3 400 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis. Stations in the mobile service operating in the frequency band 3 300-3 400 MHz shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC-19)

5.429B In the following countries of Region 1 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, the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). The use of this frequency band shall be in accordance with Resolution 223 (Rev.WRC-19). The use of the frequency band 3 300-3 400 MHz by IMT stations

in the mobile service shall not cause harmful interference to, or claim protection from, systems in the radiolocation service, and administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to protect operations within the radiolocation service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-19)

5.430 Additional allocation: in Kyrgyzstan and Turkmenistan, the frequency band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)

5.430A The allocation of the frequency band 3 400-3 600 MHz to the mobile, except aeronautical mobile, service is subject to agreement obtained under No. 9.21. This frequency band is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The provisions of Nos. 9.17 and 9.18 shall also apply in the coordination phase. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band, it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed -154.5 dB(W/(m^2 · 4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station) and with the assistance of the Bureau if so requested. In case of disagreement, calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 600 MHz shall not claim more protection from space stations than that provided in Table 21-4 of the Radio Regulations (Edition of 2004). (WRC-15)

5.431 Additional allocation: in Germany, the frequency band 3 400-3 475 MHz is also allocated to the amateur service on a secondary basis. (WRC-19)

5.436 Use of the frequency band 4 200-4 400 MHz by stations in the aeronautical mobile (R) service is reserved exclusively for wireless avionics intra-communication systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution 424 (WRC-15). (WRC-15)

5.437 Passive sensing in the Earth exploration-satellite and space research services may be authorized in the frequency band 4 200-4 400 MHz on a secondary basis. (WRC-15)

5.438 Use of the frequency band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. (WRC-15)

5.439 Additional allocation: in Iran (Islamic Republic of), the band 4 200-4 400 MHz is also allocated to the fixed service on a secondary basis. (WRC-12)

5.440 The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be

confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. 9.21.

5.440A In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Paraguay, Uruguay and Venezuela), and in Australia, the band 4 400-4 940 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. 1.83). Such use shall be in accordance with Resolution 416 (WRC-07) and shall not cause harmful interference to, nor claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of these bands by other mobile service applications or by other services to which these bands are allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-07)

5.441 The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix 30B. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix 30B. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.441A In Brazil, Paraguay and Uruguay, the frequency band 4 800-4 900 MHz, or portions thereof, is identified for the implementation of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained with neighbouring countries, and IMT stations shall not claim protection from stations of other applications of the mobile service. Such use shall be in accordance with Resolution 223 (Rev.WRC-19). (WRC-19)

5.441B In Angola, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, China, Côte d'Ivoire, Djibouti, Eswatini, Russian Federation, Gambia, Guinea, Iran (Islamic Republic of), Kazakhstan, Kenya, Lao P.D.R., Lesotho, Liberia, Malawi, Mauritius, Mongolia, Mozambique, Nigeria, Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, South Africa, Tanzania, Togo, Viet Nam, Zambia and Zimbabwe, the frequency band 4 800-4 990 MHz, or portions thereof, is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and

does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. 9.21 with concerned administrations, and IMT stations shall not claim protection from stations of other applications of the mobile service. In addition, before an administration brings into use an IMT station in the mobile service, it shall ensure that the power flux-density (pfd) produced by this station does not exceed −155 dB(W/(m^2 · 1 MHz)) produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. This pfd criterion is subject to review at WRC-23. Resolution 223 (Rev.WRC-19) applies. This identification shall be effective after WRC-19. (WRC-19)

5.442 In the frequency bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service. In Region 2 (except Brazil, Cuba, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), and in Australia, the frequency band 4 825-4 835 MHz is also allocated to the aeronautical mobile service, limited to aeronautical mobile telemetry for flight testing by aircraft stations. Such use shall be in accordance with Resolution 416 (WRC-07) and shall not cause harmful interference to the fixed service. (WRC-15)

5.443 Different category of service: in Argentina, Australia and Canada, the allocation of the bands 4 825-4 835 MHz and 4 950-4 990 MHz to the radio astronomy service is on a primary basis (see No. 5.33).

5.443AA In the frequency bands 5 000-5 030 MHz and 5 091-5 150 MHz, the aeronautical mobile-satellite (R) service is subject to agreement obtained under No. 9.21. The use of these bands by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)

5.443B In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the frequency band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the frequency band 5 010-5 030 MHz shall not exceed -124.5 dB(W/m^2) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the frequency band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the frequency band 5 010-5 030 MHz shall comply with the limits in the frequency band 4 990-5 000 MHz defined in Resolution 741 (Rev.WRC-15). (WRC-15)

5.443C The use of the frequency band 5 030-5 091 MHz by the aeronautical mobile (R) service is limited to internationally standardized aeronautical systems. Unwanted emissions from the aeronautical mobile (R) service in the frequency band 5 030-5 091 MHz shall be limited to protect RNSS system downlinks in the adjacent 5 010-5 030 MHz band. Until such time that an appropriate value is established in a relevant ITU-R Recommendation, the e.i.r.p. density limit of −75 dBW/MHz in the frequency band 5 010-5 030 MHz for any AM(R)S station unwanted emission should be used. (WRC-12)

5.443D In the frequency band 5 030-5 091 MHz, the aeronautical mobile-satellite (R) service is subject to coordination under No. 9.11A. The use of this frequency band by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)

5.444 The frequency band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. In the frequency band 5 030-5 091 MHz, the requirements of this system shall have priority over other uses of this frequency band. For the use of the frequency band 5 091-5 150 MHz, No. 5.444A and Resolution 114 (Rev.WRC-15) apply. (WRC-15)

5.444A The use of the allocation to the fixed-satellite service (Earth-to-space) in the frequency band 5 091-5 150 MHz is limited to feeder links of non-geostationary satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A. The use of the frequency band 5 091-5 150 MHz by feeder links of non-geostationary satellite systems in the mobile-satellite service shall be subject to application of Resolution 114 (Rev.WRC-15). Moreover, to ensure that the aeronautical radionavigation service is protected from harmful interference, coordination is required for feeder-link earth stations of the non-geostationary satellite systems in the mobile-satellite service which are separated by less than 450 km from the territory of an administration operating ground stations in the aeronautical radionavigation service. (WRC-15)

5.444B The use of the frequency band 5 091-5 150 MHz by the aeronautical mobile service is limited to:

- systems operating in the aeronautical mobile (R) service and in accordance with international aeronautical standards, limited to surface applications at airports. Such use shall be in accordance with Resolution 748 (Rev.WRC-19);
- aeronautical telemetry transmissions from aircraft stations (see No. 1.83) in accordance with Resolution 418 (Rev.WRC-19). (WRC-19)

5.446 Additional allocation: in the countries listed in No. 5.369, the frequency band 5 150-5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. 9.21. In Region 2 (except in Mexico), the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in No. 5.369 and Bangladesh, the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination satellite service operating in the frequency bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power fluxdensity at the Earth's surface shall in no case exceed -159 dB(W/m^2) in any 4 kHz band for all angles of arrival. (WRC-15)

5.446A The use of the frequency bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution 229 (Rev.WRC-19). (WRC-19)

5.446B In the band 5 150-5 250 MHz, stations in the mobile service shall not claim protection from earth stations in the fixed-satellite service. No. 5.43A does not

apply to the mobile service with respect to fixed-satellite service earth stations. (WRC-03)

5.446C Additional allocation: in Region 1 (except in Algeria, Saudi Arabia, Bahrain, Egypt, United Arab Emirates, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Syrian Arab Republic, Sudan, South Sudan and Tunisia), the frequency band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis, limited to aeronautical telemetry transmissions from aircraft stations (see No. 1.83), in accordance with Resolution 418 (Rev.WRC-19). These stations shall not claim protection from other stations operating in accordance with Article 5. No. 5.43A does not apply. (WRC-19)

5.446D Additional allocation: in Brazil, the band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis, limited to aeronautical telemetry transmissions from aircraft stations (see No. 1.83), in accordance with Resolution 418 (Rev.WRC-19). (WRC-19)

5.447 Additional allocation: in Côte d'Ivoire, Egypt, Lebanon, the Syrian Arab Republic and Tunisia, the frequency band 5 150-5 250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. 9.21. In this case, the provisions of Resolution 229 (Rev.WRC-19) do not apply. (WRC-19)

5.447A The allocation to the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A.

5.447B Additional allocation: the band 5 150-5 216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. 9.11A. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150-5 216 MHz shall in no case exceed –164 dB(W/m^2) in any 4 kHz band for all angles of arrival.

5.447C Administrations responsible for fixed-satellite service networks in the band 5 150-5 250 MHz operated under Nos. 5.447A and 5.447B shall coordinate on an equal basis in accordance with No. 9.11A with administrations responsible for non-geostationary-satellite networks operated under No. 5.446 and brought into use prior to 17 November 1995. Satellite networks operated under No. 5.446 brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. 5.447A and 5.447B.

