Entwurf

Verordnung des Bundesministers für Verkehr, Innovation und Technologie betreffend die Frequenzbereichszuweisung (Frequenzbereichszuweisungsverordnung - FBZV)

Auf Grund des § 51 Abs. 2 des Bundesgesetzes, mit dem ein Telekommunikationsgesetz erlassen wird (Telekommunikationsgesetz 2003 - TKG 2003), BGBl. I Nr. 70/2003 in der Fassung BGBl. I Nr. 178/2004, wird verordnet:

Geltungsbereich

§ 1. (1) Mit dieser Verordnung werden im Frequenzbereich bis 1 000 GHz einzelnen Funkdiensten Frequenzbereiche zugewiesen.

(2) Durch diese Verordnung bleiben unberührt

1. die Rechte von Funkdiensten, die außerhalb des Bundesgebietes gemäß der einen integrierenden Bestandteil des Internationalen Fernmeldevertrages, BGBl. III Nr. 48/2003, bildenden Vollzugsordnung für den Funkdienst (VOFunk) betrieben werden, und
2. die sich aus der VOFunk ergebenden Verpflichtungen der österreichischen Funkdienste gegenüber ausländischen Funkdiensten, die gemäß der VOFunk betrieben werden.

Begriffsbestimmungen

§ 2. (1) In dieser Verordnung bezeichnet der Begriff

1. „Funkdienst“ (Radiocommunication Service) einen Dienst, der die Übermittlung, die Aussendung und/oder den Empfang von Funkwellen für bestimmte Zwecke des Fernmeldeverkehrs umfasst; falls nichts Gegenteiliges angegeben ist, bezieht sich jeder in **Anlage 1** genannte Funkdienst auf den terrestrischen Funkverkehr;
2. „Sicherheitsfunkdienst“ (Safety Service) jeden Funkdienst, der ständig oder vorübergehend wahrgenommen wird, um die Sicherheit des menschlichen Lebens und den Schutz von Sachwerten zu gewährleisten;
3. „Fester Funkdienst“ (Fixed Service) einen Funkdienst zwischen bestimmten festen Punkten;
4. „Fester Funkdienst über Satelliten“ (Fixed-Satellite Service) einen Funkdienst zwischen Erdfunkstellen an bestimmten Standorten, wenn ein oder mehrere Satelliten benutzt werden; der bestimmte Standort kann ein genau bezeichneter fester Punkt oder irgendein fester Punkt innerhalb genau bezeichneter Gebiete sein; in bestimmten Fällen umfasst dieser Funkdienst Funkverbindungen zwischen Satelliten, wobei diese Funkverbindungen auch im Intersatellitenfunkdienst betrieben werden können; der feste Funkdienst über Satelliten kann auch Speiseverbindungen für andere Weltraumfunkdienste umfassen;
5. „Intersatellitenfunkdienst“ (Inter-Satellite Service) einen Funkdienst für Funkverbindungen zwischen künstlichen Satelliten;
6. „Weltraumfernwirkfunkdienst“ (Space Operation Service) einen Funkdienst, der ausschließlich dem Betrieb der Weltraumfahrzeuge dient, insbesondere der Weltraumbahnverfolgung, dem Weltraumfernmessen und dem Weltraumfernsteuern; diese Aufgaben werden in der Regel innerhalb des Funkdienstes wahrgenommen, in dem die Weltraumfunkstelle arbeitet;
7. „Beweglicher Funkdienst“ (Mobile Service) einen Funkdienst zwischen beweglichen und ortsfesten Funkstellen oder zwischen beweglichen Funkstellen;
8. „Beweglicher Funkdienst über Satelliten“ (Mobile-Satellite Service) einen Funkdienst zwischen beweglichen Erdfunkstellen und einer oder mehreren Weltraumfunkstellen oder zwischen Weltraumfunkstellen, die für diesen Funkdienst benutzt werden oder zwischen beweglichen Erdfunkstellen über eine oder mehrere Weltraumfunkstellen; dieser Funkdienst kann auch die für seine Wahrnehmung erforderlichen Speiseverbindungen umfassen;

9. „Beweglicher Landfunkdienst“ (Land Mobile Service) einen beweglichen Funkdienst zwischen ortsfesten und beweglichen Landfunkstellen oder zwischen beweglichen Landfunkstellen;
10. „Beweglicher Landfunkdienst über Satelliten“ (Land Mobile-Satellite Service) einen beweglichen Funkdienst über Satelliten, bei dem die beweglichen Erdfunkstellen sich an Land befinden;
11. „Beweglicher Seefunkdienst“ (Maritime Mobile Service) einen beweglichen Funkdienst zwischen Küstenfunkstellen und Seefunkstellen oder zwischen Seefunkstellen oder zwischen zugeordneten Funkstellen für den Funkverkehr an Bord; Rettungsgerätfunkstellen und Funkbaken zur Kennzeichnung der Notposition dürfen ebenfalls an diesem Funkdienst teilnehmen;
12. „Beweglicher Seefunkdienst über Satelliten“ (Maritime Mobile-Satellite Service) einen beweglichen Funkdienst über Satelliten, bei dem die beweglichen Erdfunkstellen sich an Bord von Seefahrzeugen befinden; Rettungsgerätfunkstellen und Funkbaken zur Kennzeichnung der Notposition dürfen ebenfalls an diesem Funkdienst teilnehmen;
13. „Beweglicher Flugfunkdienst“ (Aeronautical Mobile Service) einen beweglichen Funkdienst zwischen Bodenfunkstellen und Luftfunkstellen oder zwischen Luftfunkstellen, an dem auch Rettungsgerätfunkstellen teilnehmen dürfen; Funkbaken zur Kennzeichnung der Notposition dürfen auf festgelegten Notfrequenzen ebenfalls an diesem Funkdienst teilnehmen;
14. „Beweglicher Flugfunkdienst (R)“ [Aeronautical Mobile (R) Service] einen beweglichen Flugfunkdienst, der dem die Sicherheit und Regelmäßigkeit der Flüge betreffenden Funkverkehr vorwiegend auf nationalen oder internationalen zivilen Luftverkehrsrouten vorbehalten ist;
15. „Beweglicher Flugfunkdienst (OR)“ [Aeronautical Mobile (OR) Service] einen beweglichen Flugfunkdienst, der für den Funkverkehr, einschließlich des Verkehrs zur Flugkoordinierung, vorwiegend außerhalb von nationalen oder internationalen zivilen Luftverkehrsrouten vorgesehen ist;
16. „Beweglicher Flugfunkdienst über Satelliten“ (Aeronautical Mobile-Satellite Service) einen beweglichen Funkdienst über Satelliten, bei dem die beweglichen Erdfunkstellen sich an Bord von Luftfahrzeugen befinden; Rettungsgerätfunkstellen und Funkbaken zur Kennzeichnung der Notposition dürfen ebenfalls an diesem Funkdienst teilnehmen;
17. „Beweglicher Flugfunkdienst über Satelliten (R)“ [Aeronautical Mobile-Satellite (R) Service] einen beweglichen Funkdienst über Satelliten, der dem die Sicherheit und Regelmäßigkeit der Flüge betreffenden Funkverkehr vorwiegend auf nationalen oder internationalen zivilen Luftverkehrsrouten vorbehalten ist;
18. „Beweglicher Flugfunkdienst über Satelliten (OR)“ [Aeronautical Mobile-Satellite (OR) Service] einen beweglichen Funkdienst über Satelliten, der für den Funkverkehr, einschließlich des Verkehrs zur Flugkoordinierung, vorwiegend außerhalb von nationalen oder internationalen zivilen Luftverkehrsrouten vorgesehen ist;
19. „Rundfunkdienst“ (Broadcasting Service) einen Funkdienst, dessen Aussendungen zum unmittelbaren Empfang durch die Allgemeinheit bestimmt sind; dieser Funkdienst kann Tonsendungen, Fernsehsendungen oder andere Arten von Sendungen umfassen;
20. „Rundfunkdienst über Satelliten“ (Broadcasting-Satellite Service) einen Funkdienst, bei dem Signale, die von Weltraumfunkstellen ausgesendet oder vermittelt werden, zum unmittelbaren Empfang durch die Allgemeinheit bestimmt sind; im Rundfunkdienst über Satelliten bezieht sich der Begriff .unmittelbarer Empfang. sowohl auf den Einzelempfang als auch auf den Gemeinschaftsempfang;
21. „Ortungsfunkdienst“ (Radiodetermination Service) einen Funkdienst für Zwecke der Funkortung;
22. „Ortungsfunkdienst über Satelliten“ (Radiodetermination-Satellite Service) einen Funkdienst für Zwecke der Funkortung, bei dem eine oder mehrere Weltraumfunkstellen benutzt werden; dieser Funkdienst kann auch die für den eigenen Betrieb erforderlichen Speiseverbindungen umfassen;
23. „Navigationsfunkdienst“ (Radionavigation Service) einen Ortungsfunkdienst für Zwecke der Funknavigation;
24. „Navigationsfunkdienst über Satelliten“ (Radionavigation-Satellite Service) einen Ortungsfunkdienst über Satelliten für Zwecke der Funknavigation; dieser Funkdienst kann auch die für seine Wahrnehmung erforderlichen Speiseverbindungen umfassen;
25. „Seenavigationsfunkdienst“ (Maritime Radionavigation Service) einen Navigationsfunkdienst zum Zwecke des sicheren Führens von Seefahrzeugen;
26. „Seenavigationsfunkdienst über Satelliten“ (Maritime Radionavigation-Satellite Service) einen Navigationsfunkdienst über Satelliten, bei dem die Erdfunkstellen sich an Bord von Seefahrzeugen befinden;
27. „Flugnavigationsfunkdienst“ (Aeronautical Radionavigation Service) einen Navigationsfunkdienst zum Zwecke des sicheren Führens von Luftfahrzeugen;
28. „Flugnavigationsfunkdienst über Satelliten“ (Aeronautical Radionavigation-Satellite Service) einen Navigationsfunkdienst über Satelliten, bei dem die Erdfunkstellen sich an Bord von Luftfahrzeugen befinden;
29. „Nichtnavigatorischer Ortungsfunkdienst“ (Radiolocation Service) einen Ortungsfunkdienst für Zwecke der nichtnavigatorischen Funkortung;