5.447D The allocation of the band 5 250-5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

5.447E Additional allocation: The frequency band 5 250-5 350 MHz is also allocated to the fixed service on a primary basis in the following countries in Region 3: Australia, Korea (Rep. of), India, Indonesia, Iran (Islamic Republic of), Japan, Malaysia, Papua New Guinea, the Philippines, Dem. People's Rep. of Korea, Sri Lanka, Thailand and Viet Nam. The use of this frequency band by the fixed service is intended for the implementation of fixed wireless access systems and shall comply with Recommendation ITU-R F.1613-0. In addition, the fixed service shall not claim protection from the radiodetermination, Earth exploration-satellite (active) and space research (active) services, but the provisions of No. 5.43A do not apply to the fixed service with respect to the Earth exploration-satellite

(active) and space research (active) services. After implementation of fixed wireless access systems in the fixed service with protection for the existing radiodetermination systems, no more stringent constraints should be imposed on the fixed wireless access systems by future radiodetermination implementations. (WRC-15)

5.447F In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). The radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution 229 (Rev.WRC-19). (WRC-19)

5.448 Additional allocation: in Kyrgyzstan, Romania and Turkmenistan, the frequency band 5 250-5 350 MHz is also allocated to the radionavigation service on a primary basis. (WRC 19)

5.448A The Earth exploration-satellite (active) and space research (active) services in the frequency band 5 250-5 350 MHz shall not claim protection from the radiolocation service. No. 5.43A does not apply. (WRC-03)

5.448B The Earth exploration-satellite service (active) operating in the band 5 350-5 570 MHz and space research service (active) operating in the band 5 460-5 570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5 350-5 460 MHz, the radionavigation service in the band 5 460-5 470 MHz and the maritime radionavigation service in the band 5 470-5 570 MHz. (WRC-03)

5.448C The space research service (active) operating in the band 5 350-5 460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated. (WRC-03)

5.448D In the frequency band 5 350-5 470 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the aeronautical radionavigation service operating in accordance with No. 5.449. (WRC-03)

5.449 The use of the band 5 350-5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

5.450 Additional allocation: in Austria, Azerbaijan, Iran (Islamic Republic of), Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 5 470-5 650 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)

5.450A In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services.— The radiodetermination services shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution 229 (Rev.WRC-19). (WRC-19)

5.450B In the frequency band 5 470-5 650 MHz, stations in the radiolocation service, except ground-based radars used for meteorological purposes in the band 5 600-5 650 MHz, shall not cause harmful interference to, nor claim protection from, radar systems in the maritime radionavigation service. (WRC-03)

5.451 Additional allocation: in the United Kingdom, the band 5 470-5 850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. 21.2, 21.3, 21.4 and 21.5 shall apply in the band 5 725-5 850 MHz.

5.452 Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

5.453 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lebanon, Libya, Madagascar, Malaysia, Niger, Nigeria, Oman, Uganda, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sri Lanka, Tanzania, Chad, Thailand, Togo, Viet Nam and Yemen, the frequency band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis. In this case, the provisions of Resolution 229 (Rev.WRC-19) do not apply. In addition, in Afghanistan, Angola, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Dem. Rep. of the Congo, Fiji, Ghana, Kiribati, Lesotho, Malawi, Maldives, Mauritius, Micronesia, Mongolia, Mozambique, Myanmar, Namibia, Nauru, New Zealand, Papua New Guinea, Rwanda, Solomon Islands, South Sudan, South Africa, Tonga, Vanuatu, Zambia and Zimbabwe, the frequency band 5 725-5 850 MHz is allocated to the fixed service on a primary basis, and stations operating in the fixed service shall not cause harmful interference to and shall not claim protection from other primary services in the frequency band. (WRC 19)

5.454 Different category of service: in Azerbaijan, the Russian Federation, Georgia, , Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. 5.33). (WRC-12)

5.455 Additional allocation: in Armenia, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Kazakhstan, Moldova, Uzbekistan, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the frequency band 5 670-5 850 MHz is also allocated to the fixed service on a primary basis. (WRC-19)

5.457 In Australia, Burkina Faso, Cote d'Ivoire, Mali and Nigeria, the allocation to the fixed service in the bands 6 440-6 520 MHz (HAPS-to-ground direction) and 6 560-6 640 MHz (ground-to- HAPS direction) may also be used by gateway links for high-altitude platform stations (HAPS) within the territory of these countries. Such use is limited to operation in HAPS gateway links and shall not cause harmful interference to, and shall not claim protection from, existing services, and shall be in compliance with Resolution 150 (WRC-12). Existing services shall not be constrained in future development by HAPS gateway links. The use of HAPS gateway links in these bands requires explicit agreement with other administrations whose territories are located within 1 000 kilometres from the border of an administration intending to use the HAPS gateway links. (WRC-12)

5.457A In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may communicate with space stations of the fixed-satellite service. Such use shall be in accordance with Resolution 902 (WRC-03). In the frequency band 5 925-6 425 MHz, earth stations located on board vessels and communicating with space stations of the fixed-satellite service may employ transmit antennas with minimum diameter of 1.2 m and operate without prior agreement of any administration if located at least 330 km away from the low-water mark as officially recognized by the coastal State. All other provisions of Resolution 902 (WRC-03) shall apply. (WRC-15)

5.457B In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may operate with the characteristics and under the conditions contained in Resolution 902 (WRC-03) in Algeria, Saudi Arabia, Bahrain, Comoros, Djibouti, Egypt, United Arab Emirates, Jordan, Kuwait, Libya, Morocco, Mauritania, Oman, Qatar, the Syrian Arab Republic, Sudan, Tunisia and Yemen, in the maritime mobile-satellite service on a secondary basis. Such use shall be in accordance with Resolution 902 (WRC-03). (WRC-15)

5.457C In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), the frequency band 5 925-6 700 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. 1.83). Such use shall be in accordance with Resolution 416 (WRC-07) and shall not cause harmful interference to, or claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of this frequency band by other mobile service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-15)

5.458 In the band 6 425-7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075-7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425-7 025 MHz and 7 075-7 250 MHz.

5.458A In making assignments in the band 6 700-7 075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6 650-6 675.2 MHz from harmful interference from unwanted emissions.

5.458B The space-to-Earth allocation to the fixed-satellite service in the band 6 700-7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. 9.11A. The use of the band 6 700-7 075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. 22.2.

5.459 Additional allocation: in the Russian Federation, the frequency bands 7 100-7 155 MHz and 7 190-7 235 MHz are also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. 9.21. In the frequency band 7 190-7 235 MHz, with respect to the Earth exploration satellite service (Earth-to-space), No. 9.21 does not apply. (WRC-15)

5.460 No emissions from space research service (Earth-to-space) systems intended for deep space shall be effected in the frequency band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. 5.43A does not apply. (WRC-15)

5.460A The use of the frequency band 7 190-7 250 MHz (Earth-to-space) by the Earth exploration-satellite service shall be limited to tracking, telemetry and command for the operation of spacecraft. Space stations operating in the Earth exploration-satellite service (Earth-to-space) in the frequency band 7 190-7 250 MHz shall not claim protection from existing and future stations in the fixed and mobile services, and No. 5.43A does not apply. No. 9.17 applies. Additionally, to ensure protection of the existing and future deployment of fixed and mobile services, the

location of earth stations supporting spacecraft in the Earth exploration-satellite service in non-geostationary orbits or geostationary orbit shall maintain a separation distance of at least 10 km and 50 km, respectively, from the respective border(s) of neighbouring countries, unless a shorter distance is otherwise agreed between the corresponding administrations. (WRC-15)

5.460B Space stations on the geostationary orbit operating in the Earth exploration-satellite service (Earth-to-space) in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the space research service, and No. 5.43A does not apply. (WRC-15)

5.461 Additional allocation: the bands 7 250-7 375 MHz (space-to-Earth) and 7 900-8 025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. 9.21.

5.461A The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime. (WRC-97)

5.461AA The use of the frequency band 7 375-7 750 MHz by the maritime mobile-satellite service is limited to geostationary-satellite networks. (WRC-15)

5.461AB In the frequency band 7 375-7 750 MHz, earth stations in the maritime mobile-satellite service shall not claim protection from, nor constrain the use and development of, stations in the fixed and mobile, except aeronautical mobile, services. No. 5.43A does not apply. (WRC-15)

5.461B The use of the band 7 750-7 900 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems. (WRC-12)

5.462A In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the Earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival ( ), without the consent of the affected administration:

135 dB(W/m^2) in a 4 kHz band for 0º 5º

–135 + 0.5 (– 5) dB(W/m^2) in a 4 kHz band for 5º 25º

–125 dB(W/m^2) in a 1 MHz band for 25º 90º (WRC-12)

5.463 Aircraft stations are not permitted to transmit in the band 8 025-8 400 MHz. (WRC-97)

5.465 In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.

5.466 Different category of service: in Singapore and Sri Lanka, the allocation of the band 8 400-8 500 MHz to the space research service is on a secondary basis (see No. 5.32). (WRC-12)

5.468 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burundi, Cameroon, China, Congo (Rep. of the), Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guyana, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Uganda, Pakistan, Qatar, Syrian Arab Republic, the Dem. People's Rep. of Korea, Senegal, Singapore, Somalia, Sudan, Chad, Togo, Tunisia and Yemen, the frequency band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-19)

5.469 Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Lithuania, Mongolia, Uzbekistan, Poland, Kyrgyzstan, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the band 8 500-8 750 MHz is also allocated to the land mobile and radionavigation services on a primary basis. (WRC-12)

5.469A In the band 8 550-8 650 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service. (WRC-97)

5.470 The use of the band 8 750-8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.

5.471 Additional allocation: in Algeria, Germany, Bahrain, Belgium, China, Egypt, the United Arab Emirates, France, Greece, Indonesia, Iran (Islamic Republic of), Libya, the Netherlands, Qatar and Sudan, the frequency bands 8 825-8 850 MHz and 9 000-9 200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only. (WRC-15)

5.472 In the bands 8 850-9 000 MHz and 9 200-9 225 MHz, the maritime radionavigation service is limited to shore-based radars.