30. „Nichtnavigatorischer Ortungsfunkdienst über Satelliten“ (Radiolocation-Satellite Service) einen Ortungsfunkdienst über Satelliten für Zwecke der nichtnavigatorischen Funkortung; dieser Funkdienst kann auch die für seine Wahrnehmung erforderlichen Speiseverbindungen umfassen;
31. „Wetterhilfenfunkdienst“ (Meteorological Aids Service) einen Funkdienst für Beobachtungen und Untersuchungen in der Wetterkunde, einschließlich der Gewässerkunde;
32. „Erderkundungsfunkdienst über Satelliten“ (Earth Exploration-Satellite Service) einen Funkdienst zwischen Erdfunkstellen und einer oder mehreren Weltraumfunkstellen, der auch Funkverbindungen zwischen Weltraumfunkstellen umfassen kann und bei dem
    a) Angaben über Eigenschaften der Erde und Naturerscheinungen derselben, einschließlich Daten über den Zustand der Umwelt, mit Hilfe von aktiven Sensoren oder passiven Sensoren gewonnen werden, die sich an Bord von Erdsatelliten befinden,
    b) ähnliche Angaben mit Hilfe von Sonden gewonnen werden, die sich in Luftfahrzeugen oder auf der Erdoberfläche befinden,
    c) diese Angaben an Erdfunkstellen übermittelt werden können, die zum gleichen Funksystem gehören,
    d) die Sonden auch abgefragt werden können;

dieser Funkdienst kann auch die für seine Wahrnehmung erforderlichen Speiseverbindungen umfassen;

33. „Wetterfunkdienst über Satelliten“ (Meteorological-Satellite Service) einen Erderkundungsfunkdienst über Satelliten für Zwecke des Wetterdienstes;
34. „Normalfrequenz- und Zeitzeichenfunkdienst“ (Standard Frequency and Time Signal Service) einen Funkdienst, bei dem zu wissenschaftlichen, technischen und anderen Zwecken festgelegte Frequenzen, Zeitzeichen oder beide zugleich mit festgelegter hoher Genauigkeit ausgesendet werden und bei dem die Aussendungen für den allgemeinen Empfang bestimmt sind;
35. „Normalfrequenz- und Zeitzeichenfunkdienst über Satelliten“ (Standard Frequency and Time Signal-Satellite Service) einen Funkdienst, der den gleichen Zwecken dient wie der Normalfrequenz- und Zeitzeichenfunkdienst, bei dem für diese Zwecke jedoch Weltraumfunkstellen an Bord von Erdsatelliten benutzt werden; dieser Funkdienst kann auch die für seine Wahrnehmung erforderlichen Speiseverbindungen umfassen;
36. „Weltraumforschungsfunkdienst“ (Space Research Service) einen Funkdienst, bei dem Weltraumfahrzeuge oder andere Weltraumkörper für die wissenschaftliche oder technische Forschung verwendet werden;
37. „Amateurfunkdienst“ (Amateur Service) einen Funkdienst, der von Funkamateuren für die eigene Ausbildung, für den Verkehr der Funkamateure untereinander und für technische Studien wahrgenommen wird; Funkamateure sind ordnungsgemäß ermächtigte Personen, die sich mit der Funktechnik aus rein persönlicher Neigung und nicht aus wirtschaftlichem Interesse befassen;
38. „Amateurfunkdienst über Satelliten“ (Amateur-Satellite Service) einen Funkdienst, der den gleichen Zwecken dient wie der Amateurfunkdienst, bei dem für diese Zwecke jedoch Weltraumfunkstellen an Bord von Erdsatelliten benutzt werden;
39. „Radioastronomiefunkdienst“ (Radio Astronomy Service) einen Funkdienst für Zwecke der Radioastronomie.

(2) In dieser Verordnung bedeutet die Abkürzung

1. (R) Linienflüge (route);
2. (OR) andere Flüge als Linienflüge (off-route).

Frequenzbereichszuweisungsplan

§ 3. (1) Die Frequenzzuweisungen ergeben sich aus **Anlage 1** (Frequenzbereichszuweisungsplan).

(2) Der Frequenzbereichszuweisungsplan beinhaltet in

1. Spalte 1 die in der VOFunk beschriebenen Frequenzbereiche, auf die sich die Zuweisungen beziehen,
2. in Spalte 2 die Frequenzbereichszuweisungen gemäß Artikel 5 VOFunk und
3. in Spalte 3 die Frequenzbereichszuweisungen im Bundesgebiet.