5.473 Additional allocation: in Armenia, Austria, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Uzbekistan, Poland, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the frequency bands 8 850-9 000 MHz and 9 200-9 300 MHz are also allocated to the radionavigation service on a primary basis. (WRC-19)

5.473A In the band 9 000-9 200 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, systems identified in No. 5.337 operating in the aeronautical radionavigation service, or radar systems in the maritime radionavigation service operating in this band on a primary basis in the countries listed in No. 5.471. (WRC-07)

5.474 In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article 31).

5.474A The use of the frequency bands 9 200-9 300 MHz and 9 900-10 400 MHz by the Earth exploration-satellite service (active) is limited to systems requiring necessary bandwidth greater than 600 MHz that cannot be fully accommodated within the frequency band 9 300-9 900 MHz. Such use is subject to agreement to be obtained under No. 9.21 from Algeria, Saudi Arabia, Bahrain, Egypt, Indonesia, Iran (Islamic Republic of), Lebanon and Tunisia. An administration that has not replied under No. 9.52 is considered as not having agreed to the coordination request. In this case, the notifying administration of the satellite system operating in the Earth exploration-satellite service (active) may request the assistance of the Bureau under Sub-Section IID of Article 9. (WRC-15)

5.474B Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2066-0. (WRC-15)

5.474C Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2065-0. (WRC-15)

5.474D Stations in the Earth exploration-satellite service (active) shall not cause harmful interference to, or claim protection from, stations of the maritime radionavigation and radiolocation services in the frequency band 9 200-9 300 MHz, the radionavigation and radiolocation services in the frequency band 9 900-10 000

MHz and the radiolocation service in the frequency band 10.0-10.4 GHz. (WRC-15)

5.475 The use of the band 9 300-9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300-9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. (WRC-07)

5.475A The use of the band 9 300-9 500 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 300 MHz that cannot be fully accommodated within the 9 500-9 800 MHz band. (WRC-07)

5.475B In the band 9 300-9 500 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, radars operating in the radionavigation service in conformity with the Radio Regulations. Ground-based radars used for meteorological purposes have priority over other radiolocation uses. (WRC-07)

5.476 SUP (WRC-07)

5.476A In the band 9 300-9 800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from, stations of the radionavigation and radiolocation services. (WRC-07)

5.477 Different category of service: in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, Oman, Uganda, Pakistan, Qatar, Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Trinidad and Tobago, and Yemen, the allocation of the frequency band 9 800-10 000 MHz to the fixed service is on a primary basis (see No. 5.33). (WRC-15)

5.478 Additional allocation: in Azerbaijan, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the frequency band 9 800-10 000 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)

5.478A The use of the band 9 800-9 900 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 500 MHz that cannot be fully accommodated within the 9 300-9 800 MHz band. (WRC-07)

5.478B In the band 9 800-9 900 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from stations of the fixed service to which this band is allocated on a secondary basis. (WRC-07)

5.479 The band 9 975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

5.481 Additional allocation: in Algeria, Germany, Angola, Brazil, China, Côte d'Ivoire, Egypt, El Salvador, Ecuador, Spain, Guatemala, Hungary, Japan, Kenya, Morocco, Nigeria, Oman, Uzbekistan, Pakistan, Paraguay, Peru, the Dem. People's Rep. of Korea, Romania, Tunisia and Uruguay, the frequency band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis. In Costa Rica, the frequency band 10.45-10.5 GHz is also allocated to the fixed service on a primary basis. (WRC 19)

5.482 In the band 10.6-10.68 GHz, the power delivered to the antenna of stations of the fixed and mobile, except aeronautical mobile, services shall not exceed −3 dBW. This limit may be exceeded, subject to agreement obtained under No. 9.21. However, in Algeria, Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, Egypt, United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Jordan, Libyan Arab Jamahiriya, Kazakhstan, Kuwait, Lebanon, Morocco, Mauritania, Moldova, Nigeria, Oman, Uzbekistan, Pakistan, Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, Singapore, Tajikistan, Tunisia, Turkmenistan and Viet Nam, this restriction on the fixed and mobile, except aeronautical mobile, service is not applicable. (WRC-07)

5.482A For sharing of the band 10.6-10.68 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile, except aeronautical mobile, services, Resolution 751 (WRC-07) applies. (WRC-07)

5.483 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, China, Colombia, Korea (Rep. of), Egypt, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, Mongolia, Qatar, Kyrgyzstan, the Dem. People's Rep. of Korea, Tajikistan, Turkmenistan and Yemen, the frequency band 10.68-10.7 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-19)

5.484 In Region 1, the use of the band 10.7-11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

5.484A The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.484B Resolution 155 (WRC-15) shall apply. (WRC-15)

5.487 In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to, or claim protection from, broadcasting-satellite stations operating in accordance with the Regions 1 and 3 Plan in Appendix 30. (WRC-03)

5.487A Additional allocation: in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to

the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the broadcasting-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-03)

5.494 Additional allocation: in Algeria, Saudi Arabia, Bahrain, Cameroon, the Central African Rep., Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Madagascar, Mali, Morocco, Mongolia, Nigeria, Oman, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the frequency band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-15)

5.495 Additional allocation: in Greece, Monaco, Montenegro, Uganda and Tunisia, the frequency band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis. (WRC 19)

5.496 Additional allocation: in Austria, Azerbaijan, Kyrgyzstan and Turkmenistan, the band 12.5-12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those listed in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries listed in this footnote. The power flux-density limit at the Earth's surface given in Table 21-4 of Article 21, for the fixed-satellite service shall apply on the territory of the countries listed in this footnote. (WRC-2000)

5.497 The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

5.498A The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)

5.499 Additional allocation: in Bangladesh, and India , the band 13.25-14 GHz is also allocated to the fixed service on a primary basis. In Pakistan, the band 13.25-13.75 GHz is allocated to the fixed service on a primary basis. (WRC 12)

5.499A The use of the frequency band 13.4-13.65 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary-satellite systems and is subject to agreement obtained under No. 9.21 with respect to satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary

satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015. (WRC-15)

5.499B Administrations shall not preclude the deployment and operation of transmitting earth stations in the standard frequency and time signal-satellite service (Earth-to-space) allocated on a secondary basis in the frequency band 13.4-13.65 GHz due to the primary allocation to FSS (space-to-Earth). (WRC-15)

5.499C The allocation of the frequency band 13.4-13.65 GHz to the space research service on a primary basis is limited to:

- satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015,
- active spaceborne sensors,
- satellite systems operating in the space research service (space-to-Earth) to relay data from space stations in the geostationary-satellite orbit to associated earth stations.

Other uses of the frequency band by the space research service are on a secondary basis. (WRC-15)

5.499D In the frequency band 13.4-13.65 GHz, satellite systems in the space research service (space-to-Earth) and/or the space research service (space-to-space) shall not cause harmful interference to, nor claim protection from, stations in the fixed, mobile, radiolocation and Earth exploration-satellite (active) services. (WRC-15)

5.499E In the frequency band 13.4-13.65 GHz, geostationary-satellite networks in the fixed-satellite service (spaceto- Earth) shall not claim protection from space stations in the Earth exploration-satellite service (active) operating in accordance with these Regulations, and No. 5.43A does not apply. The provisions of No. 22.2 do not apply to the Earth exploration-satellite service (active) with respect to the fixed-satellite service (space-to-Earth) in this frequency band. (WRC-15)

5.500 Additional allocation: in Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Morocco, Mauritania, Niger, Nigeria, Oman, Qatar, the Syrian Arab Republic, Singapore, Sudan, South Sudan, Chad and Tunisia, the frequency band 13.4-14 GHz is also allocated to the fixed and mobile services on a primary basis. In Pakistan, the frequency band 13.4-13.75 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-15)

5.501 Additional allocation: in Azerbaijan, Hungary, Japan, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis. (WRC-12)

5.501A The allocation of the frequency band 13.65-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the frequency band by the space research service are on a secondary basis. (WRC-15)

5.501B In the band 13.4-13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service. (WRC-97)

5.502 In the band 13.75-14 GHz, an earth station of a geostationary fixed-satellite service network shall have a minimum antenna diameter of 1.2 m and an earth

station of a non-geostationary fixed-satellite service system shall have a minimum antenna diameter of 4.5 m. In addition, the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services shall not exceed 59 dBW for elevation angles above 2° and 65 dBW at lower angles. Before an administration brings into use an earth station in a geostationary-satellite network in the fixed-satellite service in this band with an antenna diameter smaller than 4.5 m, it shall ensure that the power flux-density produced by this earth station does not exceed:

– –115 dB(W/(m^2 · 10 MHz)) for more than 1% of the time produced at 36 m above sea level at the low water mark, as officially recognized by the coastal State;

– –115 dB(W/(m^2 · 10 MHz)) for more than 1% of the time produced 3 m above ground at the border of the territory of an administration deploying or planning to deploy land mobile radars in this band, unless prior agreement has been obtained.

For earth stations within the fixed-satellite service having an antenna diameter greater than or equal to 4.5 m, the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW. (WRC-03)

5.503 In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. Until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band:

– in the band 13.77-13.78 GHz, the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in geostationary-satellite orbit shall not exceed:

  i) 4.7D + 28 dB(W/40 kHz), where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 1.2 m and less than 4.5 m;

  ii) 49.2 + 20 log(D/4.5) dB(W/40 kHz), where D is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 4.5 m and less than 31.9 m;

  iii) 66.2 dB(W/40 kHz) for any fixed-satellite service earth station for antenna diameters (m) equal to or greater than 31.9 m;

  iv) 56.2 dB(W/4 kHz) for narrow-band (less than 40 kHz of necessary bandwidth) fixed-satellite service earth station emissions from any fixed-satellite service earth station having an antenna diameter of 4.5 m or greater;

– the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band from 13.772 to 13.778 GHz.

Automatic power control may be used to increase the e.i.r.p. density in these frequency ranges to compensate for rain attenuation, to the extent that the power flux-density at the fixed-satellite service space station does not exceed the value resulting from use by an earth station of an e.i.r.p. meeting the above limits in clear-sky conditions. (WRC-03)

5.504 The use of the band 14-14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service.

5.504A In the band 14-14.5 GHz, aircraft earth stations in the secondary aeronautical mobile-satellite service may also communicate with space stations in the fixed-satellite service. The provisions of Nos. 5.29, 5.30 and 5.31 apply. (WRC-03)

5.504B Aircraft earth stations operating in the aeronautical mobile-satellite service in the frequency band 14-14.5 GHz shall comply with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643-0, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz frequency band located on the territory of Spain, France, India, Italy, the United Kingdom and South Africa. (WRC-15)

5.504C In the frequency band 14-14.25 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Côte d'Ivoire, Egypt, Guinea, India, Iran (Islamic Republic of), Kuwait, Nigeria, Oman, the Syrian Arab Republic and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)

5.505 Additional allocation: in Algeria, Saudi Arabia, Bahrain, Botswana, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Chad, Viet Nam and Yemen, the frequency band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC 19)

5.506 The band 14-14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.

5.506A In the band 14-14.5 GHz, ship earth stations with an e.i.r.p. greater than 21 dBW shall operate under the same conditions as earth stations located on board vessels, as provided in Resolution 902 (WRC-03). This footnote shall not apply to ship earth stations for which the complete Appendix 4 information has been received by the Bureau prior to 5 July 2003. (WRC-03)

5.506B Earth stations located on board vessels communicating with space stations in the fixed-satellite service may operate in the frequency band 14-14.5 GHz without the need for prior agreement from Cyprus and Malta, within the minimum distance given in Resolution 902 (WRC-03) from these countries. (WRC-15)

5.508 Additional allocation: in Germany, France, Italy, Libya, North Macedonia and the United Kingdom, the frequency band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC 19)

5.508A In the frequency band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, China, Côte d'Ivoire, Egypt, France, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0,

unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)

5.509A In the frequency band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Morocco, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom, Sri Lanka, Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)

5.509B The use of the frequency bands 14.5-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.5-14.8 GHz in countries listed in Resolution 164 (WRC-15) by the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service is limited to geostationary-satellites. (WRC-15)

5.509C For the use of the frequency bands 14.5-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.5-14.8 GHz in countries listed in Resolution 164 (WRC-15) by the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service, the fixed-satellite service earth stations shall have a minimum antenna diameter of 6 m and a maximum power spectral density of -44.5 dBW/Hz at the input of the antenna. The earth stations shall be notified at known locations on land. (WRC-15)

5.509D Before an administration brings into use an earth station in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service in the frequency bands 14.5-14.75 GHz (in countries listed in Resolution 163 (WRC-15)) and 14.5-14.8 GHz (in countries listed in Resolution 164 (WRC-15)), it shall ensure that the power flux-density produced by this earth station does not exceed -151.5 dB(W/(m^2 · 4 kHz)) produced at all altitudes from 0 m to 19 000 m above sea level at 22 km seaward from all coasts, defined as the low-water mark, as officially recognized by each coastal State. (WRC-15)

5.509E In the frequency bands 14.50-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.50-14.8 GHz in countries listed in Resolution 164 (WRC-15), the location of earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall maintain a separation distance of at least 500 km from the border(s) of other countries unless shorter distances are explicitly agreed by those administrations. No. 9.17 does not apply. When applying this provision, administrations should consider the relevant parts of these Regulations and the latest relevant ITU-R Recommendations. (WRC-15)

5.509F In the frequency bands 14.50-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.50-14.8 GHz in countries listed in Resolution 164 (WRC-15), earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall not constrain the future deployment of the fixed and mobile services. (WRC-15)

5.509G The frequency band 14.5-14.8 GHz is also allocated to the space research service on a primary basis. However, such use is limited to the satellite systems operating in the space research service (Earth-to-space) to relay data to space

stations in the geostationary-satellite orbit from associated earth stations. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services and in the fixed satellite service limited to feeder links for the broadcasting-satellite service and associated space operations functions using the guardbands under Appendix 30A and feeder links for the broadcasting-satellite service in Region 2. Other uses of this frequency band by the space research service are on a secondary basis. (WRC-15)

5.510 Except for use in accordance with Resolution 163 (WRC-15) and Resolution 164 (WRC-15), the use of the frequency band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe. Uses other than feeder links for the broadcasting-satellite service are not authorized in Regions 1 and 2 in the frequency band 14.75-14.8 GHz. (WRC-15)

5.511 Additional allocation: in Saudi Arabia, Bahrain, Cameroon, Egypt, the United Arab Emirates, Guinea, Iran (Islamic Republic of), Iraq, Israel, , Kuwait, Lebanon, Pakistan, Qatar, the Syrian Arab Republic and Somalia, the band 15.35-15.4 GHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-12)

5.511A Use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. 9.11A. (WRC-15)

5.511C Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340-0. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. 4.10 applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU-R S.1340-0. (WRC-15)

5.511D SUP (WRC-12)

5.511E In the frequency band 15.4-15.7 GHz, stations operating in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the aeronautical radionavigation service. (WRC-12)

5.511F In order to protect the radio astronomy service in the frequency band 15.35-15.4 GHz, radiolocation stations operating in the frequency band 15.4-15.7 GHz shall not exceed the power flux-density level of −156 dB(W/m^2) in a 50 MHz bandwidth in the frequency band 15.35-15.4 GHz, at any radio astronomy observatory site for more than 2 per cent of the time. (WRC-12)

5.512 Additional allocation: in Algeria, Saudi Arabia, Austria, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Congo (Rep. of the), Egypt, El Salvador, the United Arab Emirates, Eritrea, Finland, Guatemala, India, Indonesia, Iran (Islamic Republic of), Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Montenegro, Nepal, Nicaragua, Niger, Oman, Pakistan, Qatar, Syrian Arab Republic, the Dem. Rep. of the Congo, Singapore, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the frequency band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-15)

5.513 Additional allocation: in Israel, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. These services shall not claim

protection from or cause harmful interference to services operating in accordance with the Table in countries other than those included in No. 5.512.

5.513A Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis. (WRC-97)

5.514 Additional allocation: in Algeria, Saudi Arabia, Bahrain, Bangladesh, Cameroon, El Salvador, the United Arab Emirates, Guatemala, India, Iran (Islamic Republic of), Iraq, Israel, Italy, Japan, Jordan, Kuwait, Libya, Lithuania, Nepal, Nicaragua, Nigeria, Oman, Uzbekistan, Pakistan, Qatar, Kyrgyzstan, Sudan and South Sudan, the frequency band 17.3-17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. 21.3 and 21.5 shall apply. (WRC-15)

5.516 The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 17.3-17.8 GHz in Region 2 by systems in the fixed-satellite service (Earth-to-space) is limited to geostationary satellites. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article 11. The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. 5.43A does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.516A In the band 17.3-17.7 GHz, earth stations of the fixed-satellite service (space-to-Earth) in Region 1 shall not claim protection from the broadcasting-satellite service feeder-link earth stations operating under Appendix 30A, nor put any limitations or restrictions on the locations of the broadcasting-satellite service feeder-link earth stations anywhere within the service area of the feeder link. (WRC-03)

5.516B The following bands are identified for use by high-density applications in the fixed-satellite service:

17.3-17.7 GHz (space-to-Earth) in Region 1,
18.3-19.3 GHz (space-to-Earth) in Region 2,
19.7-20.2 GHz (space-to-Earth) in all Regions,
39.5-40 GHz (space-to-Earth) in Region 1,
40-40.5 GHz (space-to-Earth) in all Regions,
40.5-42 GHz (space-to-Earth) in Region 2,
47.5-47.9 GHz (space-to-Earth) in Region 1,
48.2-48.54 GHz (space-to-Earth) in Region 1,
49.44-50.2 GHz (space-to-Earth) in Region 1,

and
27.5-27.82 GHz (Earth-to-space) in Region 1,
28.35-28.45 GHz (Earth-to-space) in Region 2,
28.45-28.94 GHz (Earth-to-space) in all Regions,
28.94-29.1 GHz (Earth-to-space) in Region 2 and 3,
29.25-29.46 GHz (Earth-to-space) in Region 2,
29.46-30 GHz (Earth-to-space) in all Regions,
48.2-50.2 GHz (Earth-to-space) in Region 2.