(3) Die Reihenfolge, in der die verschiedenen Funkdienste innerhalb der Felder der Spalten 2 und 3 genannt werden, bedeutet keine Rangordnung.

(4) Wenn bei einer Zuweisung in Spalte 3 in Klammern eine zusätzliche Angabe gemacht wird, so ist diese Zuweisung an einen Dienst auf die dort angegebene Betriebsart oder auf den dort angegebenen Frequenzbereich beschränkt.

(5) Wenn in den Anlagen angegeben ist, dass ein Funkdienst in einem bestimmten Frequenzbereich unter der Bedingung wahrgenommen werden darf, dass er keine schädlichen Störungen verursacht, so bedeutet dies auch, dass dieser Funkdienst keinen Schutz gegen schädliche Störungen durch andere Funkdienste, denen der Bereich zugewiesen ist, beanspruchen kann.

Fußnoten des Frequenzbereichszuweisungsplans

§ 4. (1) Die Fußnoten des Frequenzbereichszuweisungsplans ergeben sich aus **Anlage 2.** In **Anlage 2** können auch Voraussetzungen für die Zuteilung von Frequenzen enthalten sein.

(2) Die im Frequenzbereichszuweisungsplan aufscheinenden Fußnoten beziehen sich entweder auf die Fußnoten in Artikel 5 VOFunk (Beispiel: 5.150) oder auf zusätzliche Fußnoten, die spezielle Frequenzzuweisungen für Österreich angeben (A01 und A02).

(3) Fußnoten, die im Frequenzbereichszuweisungsplan am unteren Rand eines Feldes unter der Bezeichnung der Funkdienste angegeben sind, gelten für die gesamte betreffende Frequenzzuweisung.

(4) Fußnoten, die rechts neben der Bezeichnung eines Funkdienstes angegeben sind, gelten nur für diesen Funkdienst.

(5) Wenn in einer Fußnote nichts Gegenteiliges gesagt ist, schließt der Begriff „Fester Funkdienst“ nicht die Systeme ein, welche die ionosphärische Streuausbreitung anwenden.

Primäre und sekundäre Funkdienste

§ 5. (1) Wenn in einem Feld des Frequenzbereichszuweisungsplans ein Frequenzbereich mehreren Funkdiensten zugewiesen ist, ist zu unterscheiden zwischen:

a) Funkdiensten, deren Namen in Großbuchstaben (Beispiel: FIXED) gedruckt sind; diese Dienste werden als „primäre Funkdienste“ bezeichnet;

b) Funkdiensten, deren Namen in gewöhnlichen Buchstaben (Beispiel: Mobile) gedruckt sind; diese Dienste werden als „sekundäre Funkdienste“ bezeichnet.

(2) Zusatzerläuterungen werden in gewöhnlichen Buchstaben gedruckt (Beispiel: MOBILE except aeronautical mobile).

(3) Funkstellen eines sekundären Funkdienstes

a) dürfen keine schädlichen Störungen bei den Funkstellen der primären Funkdienste verursachen, denen Frequenzen bereits zugeteilt sind oder später zugeteilt werden könnten;

b) können keinen Schutz gegen schädliche Störungen durch Funkstellen der primären Funkdienste verlangen, denen Frequenzen bereits zugeteilt sind oder später zugeteilt werden könnten;

c) können jedoch Schutz gegen schädliche Störungen durch Funkstellen des gleichen sekundären Funkdienstes oder anderer sekundärer Funkdienste verlangen, denen später Frequenzen zugeteilt werden könnten.

(4) Wenn eine Fußnote des Frequenzbereichszuweisungsplans die Angabe enthält, dass ein Frequenzbereich einem Funkdienst in einem Gebiet oder in einem bestimmten Land auf „sekundärer Basis“ zugewiesen ist, handelt es sich dabei um einen sekundären Funkdienst nur in diesem Gebiet oder Land.

(5) Wenn eine Fußnote des Frequenzbereichszuweisungsplans die Angabe enthält, dass ein Frequenzbereich einem Funkdienst in einem Gebiet oder in einem bestimmten Land auf „primärer Basis“ zugewiesen ist, handelt es sich dabei um einen primären Funkdienst nur in diesem Gebiet oder Land.

Zusätzliche Zuweisungen

§ 6. (1) Wenn eine Fußnote der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk die Angabe enthält, dass ein Frequenzbereich außer anderen Funkdiensten in einem Gebiet oder in einem bestimmten Land einem weiteren Funkdienst „zusätzlich zugewiesen“ ist, handelt es sich dabei um eine zusätzliche Zuweisung, dh. um eine Zuweisung, die in diesem Gebiet oder Land dem oder den in der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk aufgeführten Funkdienst oder Funkdiensten hinzugefügt wird.

(2) Wenn die Fußnote in Bezug auf einen oder mehrere der genannten Funkdienste keine andere Einschränkung enthält als die, dass er bzw. sie nur in einem bestimmten Gebiet oder Land wahrgenommen werden darf bzw. dürfen, haben Funkstellen dieses Dienstes oder dieser Dienste die gleichen Rechte wie die Funkstellen des anderen primären Dienstes oder der anderen primären Dienste, deren Namen in der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk angegeben sind.