This identification does not preclude the use of these frequency bands by other fixed-satellite service applications or by other services to which these frequency bands are allocated on a co-primary basis and does not establish priority in these Radio Regulations among users of the frequency bands. Administrations should take this into account when considering regulatory provisions in relation to these frequency bands. See Resolution 143 (Rev.WRC-19). (WRC-19)

5.517A The operation of earth stations in motion communicating with geostationary fixed-satellite service space stations within the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) shall be subject to the application of Resolution 169 (WRC-19). (WRC-19)

5.519 Additional allocation: the bands 18-18.3 GHz in Region 2 and 18.1-18.4 GHz in Regions 1 and 3 are also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Their use is limited to geostationary satellites. (WRC-07)

5.520 The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of geostationary-satellite systems in the broadcasting-satellite service. (WRC-2000)

5.521 Alternative allocation: in the United Arab Emirates and Greece, the frequency band 18.1-18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis (see No. 5.33). The provisions of No. 5.519 also apply. (WRC-15)

5.522A The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. 21.5A and 21.16.2, respectively. (WRC-2000)

5.522B The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km. (WRC-2000)

5.522C In the band 18.6-18.8 GHz, in Algeria, Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, the Libyan Arab Jamahiriya, Jordan, Lebanon, Morocco, Oman, Qatar, the Syrian Arab Republic, Tunisia and Yemen, fixed-service systems in operation at the date of entry into force of the Final Acts of WRC-2000 are not subject to the limits of No. 21.5A. (WRC-2000)

5.523A The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. 9.11A and No. 22.2 does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. 9.11A with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause

unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix 4 notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

5.523B The use of the band 19.3-19.6 GHz (Earth-to-space) by the fixed-satellite service is limited to feeder links for non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. 9.11A, and No. 22.2 does not apply.

5.523C No. 22.2 shall continue to apply in the bands 19.3-19.6 GHz and 29.1-29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix 4 coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

5.523D The use of the band 19.3-19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of No. 9.11A, but not subject to the provisions of No. 22.2. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. 5.523C and 5.523E, is not subject to the provisions of No. 9.11A and shall continue to be subject to Articles 9 (except No. 9.11A) and 11 procedures, and to the provisions of No. 22.2. (WRC-97)

5.523E No. 22.2 shall continue to apply in the bands 19.6-19.7 GHz and 29.4-29.5 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix 4 coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997. (WRC-97)

5.524 Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Chad, Togo and Tunisia, the frequency band 19.7-21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the frequency band 19.7-21.2 GHz and of space stations in the mobile-satellite service in the frequency band 19.7-20.2 GHz where the allocation to the mobile-satellite service is on a primary basis in the latter frequency band. (WRC-15)

5.525 In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.

5.526 In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

5.527 In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. 4.10 do not apply with respect to the mobile-satellite service.

5.527A The operation of earth stations in motion communicating with the FSS is subject to Resolution 156 (WRC-15). (WRC-15)

5.528 The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. 5.524.

5.530A Unless otherwise agreed between the administrations concerned, any station in the fixed or mobile services of an administration shall not produce a power flux-density in excess of -120.4 dB(W/(m2 · MHz)) at 3 m above the ground of any point of the territory of any other administration in Regions 1 and 3 for more than 20% of the time. In conducting the calculations, administrations should use the most recent version of Recommendation ITU-R P.452 (see also the most recent version of Recommendation ITU-R BO.1898). (WRC-15)

5.530B In the band 21.4-22 GHz, in order to facilitate the development of the broadcasting satellite service, administrations in Regions 1 and 3 are encouraged not to deploy stations in the mobile service and are encouraged to limit the deployment of stations in the fixed service to point to-point links. (WRC-12)

5.532 The use of the band 22.21-22.5 GHz by the Earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.

5.532A The location of earth stations in the space research service shall maintain a separation distance of at least 54 km from the respective border(s) of neighbouring countries to protect the existing and future deployment of fixed and mobile services unless a shorter distance is otherwise agreed between the corresponding administrations. Nos. 9.17 and 9.18 do not apply. (WRC 12)

5.532AB The frequency band 24.25-27.5 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution 242 (WRC-19) applies. (WRC-19)

5.532B Use of the band 24.65-25.25 GHz in Region 1 and the band 24.65-24.75 GHz in Region 3 by the fixed-satellite service (Earth-to-space) is limited to earth stations using a minimum antenna diameter of 4.5 m. (WRC-12)

5.534A The allocation to the fixed service in the frequency band 25.25-27.5 GHz is identified in Region 2 for use by high-altitude platform stations (HAPS) in accordance with the provisions of Resolution 166 (WRC 19). Such use of the fixed-service allocation by HAPS shall be limited to the ground-to-HAPS direction in the frequency band 25.25-27.0 GHz and to the HAPS-to-ground direction in the frequency band 27.0-27.5 GHz. Furthermore, the use of the frequency band 25.5-27.0 GHz by HAPS shall be limited to gateway links. This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. (WRC 19)

5.535A The use of the band 29.1-29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-

geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. 9.11A, but not subject to the provisions of No. 22.2, except as indicated in Nos. 5.523C and 5.523E where such use is not subject to the provisions of No. 9.11A and shall continue to be subject to Articles 9 (except No. 9.11A) and 11 procedures, and to the provisions of No. 22.2. (WRC-97)

5.536 Use of the 25.25-27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

5.536A Administrations operating earth stations in the Earth exploration-satellite service or the space research service shall not claim protection from stations in the fixed and mobile services operated by other administrations. In addition, earth stations in the Earth exploration-satellite service or in the space research service should be operated taking into account the most recent version of Recommendation ITU-R SA.1862. Resolution 242 (WRC-19) applies. (WRC-19)

5.536B In Algeria, Saudi Arabia, Austria, Bahrain, Belgium, Brazil, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Estonia, Finland, Hungary, India, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Dem. People's Rep. of Korea, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Slovenia, Sudan, Sweden, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the frequency band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. Resolution 242 (WRC 19) applies. (WRC 19)

5.536C In Algeria, Saudi Arabia, Bahrain, Botswana, Brazil, Cameroon, Comoros, Cuba, Djibouti, Egypt, United Arab Emirates, Estonia, Finland, Iran (Islamic Republic of), Israel, Jordan, Kenya, Kuwait, Lithuania, Malaysia, Morocco, Nigeria, Oman, Qatar, Syrian Arab Republic, Somalia, Sudan, South Sudan, Tanzania, Tunisia, Uruguay, Zambia and Zimbabwe, earth stations operating in the space research service in the band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. (WRC-12)

5.537A In Bhutan, Cameroon, China, Korea (Rep. of), the Russian Federation, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Malaysia, Maldives, Mongolia, Myanmar, Uzbekistan, Pakistan, the Philippines, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the frequency band 27.9-28.2 GHz may also be used by high altitude platform stations (HAPS) within the territory of these countries. Such use of 300 MHz of the fixed-service allocation by HAPS in the above countries is further limited to operation in the HAPS-to-ground direction and shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems or other co-primary services. Furthermore, the development of these other services shall not be constrained by HAPS. See Resolution 145 (Rev.WRC-19). (WRC-19)

5.538 Additional allocation: the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power

(e.i.r.p.) of ±10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. (WRC-07)

5.539 The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

5.540 Additional allocation: the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

5.541 In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

5.541A Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix 4 coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix 4 information for coordination before this date are encouraged to utilize these techniques to the extent practicable. (WRC-2000)

5.542 Additional allocation: in Algeria, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Oman, Pakistan, Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Somalia, Sudan, South Sudan Sri Lanka and Chad, the band 29.5-31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 21.3 and 21.5 shall apply. (WRC-12)

5.543 The band 29.95-30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.

5.543B The allocation to the fixed service in the frequency band 31-31.3 GHz is identified for worldwide use by high-altitude platform stations (HAPS). This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution 167 (WRC-19). (WRC-19)

5.544 In the band 31-31.3 GHz the power flux-density limits specified in Article 21, Table 21-4 shall apply to the space research service.

5.545 Different category of service: in Armenia, Georgia, Mongolia, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 31-31.3 GHz to the space research service is on a primary basis (see No. 5.33). (WRC-07)

5.546 Different category of service: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Egypt, the United Arab Emirates, Spain, Estonia, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Israel, Jordan, Lebanon, Moldova, Mongolia, Oman, Uzbekistan, Poland, the Syrian Arab Republic, Kyrgyzstan, Romania, the United Kingdom, South Africa, Tajikistan,

Turkmenistan and Turkey, the allocation of the frequency band 31.5-31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 5.33). (WRC-19)

5.547 The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution 75 (WRC-2000)). Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the bands 39.5-40 GHz and 40.5-42 GHz (see No. 5.516B), administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate. (WRC-07)

5.547A Administrations should take practical measures to minimize the potential interference between stations in the fixed service and airborne stations in the radionavigation service in the 31.8-33.4 GHz band, taking into account the operational needs of the airborne radar systems. (WRC-2000)

5.547B Alternative allocation: in the United States, the band 31.8-32 GHz is allocated to the radionavigation and space research (deep space) (space-to-Earth) services on a primary basis. (WRC-97)

5.547C Alternative allocation: in the United States, the band 32-32.3 GHz is allocated to the radionavigation and space research (deep space) (space-to-Earth) services on a primary basis. (WRC-03)

5.547D Alternative allocation: in the United States, the band 32.3-33 GHz is allocated to the inter-satellite and radionavigation services on a primary basis. (WRC-97)

5.547E Alternative allocation: in the United States, the band 33-33.4 GHz is allocated to the radionavigation service on a primary basis. (WRC-97)

5.548 In designing systems for the inter-satellite service in the band 32.3-33 GHz, for the radionavigation service in the band 32-33 GHz, and for the space research service (deep space) in the band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation 707). (WRC-03)

5.549 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, , Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Singapore, Somalia, Sudan, South Sudan Sri Lanka, Togo, Tunisia and Yemen, the band 33.4-36 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-12)

5.549A In the band 35.5-36.0 GHz, the mean power flux-density at the Earth's surface, generated by any spaceborne sensor in the Earth exploration-satellite service (active) or space research service (active), for any angle greater than 0.8° from the beam centre shall not exceed −73.3 dB(W/m^2) in this band. (WRC-03)

5.550 Different category of service: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, , Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 34.7-35.2 GHz to the space research service is on a primary basis (see No. 5.33). (WRC-12)

5.550A For sharing of the band 36-37 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile services, Resolution 752 (WRC-07) shall apply. (WRC-07)

5.550B The frequency band 37-43.5 GHz, or portions thereof, is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Because of the potential deployment of FSS earth stations within the frequency range 37.5-42.5 GHz and high-density applications in the fixed-satellite service in the frequency bands 39.5-40 GHz in Region 1, 40-40.5 GHz in all Regions and 40.5-42 GHz in Region 2 (see No. 5.516B), administrations should further take into account potential constraints to IMT in these frequency bands, as appropriate. Resolution 243 (WRC-19) applies. (WRC-19)

5.550C The use of the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space to Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) by a non-geostationary satellite system in the fixed-satellite service is subject to the application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite service but not with non-geostationary-satellite systems in other services. Resolution 770 (WRC 19) shall also apply, and No. 22.2 shall continue to apply. (WRC 19)

5.550D The allocation to the fixed service in the frequency band 38-39.5 GHz is identified for worldwide use by administrations wishing to implement high-altitude platform stations (HAPS). In the HAPS-to-ground direction, the HAPS ground station shall not claim protection from stations in the fixed, mobile and fixed-satellite services; and No. 5.43A does not apply. This identification does not preclude the use of this frequency band by other fixed-service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. Furthermore, the development of the fixed-satellite, fixed and mobile services shall not be unduly constrained by HAPS. Such use of the fixed-service allocation by HAPS shall be in accordance with the provisions of Resolution 168 (WRC-19). (WRC-19)

5.550E The use of the frequency bands 39.5-40 GHz and 40-40.5 GHz by non-geostationary-satellite systems in the mobile-satellite service (space-to-Earth) and by non-geostationary-satellite systems in the fixed-satellite service (space-to-Earth) is subject to the application of the provisions of No. 9.12 for coordination with other non-geostationary-satellite systems in the fixed-satellite and mobile-satellite services but not with non-geostationary-satellite systems in other services. No. 22.2 shall continue to apply for non-geostationary-satellite-systems. (WRC-19)

5.551F Different category of service: in Japan, the allocation of the band 41.5-42.5 GHz to the mobile service is on a primary basis (see No. 5.33). (WRC-97)

5.551G SUP (WRC-03)

5.551H The equivalent power flux-density (epfd) produced in the frequency band 42.5-43.5 GHz by all space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth), or in the broadcasting-satellite service operating in the frequency band 42-42.5 GHz, shall not exceed the following values at the site of any radio astronomy station for more than 2% of the time:

- 230 dB(W/m^2) in 1 GHz and –246 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a single-dish telescope; and

– 209 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a very long baseline interferometry station.

These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631-0 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle θ_{min} of the radiotelescope (for which a default value of 5° should be adopted in the absence of notified information).

These values shall apply at any radio astronomy station that either:

– was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or

– was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply.

Other radio astronomy stations notified after these dates may seek an agreement with administrations that have authorized the space stations. In Region 2, Resolution 743 (WRC-03) shall apply. The limits in this footnote may be exceeded at the site of a radio astronomy station of any country whose administration so agreed. (WRC-15)

5.551I The power flux-density in the band 42.5-43.5 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth), or the broadcasting-satellite service operating in the 42-42.5 GHz band, shall not exceed the following values at the site of any radio astronomy station:

– 137 dB(W/m^2) in 1 GHz and –153 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a single-dish telescope; and

– 116 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a very long baseline interferometry station.

These values shall apply at the site of any radio astronomy station that either:

– was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or

– was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply.

Other radio astronomy stations notified after these dates may seek an agreement with administrations that have authorized the space stations. In Region 2, Resolution 743 (WRC-03) shall apply. The limits in this footnote may be exceeded at the site of a radio astronomy station of any country whose administration so agreed. (WRC-03)

5.552 The allocation of the spectrum for the fixed-satellite service in the bands 42.5-43.5 GHz and 47.2-50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5-39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5-42.5 GHz.

5.552A The allocation to the fixed service in the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz is identified for use by high-altitude platform stations (HAPS). This

identification does not preclude the use of this frequency band by any application of the services to which it is allocated on a co-primary basis, and does not establish priority in the Radio Regulations. Such use of the fixed-service allocation in the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz by HAPS shall be in accordance with the provisions of Resolution 122 (Rev.WRC-19). (WRC-19)

5.553 In the bands 43.5-47 GHz and 66-71 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. 5.43). (WRC-2000)

5.553A In Algeria, Angola, Bahrain, Belarus, Benin, Botswana, Brazil, Burkina Faso, Cabo Verde, Korea (Rep. of), Côte d'Ivoire, Croatia, United Arab Emirates, Estonia, Eswatini, Gabon, Gambia, Ghana, Greece, Guinea, Guinea-Bissau, Hungary, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lesotho, Latvia, Liberia, Lithuania, Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Qatar, Senegal, Seychelles, Sierra Leone, Slovenia, Sudan, South Africa, Sweden, Tanzania, Togo, Tunisia, Zambia and Zimbabwe, the frequency band 45.5-47 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT), taking into account No. 5.553. With respect to the aeronautical mobile service and radionavigation service, the use of this frequency band for the implementation of IMT is subject to agreement obtained under No. 9.21 with concerned administrations and shall not cause harmful interference to, or claim protection from these services. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution 244 (WRC-19) applies. (WRC-19)

5.553B In Region 2 and Algeria, Angola, Saudi Arabia, Australia, Bahrain, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Rep., Comoros, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lesotho, Liberia, Libya, Lithuania, Madagascar, Malaysia, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Singapore, Slovenia, Somalia, Sudan, South Sudan, South Africa, Sweden, Tanzania, Chad, Togo, Tunisia, Zambia and Zimbabwe, the frequency band 47.2-48.2 GHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated, and does not establish any priority in the Radio Regulations. Resolution 243 (WRC 19) applies. (WRC-19)

5.554 In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 123-130 GHz, 191.8-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service. (WRC-2000)

5.554A The use of the bands 47.5-47.9 GHz, 48.2-48.54 GHz and 49.44-50.2 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary satellites. (WRC-03)

5.555A SUP (WRC-03)

5.555B The power flux-density in the band 48.94-49.04 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth) operating in the bands 48.2-48.54 GHz and 49.44-50.2 GHz shall not exceed –151.8 dB(W/m^2) in any 500 kHz band at the site of any radio astronomy station. (WRC-03)

5.555C The use of the frequency band 51.4-52.4 GHz by the fixed-satellite service (Earth-to-space) is limited to geostationary-satellite networks. The earth stations shall be limited to gateway earth stations with a minimum antenna diameter of 2.4 metres. (WRC-19)

5.556 In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements. (WRC-2000)

5.556A Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed –147 dB(W/(m^2 □ 100 MHz)) for all angles of arrival. (WRC-97)

5.556B Additional allocation: in Japan, the band 54.25-55.78 GHz is also allocated to the mobile service on a primary basis for low-density use. (WRC-97)

5.557 Additional allocation: in Japan, the band 55.78-58.2 GHz is also allocated to the radiolocation service on a primary basis. (WRC-97)

5.557A In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to –26 dB(W/MHz). (WRC-2000)

5.558 In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 122.25-123 GHz, 130-134 GHz, 167-174.8 GHz and 191.8-200 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 5.43). (WRC-2000)

5.558A Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed –147 dB(W/(m^2 □ 100 MHz)) for all angles of arrival. (WRC-97)

5.559 In the band 59-64 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 5.43). (WRC-2000)

5.559AA The frequency band 66-71 GHz is identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which this frequency band is allocated and does not establish priority in the Radio Regulations. Resolution 241 (WRC 19) applies. (WRC 19)

5.559B The use of the frequency band 77.5-78 GHz by the radiolocation service shall be limited to short-range radar for ground-based applications, including automotive radars. The technical characteristics of these radars are provided in the most

recent version of Recommendation ITU-R M.2057. The provisions of No. 4.10 do not apply. (WRC-15)

5.560 In the band 78-79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.

5.561 In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service. (WRC-2000)

5.561A The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (WRC-2000)

5.561B In Japan, use of the band 84-86 GHz, by the fixed-satellite service (Earth-to-space) is limited to feeder links in the broadcasting-satellite service using the geostationary-satellite orbit. (WRC-2000)

5.562 The use of the band 94-94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars. (WRC-97)

5.562A In the bands 94-94.1 GHz and 130-134 GHz, transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible. (WRC-2000)

5.562B In the frequency bands 105-109.5 GHz, 111.8-114.25 GHz and 217-226 GHz, the use of this allocation is limited to space-based radio astronomy only. (WRC-19)