(3) Wenn einer zusätzlichen Zuweisung zu der Einschränkung, dass sie nur in einem bestimmten Gebiet oder Land benutzt werden darf, weitere Einschränkungen auferlegt sind, ist dies in der Fußnote der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk angegeben.

Alternative Zuweisungen

§ 7. (1) Wenn eine Fußnote der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk die Angabe enthält, dass ein Frequenzbereich einem oder mehreren Funkdiensten in einem Gebiet oder in einem bestimmten Land zugewiesen ist, handelt es sich dabei um eine „alternative“ Zuweisung, dh. um eine Zuweisung, die in diesem Gebiet oder Land die in der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk angegebene Zuweisung ersetzt.

(2) Wenn die Fußnote in Bezug auf Funkstellen eines oder mehrerer der genannten Funkdienste keine andere Einschränkung enthält als die, dass sie nur in einem bestimmten Gebiet oder Land betrieben werden dürfen,

haben diese Funkstellen dieses Dienstes oder dieser Dienste die gleichen Rechte wie die Funkstellen des primären Dienstes oder der primären Dienste, die in der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk angegeben sind und denen der Frequenzbereich in anderen Gebieten oder Ländern zugewiesen ist.

(3) Wenn den Funkstellen eines Dienstes, der eine alternative Zuweisung erhalten hat, zu der Einschränkung, dass sie nur in einem bestimmten Gebiet oder Land betrieben werden dürfen, weitere Einschränkungen auferlegt sind, ist dies in der Fußnote der Frequenzzuweisungstabelle gemäß Artikel 5 VOFunk angegeben.

Außer-Kraft-Treten

§ 8. Mit dem In-Kraft-Treten dieser Verordnung tritt die Frequenzbereichszuweisungsverordnung, BGBl. II Nr. 456/2003, außer Kraft.

Anlage 1

Below 9 kHz	(Not allocated) 5.53 5.54	(Not allocated) 5.53 5.54
9 - 14 kHz	RADIONAVIGATION	RADIONAVIGATION Land Mobile A02
14 – 19.95 kHz	FIXED MARITIME MOBILE 5.57 5.55 5.56	FIXED MARITIME MOBILE 5.57 Land Mobile A02 5.56
19.95 - 20.05 kHz	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz) Land Mobile A02
20.05 - 70 kHz	FIXED MARITIME MOBILE 5.57 5.56 5.58	FIXED MARITIME MOBILE 5.57 Land Mobile A02 5.56
70 - 72 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60 Land Mobile A02
72 - 84 kHz	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 Land Mobile A02 5.56
84 - 86 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60 Land Mobile A02
86 - 90 kHz	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION Land Mobile A02 5.56
90 - 110 kHz	RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION 5.62 Fixed Land Mobile A02 5.64

110 - 112 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION Land Mobile A02 5.64
112 - 115 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60 Land Mobile A02
115 - 117.6 kHz	RADIONAVIGATION 5.60 Fixed Maritime Mobile 5.64 5.66	RADIONAVIGATION 5.60 Fixed Maritime Mobile Land Mobile A02 5.64
117.6 - 126 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 Land Mobile A02 5.64
126 - 129 kHz	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60 Land Mobile A02
129 - 130 kHz	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 Land Mobile A02 5.64
130 - 148.5 kHz	FIXED MARITIME MOBILE 5.64 5.67	FIXED MARITIME MOBILE Amateur (135.7 - 137.8 kHz) A01 Land Mobile A02 5.64
148.5 - 255 kHz	BROADCASTING 5.68 5.69 5.70	BROADCASTING Land Mobile A02

255 - 283.5 kHz	BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70 5.71	BROADCASTING AERONAUTICAL RADIONAVIGATION Land Mobile A02
283.5 - 315 kHz	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.72 5.74	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 Land Mobile A02 5.74
315 - 325 kHz	AERONAUTICAL RADIONAVIGATION Maritime Radionavigation (radiobeacons) 5.73 5.72 5.75	AERONAUTICAL RADIONAVIGATION Maritime Radionavigation (radiobeacons) 5.73 Land Mobile A02
325 - 405 kHz	AERONAUTICAL RADIONAVIGATION 5.72	AERONAUTICAL RADIONAVIGATION Land Mobile (325 – 400 kHz) A02
405 - 415 kHz	RADIONAVIGATION 5.76 5.72	RADIONAVIGATION 5.76
415 - 435 kHz	MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION 5.72	MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION 5.72
435 - 495 kHz	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.72 5.82	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation Land Mobile (457 kHz) A02 5.82
495 - 505 kHz	MOBILE (distress and calling) 5.83	MOBILE (distress and calling) 5.83