5.562C Use of the band 116-122.25 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed –148 dB(W/(m2 · MHz)) for all angles of arrival. (WRC-2000)

5.562D Additional allocation: In Korea (Rep. of), the frequency bands 128-130 GHz, 171-171.6 GHz, 172.2-172.8 GHz and 173.3-174 GHz are also allocated to the radio astronomy service on a primary basis. Radio astronomy stations in Korea (Rep. of) operating in the frequency bands referred to in this footnote shall not claim protection from, or constrain the use and development of, services in other countries operating in accordance with the Radio Regulations. (WRC-15)

5.562E The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz. (WRC-2000)

5.562F SUP (WRC-19)

5.562G SUP (WRC-19)

5.562H Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions

occupied by passive sensors, shall not exceed 144 dB(W/(m2 · MHz)) for all angles of arrival. (WRC-2000)

5.563 SUP (WRC-03)

5.563A In the bands 200-209 GHz, 235-238 GHz, 250-252 GHz and 265-275 GHz, ground-based passive atmospheric sensing is carried out to monitor atmospheric constituents. (WRC-2000)

5.563B The band 237.9-238 GHz is also allocated to the Earth exploration-satellite service (active) and the space research service (active) for spaceborne cloud radars only. (WRC-2000)

5.564 SUP (WRC-2000)

5.564A For the operation of fixed and land mobile service applications in frequency bands in the range 275-450 GHz:

The frequency bands 275-296 GHz, 306-313 GHz, 318-333 GHz and 356-450 GHz are identified for use by administrations for the implementation of land mobile and fixed service applications, where no specific conditions are necessary to protect Earth exploration-satellite service (passive) applications.

The frequency bands 296-306 GHz, 313-318 GHz and 333-356 GHz may only be used by fixed and land mobile service applications when specific conditions to ensure the protection of Earth exploration-satellite service (passive) applications are determined in accordance with Resolution 731 (Rev.WRC-19).

In those portions of the frequency range 275-450 GHz where radio astronomy applications are used, specific conditions (e.g. minimum separation distances and/or avoidance angles) may be necessary to ensure protection of radio astronomy sites from land mobile and/or fixed service applications, on a case-by-case basis in accordance with Resolution 731 (Rev.WRC-19).

The use of the above-mentioned frequency bands by land mobile and fixed service applications does not preclude use by, and does not establish priority over, any other applications of radio services in the range of 275-450 GHz. (WRC 19)

5.565 The following frequency bands in the range 275-1 000 GHz are identified for use by administrations for passive service applications:

- radio astronomy service: 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz and 926-945 GHz;
- Earth exploration-satellite service (passive) and space research service (passive): 275-286 GHz,
  296-306 GHz, 313-356 GHz, 361-365 GHz, 369-392 GHz, 397-399 GHz, 409-411 GHz,
  416-434 GHz, 439-467 GHz, 477-502 GHz, 523-527 GHz, 538-581 GHz, 611-630 GHz,
  634-654 GHz, 657-692 GHz, 713-718 GHz, 729-733 GHz, 750-754 GHz, 771-776 GHz,
  823-846 GHz, 850-854 GHz, 857-862 GHz, 866-882 GHz, 905-928 GHz, 951-956 GHz,
  968-973 GHz and 985-990 GHz.

The use of the range 275-1 000 GHz by the passive services does not preclude use of this range by active services. Administrations wishing to make frequencies in the 275-1 000 GHz range available for active service applications are urged to take all practicable steps to protect these passive services from harmful interference until the date when the Table of Frequency Allocations is established in the above-mentioned 275-1 000 GHz frequency range.

All frequencies in the range 1 000-3 000 GHz may be used by both active and passive services. (WRC-12)

Annex B: RR Footnotes Containing Explicit References to East African country names

RR footnote	BDI	COD	KEN	RRW	SSD	TZA	UGA	Total
5.54B								0
5.67B					X			1
5.68		X						1
5.69		X						1
5.70	X		X			X		3
5.80A								0
5.80B								0
5.87								0
5.93		X						1
5.98								0
5.99								0
5.107								0
5.117								0
5.123								0
5.128								0
5.133								0
5.140								0
5.141								0
5.141B					X			1
5.143C					X			1
5.152								0
5.156								0
5.160	X			X				2
5.164		X						1
5.165					X	X		2
5.169				X				1
5.169A	X		X		X	X	X	5

RR footnote	BDI	COD	KEN	RRW	SSD	TZA	UGA	Total
5.169B								0
5.171				X				1
5.181								0
5.194								0
5.201								0
5.202								0
5.206								0
5.211		X	X			X		3
5.212				X			X	2
5.214		X	X		X	X		4
5.221			X			X	X	3
5.225A								0
5.228AC								0
5.229		X						1
5.237								0
5.243								0
5.246								0
5.251								0
5.252								0
5.259								0
5.262								0
5.274								0
5.275								0
5.276		X	X					2
5.277				X				1
5.286E								0
5.294		X						1
5.296	X		X	X		X	X	5

RR footnote	BDI	COD	KEN	RRW	SSD	TZA	UGA	Total
5.300								0
5.322	X					X		2
5.330					X			1
5.331	X	X	X		X			4
5.346	X		X	X	X	X	X	6
5.349								0
5.352A		X						0
5.355					X			1
5.359							X	1
5.369					X			1
5.379		X						1
5.382								0
~~5.388~~								~~0~~
5.388B			X		X	X	X	4
5.389F								0
5.401		X						1
5.422		X						1
5.429			X				X	2
5.429A	X	X		X	X	X		5
5.429B	X		X	X	X	X	X	7
5.441B	X		X			X	X	4
5.446C					X			1
5.447		X						1
5.453	X		X	X	X	X	X	6
5.457								0
5.457B		X						1
5.468	X		X				X	3
5.471								0

RR footnote	BDI	COD	KEN	RRW	SSD	TZA	UGA	Total
5.474A								0
5.477					X		X	2
5.481			X					1
5.482								0
5.483		X						1
5.494					X			1
5.495							X	1
5.500					X			1
5.504B								1
5.504C		X						1
5.505					X			1
5.508								0
5.508A								0
5.509A								0
5.511		X						1
5.512			X		X			2
5.514					X			1
5.522C		X						0
5.524					X			1
5.536B			X			X	X	3
5.536C			X		X	X		3
5.537A		X						0
5.542					X			1
5.546								0
5.549					X			1
5.553A		X				X		2
5.553B	X	x	X	X	X	X	X	6
Total	13	23	20	11	27	18	16	131

Annex C: East African countries and their orbital positions in the satellite planned bands

Satellite orbital slots relevant to African countries pertaining to Appendix 30 (BSS), Appendix 30A (BSS Feeder Links) and Appendix 30B (FSS):

Appendix 30: Provisions for all services and associated Plans and List for the broadcasting-satellite service in the frequency band 11.7-12.5 GHz (in Region 1)

Appendix 30A: Provisions and associated Plans and List for feeder links for the broadcasting satellite service (11.7-12.5 GHz in Region 1) in the frequency bands 14.5-14.8 GHz and 17.3-18.1 GHz in Regions 1

Appendix 30B: Provisions and associated Plan for the fixed-satellite service in the frequency bands 4 500-4 800 MHz, 6 725-7 025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz

Table 1: Orbital position of assignments in the Appendices 30 and 30A Plans and of allotments in the Appendix 30B Plan

No.	ITU Member State Name	Adm	APP30/30A Orbital slot	APP30B Orbital slot
1	Burundi	BDI	11°E	3.5°W
2	Congo (Rep. of the)	COG	13.2°W	16.35°W
3	Kenya	KEN	0.8°W	78.2°E
4	Rwanda	RRW	11°E	17.6°E
5	South Sudan[7]	SSD	-	-
6	Tanzania	TZA	11°E	67.5°E
7	Uganda	UGA	17°E	31.5°E

Table 2: Satellite networks submitted under Resolution 559 (WRC-19) from EAC Member States

No.	Adm	Sat.name	Orb.Pos. [°E]	Channels (downlink) (11.7 – 12.5 GHz)	Pol. DL	Channels (feeder-link) (17.3 – 18.1 GHz)	Pol. FL
1	BDI	BDI_SAT	-26.8	21 23 25 27 29 31 33 35 37 39	CL	22 24 26 28 30 32 34 36 38 40	CR
2	COG	COG_SAT	-37.3	1 3 5 7 9 11 13 15 17 19	CR	2 4 6 8 10 12 14 16 18 20	CL
3	KEN	KEN_SAT_001	-9.2	2 4 6 8 10 12 14 16 18 20	CL	21 23 25 27 29 31 33 35 37 39	CL
4	RRW	BSS-RRW	-9.2	1 3 5 7 9 11 13 15 17 19	CR	22 24 26 28 30 32 34 36 38 40	CR

[7] Administration of Republic of South Sudan is currently applying relevant procedures to obtain an assignment in the BSS Plan (Appendix 30/30A) and a new allotment in the FSS Plan (Appendix 30B)

No.	Adm	Sat.name	Orb.Pos. [°E]	Channels (downlink) (11.7 – 12.5 GHz)	Pol. DL	Channels (feeder-link) (17.3 – 18.1 GHz)	Pol. FL
5	SDN	SUDANBSS	-16	1 3 5 7 9 11 13 15 17 19	CR	2 4 6 8 10 12 14 16 18 20	CL
6	SSD	SSUD_SAT	-23.9	1 3 5 7 9 11 13 15 17 19	CL	2 4 6 8 10 12 14 16 18 20	CR
7	TZA	TANSAT1	-16	1 3 5 7 9 11 13 15 17 19	CL	22 24 26 28 30 32 34 36 38 40	CR
29	UGA	UGASAT	-26.6	1 3 5 7 9 11 13 15 17 19	CR	1 3 5 7 9 11 13 15 17 19	CL

Table 3: Satellite networks submitted under Article 4 of Appendices 30 and 30A

Adm	Ntc.ID	Sat.name	Orb.Pos. [°E]	E/R	Freq.min. [MHz]	Freq.max. [MHz]	Status
ALG	113552013	ALGBSAT-24.8W	-24.8	E	12142	12498	Part B
ALG	113554013	ALGBSAT-24.8W	-24.8	R	17742	18098	Part B
EGY	114552009	EGYNILE1-BSS	-7	E	11710.98	12492	Part A
EGY	114554009	EGYNILE1-BSS	-7	R	14508.8	18092	Part A
EGY	114552010	EGYNILE2-BSS	-19	E	11710.98	12492	Part A
EGY	114554010	EGYNILE2-BSS	-19	R	14508.8	18092	Part A
EGY	114552011	EGYNILE3-BSS	15	E	11710.98	12492	Part A
EGY	114554011	EGYNILE3-BSS	15	R	14508.8	18092	Part A
EGY	99552001	NILESAT-102	-7	E	11845.24	12319.38	Part B
EGY	99554001	NILESAT-102	-7	R	17445.24	17919.38	Part B
EGY	105552004	NILESAT-103	-7	E	11710.98	12492	Part B
EGY	105554004	NILESAT-103	-7	R	17310.98	18072.82	Part B
EGY	100551013	NILESAT-1S	-7	E	11730.16	12089.22	Part B
EGY	100551613	NILESAT-1S	-7	R	17330.16	17689.22	Part B
EGY	119552002	NILESAT-BSS-Z	-7	E	11710.98	12472.82	Part A
EGY	119554002	NILESAT-BSS-Z	-7	R	14508.8	18072.82	Part A
ETH	116552010	ETHIOSAT-1	58.3	E	11710.98	12492	Part A
ETH	116554010	ETHIOSAT-1	58.3	R	14508.8	18092	Part A

TUN	120552063	TUN_BSS1	-37.3	E	12346.92	12450.64	Part A
TUN	120554063	TUN_BSS1	-37.3	R	17927.74	18031.46	Part A

Table 4: Satellite networks submitted under Article 6 and 7 of Appendix 30B

Adm	Ntc.ID	Sat.name	Orb.Pos. [°E]	E/R	Freq.min. [MHz]	Freq.max. [MHz]	Status
CTI	103559025	RASCOM-1F	2.9	E	4500	4800	A6B
				E	10700	11450	A6B
				R	12750	13250	A6B
				R	6725	7025	A6B
CTI	102559002	RASCOM-2F	2.9	E	10700	11450	A6B
				E	4500	4800	A6B
				R	12750	13250	A6B
				R	6725	7025	A6B
ETH	116559011	ETHIOSAT-1	58.3	E	10700	11450	A6A
				E	4500	4800	A6A
				R	6725	7025	A6A
				R	12750	13250	A6A
SSD	120559038	SSD00000[8]	-23.9	E	4500	4800	A6A
				E	10700	11450	A6A
				R	12750	13250	A6A
				R	6725	7025	A6A

[8] This submission is to obtain an allotment in the FSS Plan for the Administration of South Sudan.

Annex D: Satellite Planned Bands relevant to African countries

Satellite frequency bands relevant to African countries pertaining to Appendix 30 (BSS) and Appendix 30A (BSS Feeder Links):

- APP30: 11.7 – 12.5 GHz (all countries)
- APP30A: 14.5 – 14.8 GHz (AFS, CME, ETH, GHA, MOZ, NIG, NMB, SDN, SEN, SOM, SEY and TGO)
  17.3 – 18.1 GHz (AGL, ALG, BDI, BEN, BFA, BOT, CAF, COD, COG, COM, CPV, CTI, DJI, EGY, ERI, GAB, GMB, GNB, GNE, GUI, KEN, LBR, LBY, LSO, MAU, MDG, MLI, MRC, MTN, MWI, NGR, RRW, SEY, SRL, STP, SWZ, TCD, TUN, TZA, UGA, ZMB and ZWE)

Satellite frequency bands relevant to African countries pertaining to Appendix 30B (FSS):

- APP30B: 4500 – 4800 MHz (all countries), space-to-Earth
  6725 – 7025 MHz (all countries), Earth-to-space
  10.7 – 10.95 GHz (all countries), space-to-Earth
  11.2 – 11.45 GHz (all countries), space-to-Earth
  12.75 – 13.25 GHz (all countries), Earth-to-spa

Annex E: Spectrum Bands Identified for IMT

The following bands are identified for IMT in all or some African countries. The identification does not necessarily preclude the use of these frequency bands by any application of the services to compatible to IMT:

No.	Band	RR Footnote	Resolution	Region
1	450 - 470 MHz	5.286AA	Res. 224 (Rev. WRC-19)	All Regions
2	694 - 790 MHz	5.317A	Res. 224 (Rev. WRC-19) Res. 760 (Rev. WRC-19) Res. 749 (Rev. WRC-19)	Regions 1 and 2. Starts at 698 MHz in Region 2
3	790 - 960 MHz	5.317A	Res. 224 (Rev. WRC-19) Res. 760 (Rev. WRC-19) Res. 749 (Rev. WRC-19)	All Regions
4	1 427 - 1 452 MHz	5.341A	Res. 223 (Rev. WRC-19)	Region 1
5	1 452 - 1 492 MHz	5.346	Res. 223 (Rev. WRC-19) Res. 761 (Rev. WRC-19)	In 44 African countries[9]
6	1 492 - 1 518 MHz	5.341A	Res. 223 (Rev. WRC-19)	Region 1
7	1 710 - 1 885 MHz	5.384A	Res. 223 (Rev. WRC-19)	All Regions
8	1 885 - 2 025 MHz	5.388/5.388A [10]	Res. 212 (Rev. WRC-19) Res. 223 (Rev. WRC-19) Res. 221 (Rev. WRC-07)[6]	All Regions
9	2 010 - 2 025 MHz	5.388A[11]	Res. 221 (Rev. WRC-07)[6]	Regions 1 and 3
10	2 110 - 2 200 MHz	5.388/5.388A[11]	Res. 212 (Rev. WRC-19) Res. 223 (Rev. WRC-19) Res. 221 (Rev. WRC-07)[6]	All Regions

[9] 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, 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.

[10] This footnote permits use of the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz for high altitude platform stations as base stations to provide International Mobile Telecommunications 2000 (IMT 2000), in accordance with Resolution 221 (Rev.WRC 03). In Region 2, the bands 1 885-1 980 MHz and 2 110-2 160 MHz can be used for same.

11	2 300 - 2 400 MHz	5.384A	Res. 223 (Rev. WRC-19)	All Regions
12	2 500 - 2 690 MHz	5.384A	Res. 223 (Rev. WRC-19)	All Regions
13	3 300 - 3 400 MHz	5.429B	Res. 223 (Rev. WRC-19)	In 33 African countries[11]
14	3 400 - 3 600 MHz	5.430A	-	All Regions
15	4 800 - 4 990 MHz	5.441B	Res. 223 (Rev. WRC-19)	In 26 African countries[12]
16	24.25 - 27.5 GHz	5.532AB	Res. 242 (WRC-19)	All Regions
17	37 - 43.5 GHz	5.550B	Res. 243 (WRC-19)	All Regions
18	45.5 - 47 GHz	5.553A	Res. 244 (WRC-19)	In 35 African countries[13]
19	47.2 - 48.2 GHz	5.553B	Res. 243 (WRC-19)	In 50 African countries[14] and Region 2
20	66 - 71 GHz	5.559AA	Res. 241 (WRC-19)	All Regions

[11] In 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

[12] In Angola, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, China, Côte d'Ivoire, Djibouti, Eswatini, Russian Federation, Gambia, Guinea, Iran (Islamic Republic of), Kazakhstan, Kenya, Lao P.D.R., Lesotho, Liberia, Malawi, Mauritius, Mongolia, Mozambique, Nigeria, Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, South Africa, Tanzania, Togo, Viet Nam, Zambia and Zimbabwe

[13] In Algeria, Angola, Bahrain, Belarus, Benin, Botswana, Brazil, Burkina Faso, Cabo Verde, Korea (Rep. of), Côte d'Ivoire, Croatia, United Arab Emirates, Estonia, Eswatini, Gabon, Gambia, Ghana, Greece, Guinea, Guinea-Bissau, Hungary, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lesotho, Latvia, Liberia, Lithuania, Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Qatar, Senegal, Seychelles, Sierra Leone, Slovenia, Sudan, South Africa, Sweden, Tanzania, Togo, Tunisia, Zambia and Zimbabwe

[14] In Region 2 and Algeria, Angola, Saudi Arabia, Australia, Bahrain, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Rep., Comoros, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lesotho, Liberia, Libya, Lithuania, Madagascar, Malaysia, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Singapore, Slovenia, Somalia, Sudan, South Sudan, South Africa, Sweden, Tanzania, Chad, Togo, Tunisia, Zambia and Zimbabwe