505 - 526.5 kHz	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION 5.72	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION
526.5 - 1606.5 kHz	BROADCASTING 5.87 5.87A	BROADCASTING
1606.5 - 1625 kHz	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92
1625 - 1635 kHz	RADIOLOCATION 5.93	RADIOLOCATION Land Mobile A02
1635 - 1800 kHz	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92 5.96	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92 5.96
1800 - 1810 kHz	RADIOLOCATION 5.93	RADIOLOCATION Land Mobile A02
1810 - 1850 kHz	AMATEUR 5.98 5.99 5.100 5.101	FIXED (1 810-1 830 kHz) 5.99 Amateur 5.100 Land Mobile A02
1850 - 2000 kHz	FIXED MOBILE except aeronautical mobile 5.92 5.96 5.103	FIXED MOBILE except aeronautical mobile Amateur (1850 - 1950 kHz) 5.96 5.92 5.103
2000 - 2025 kHz	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103

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 5.104 5.92 5.103
2045 - 2160 kHz	FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92
2160 - 2170 kHz	RADIOLOCATION 5.93 5.107	RADIOLOCATION Land Mobile A02
2170 - 2173.5 kHz	MARITIME MOBILE	MARITIME MOBILE Land Mobile A02
2173.5 - 2190.5 kHz	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) Land Mobile A02 5.108 5.109 5.110 5.111
2190.5 - 2194 kHz	MARITIME MOBILE	MARITIME MOBILE Land Mobile A02
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
2300 - 2498 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	FIXED MOBILE except aeronautical mobile (R) 5.103
2498 - 2501 kHz	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)
2501 - 2502 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research

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
2625 - 2650 kHz	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	MARITIME MOBILE MARITIME RADIONAVIGATION Land Mobile A02 5.92
2650 - 2850 kHz	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103
2850 - 3025 kHz	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) Land Mobile A02 5.111 5.115
3025 - 3155 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR) Land Mobile A02
3155 - 3200 kHz	FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	FIXED MOBILE except aeronautical mobile (R) 5.116
3200 - 3230 kHz	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) 5.116
3230 - 3400 kHz	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118	FIXED MOBILE except aeronautical mobile 5.116
3400 - 3500 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R) Land Mobile A02

3500 - 3800 kHz	AMATEUR FIXED MOBILE except aeronautical mobile 5.92	AMATEUR Fixed Mobile except aeronautical mobile 5.92
3800 - 3900 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
3900 - 3950 kHz	AERONAUTICAL MOBILE (OR) 5.123	AERONAUTICAL MOBILE (OR) Land Mobile A02
3950 - 4000 kHz	FIXED BROADCASTING	FIXED Land Mobile A02
4000 - 4063 kHz	FIXED MARITIME MOBILE 5.127 5.126	FIXED MARITIME MOBILE 5.127 Land Mobile A02
4063 - 4438 kHz	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128 5.129	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 Land Mobile A02 5.129
4438 - 4650 kHz	FIXED MOBILE except Aeronautical Mobile (R)	FIXED MOBILE except aeronautical mobile (R)
4650 - 4700 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R) Land Mobile A02
4700 - 4750 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
4750 - 4850 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
4850 - 4995 kHz	FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE
4995 - 5003 kHz	STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)

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 Land Mobile A02
5060 - 5250 kHz	FIXED Mobile except aeronautical mobile 5.133	FIXED Mobile except aeronautical mobile
5250 - 5450 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
5450 - 5480 kHz	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
5480 - 5680 kHz	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) Land Mobile A02 5.111 5.115
5680 - 5730 kHz	AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) Land Mobile A02 5.111 5.115
5730 - 5900 kHz	FIXED LAND MOBILE	FIXED LAND MOBILE
5900 - 5950 kHz	BROADCASTING 5.134 5.136	FIXED (until 1 April 2007) 5.136 Fixed (after 1 April 2007) 5.136 LAND MOBILE (until 1 April 2007) 5.136 Land Mobile (after 1 April 2007) 5.136 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
5950 - 6200 kHz	BROADCASTING	BROADCASTING
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 Land Mobile A02 5.137

6525 - 6685 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R) Land Mobile A02
6685 - 6765 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR) Land Mobile A02
6765 - 7000 kHz	FIXED MOBILE except aeronautical mobile (R) 5.138 5.138A 5.139	FIXED Land Mobile (until 29 March 2009) MOBILE except aeronautical mobile (R) (after 29 March 2009) 5.138 5.138A
7000 - 7100 kHz	AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	AMATEUR AMATEUR-SATELLITE
7100 - 7200 kHz	AMATEUR 5.141A 5.141B 5.141C 5.142	BROADCASTING (until 29 March 2009) 5.141C AMATEUR (after 29 March 2009) 5.142
7200 - 7300 kHz	BROADCASTING	BROADCASTING
7300 - 7400 kHz	BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D	BROADCASTING 5.134 FIXED (7350 - 7400 kHz) (until 29 March 2009) 5.143B Fixed (7350 - 7400 kHz) (after 29 March 2009) 5.143B Land Mobile (7350 - 7400 kHz) 5.143B 5.143
7400 - 7450 kHz	BROADCASTING 5.143B 5.143C	BROADCASTING FIXED (7400 - 7450 kHz) (until 29 March 2009) 5.143B Fixed (7400 - 7450 kHz) (after 29 March 2009) 5.143B Land Mobile (7400 - 7450 kHz) 5.143B
7450 - 8100 kHz	FIXED MOBILE except aeronautical mobile (R) 5.143E 5.14	FIXED 5.143E Land Mobile (until 29 March 2009) 5.143E MOBILE except aeronautical mobile (R) (after 29 March 2009) 5.143E

8100 - 8195 kHz	FIXED MARITIME MOBILE	FIXED MARITIME MOBILE Land Mobile A02
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 Land Mobile A02 5.111
8815 - 8965 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
8965 - 9040 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
9040 - 9400 kHz	FIXED	FIXED
9400 - 9500 kHz	BROADCASTING 5.134 5.146	FIXED (until 1 April 2007) 5.146 Fixed (after 1 April 2007) 5.146 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
9500 - 9900 kHz	BROADCASTING 5.147	BROADCASTING Fixed (9775 - 9900 kHz) 5.147
9900 - 9995 kHz	FIXED	FIXED
9995 - 10003 kHz	STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111
10003 - 10005 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111
10005 - 10100 kHz	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) Land Mobile A02 5.111
10100 - 10150 kHz	FIXED Amateur	FIXED Amateur Land Mobile A02

10150 - 11175 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
11175 - 11275 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR) Land Mobile A02
11275 - 11400 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R) Land Mobile A02
11400 - 11600 kHz	FIXED	FIXED Land Mobile A02
11600 - 11650 kHz	BROADCASTING 5.134 5.146	FIXED (until 1 April 2007) 5.146 Fixed (after 1 April 2007) 5.146 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
11650 - 12050 kHz	BROADCASTING 5.147	BROADCASTING Fixed (11650 - 11700 kHz) 5.147 Fixed (11975 - 12050 kHz) 5.147
12050 - 12100 kHz	BROADCASTING 5.134 5.146	FIXED (until 1 April 2007) 5.146 Fixed (after 1 April 2007) 5.146 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
12100 - 12230 kHz	FIXED	FIXED
12230 - 13200 kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145
13200 - 13260 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
13260 - 13360 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
13360 - 13410 kHz	FIXED RADIO ASTRONOMY 5.149	FIXED 5.149
13410 - 13570 kHz	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) 5.150

13570 - 13600 kHz	BROADCASTING 5.134 5.151	FIXED (until 1 April 2007) 5.151 Fixed (after 1 April 2007) 5.151 Mobile except aeronautical mobile (R) 5.151 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
13600 - 13800 kHz	BROADCASTING	BROADCASTING
13800 - 13870 kHz	BROADCASTING 5.134 5.151	FIXED (until 1 April 2007) 5.151 Fixed (after 1 April 2007) 5.151 Mobile except aeronautical mobile (R) 5.151 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
13870 - 14000 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
14000 - 14250 kHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
14250 - 14350 kHz	AMATEUR 5.152	AMATEUR
14350 - 14990 kHz	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)
14990 - 15005 kHz	STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111
15005 - 15010 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research
15010 - 15100 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
15100 - 15600 kHz	BROADCASTING	BROADCASTING

15600 - 15800 kHz	BROADCASTING 5.134 5.146	FIXED (until 1 April 2007) 5.146 Fixed (after 1 April 2007) 5.146 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
15800 - 16360 kHz	FIXED 5.153	FIXED
16360 - 17410 kHz	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145
17410 - 17480 kHz	FIXED	FIXED
17480 - 17550 kHz	BROADCASTING 5.134 5.146	FIXED (until 1 April 2007) 5.146 Fixed (after 1 April 2007) 5.146 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
17550 - 17900 kHz	BROADCASTING	BROADCASTING
17900 - 17970 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
17970 - 18030 kHz	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
18030 - 18052 kHz	FIXED	FIXED
18052 - 18068 kHz	FIXED Space Research	FIXED
18068 - 18168 kHz	AMATEUR AMATEUR-SATELLITE 5.154	AMATEUR AMATEUR-SATELLITE
18168 - 18780 kHz	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile
18780 - 18900 kHz	MARITIME MOBILE	MARITIME MOBILE

18900 - 19020 kHz	BROADCASTING 5.134 5.146	FIXED (until 1 April 2007) 5.146 Fixed (after 1 April 2007) 5.146 BROADCASTING (after 1 April 2007) 5.134 Broadcasting (until 1 April 2007) 5.134
19020 - 19680 kHz	FIXED	FIXED
19680 - 19800 kHz	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132
19800 - 19990 kHz	FIXED	FIXED
19990 - 19995 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space Research 5.111
19995 - 20010 kHz	STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111
20010 - 21000 kHz	FIXED Mobile	FIXED Mobile
21000 - 21450 kHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
21450 - 21850 kHz	BROADCASTING	BROADCASTING
21850 - 21870 kHz	FIXED 5.155A 5.155	FIXED
21870 - 21924 kHz	FIXED 5.155B	FIXED 5.155B
21924 - 22000 kHz	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
22000 - 22855 kHz	MARITIME MOBILE 1 5.132 5.156	MARITIME MOBILE 5.132

22855 - 23000 kHz	FIXED 5.156	FIXED
23000 - 23200 kHz	FIXED Mobile except aeronautical mobile (R) 5.156	FIXED Mobile except aeronautical mobile (R)
23200 - 23350 kHz	FIXED 5.156A AERONAUTICAL MOBILE (OR)	FIXED 5.156A AERONAUTICAL MOBILE (OR)
23350 - 24000 kHz	FIXED MOBILE except aeronautical mobile 5.157	FIXED MOBILE except aeronautical mobile 5.157
24000 - 24890 kHz	FIXED LAND MOBILE	FIXED LAND MOBILE
24890 - 24990 kHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
24990 - 25005 kHz	STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)
25005 - 25010 kHz	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research
25010 - 25070 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
25070 - 25210 kHz	MARITIME MOBILE	MARITIME MOBILE
25210 - 25550 kHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
25550 - 25670 kHz	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149
25670 - 26100 kHz	BROADCASTING	BROADCASTING
26100 - 26175 kHz	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132

26175 - 27500 kHz	FIXED MOBILE except aeronautical mobile 5.150	FIXED MOBILE except aeronautical mobile 5.150
27.5 - 28 MHz	METEOROLOGICAL AIDS FIXED MOBILE	METEOROLOGICAL AIDS FIXED MOBILE
28 - 29.7 MHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE
29.7 - 30.005 MHz	FIXED MOBILE	MOBILE
30.005 - 30.01 MHz	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	MOBILE
30.01 - 37.5 MHz	FIXED MOBILE	MOBILE
37.5 - 38.25 MHz	FIXED MOBILE Radio Astronomy 5.149	MOBILE except aeronautical mobile A01 5.149
38.25 - 39.986 MHz	FIXED MOBILE	MOBILE
39.986 - 40.02 MHz	FIXED MOBILE Space Research	MOBILE
40.02 - 40.98 MHz	FIXED MOBILE 5.150	MOBILE 5.150
40.98 - 41.015 MHz	FIXED MOBILE Space Research 5.160 5.161	MOBILE

41.015 - 44 MHz	FIXED MOBILE 5.160 5.161	MOBILE
44 - 47 MHz	FIXED MOBILE 5.162 5.162A	MOBILE (44 - 46.4 MHz) MOBILE except aeronautical mobile (46.4 - 47 MHz) A01 5.162A
47 - 68 MHz	BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.171	BROADCASTING LAND MOBILE 5.164 Amateur (50 - 52 MHz) A01 5.162A
68 - 74.8 MHz	FIXED MOBILE except aeronautical mobile 5.149 5.174 5.175 5.176 5.177 5.179	MOBILE (68 - 70.450 MHz) A01 MOBILE except aeronautical mobile (70.450 - 74.8 MHz) 5.149
74.8 - 75.2 MHz	AERONAUTICAL RADIONAVIGATION 5.180 5.181	AERONAUTICAL RADIONAVIGATION 5.180
75.2 - 87.5 MHz	FIXED MOBILE except aeronautical mobile 5.175 5.179 5.184 5.187	MOBILE except aeronautical mobile
87.5 - 100 MHz	BROADCASTING 5.190	BROADCASTING
100 - 108 MHz	BROADCASTING 5.192 5.194	BROADCASTING
108 - 117.975 MHz	AERONAUTICAL RADIONAVIGATION 5.197 5.197A	AERONAUTICAL RADIONAVIGATION 5.197A

117.975 - 137 MHz	AERONAUTICAL MOBILE (R) 5.111 5.198 5.199 5.200 5.201 5.202 5.203 5.203A 5.203B	AERONAUTICAL MOBILE (R) MOBILE-SATELLITE (Earth-space) (121.45 - 121.55 MHz) 5.199 5.111 5.200 5.203
137 - 137.025 MHz	SPACE OPERATION (space-Earth) METEOROLOGICAL-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) 5.208A 5.209 SPACE RESEARCH (space-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	METEOROLOGICAL-SATELLITE (space-Earth) MOBILE A01 MOBILE-SATELLITE (space-Earth) 5.208A 5.209 5.208
137.025 - 137.175 MHz	SPACE OPERATION (space-Earth) METEOROLOGICAL-SATELLITE (space-Earth) SPACE RESEARCH (space-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	METEOROLOGICAL-SATELLITE (space-Earth) MOBILE A01 Mobile-Satellite (space-Earth) 5.208A 5.209 5.208
137.175 - 137.825 MHz	SPACE OPERATION (space-Earth) METEOROLOGICAL-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) 5.208A 5.209 SPACE RESEARCH (space-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	METEOROLOGICAL-SATELLITE (space-Earth) MOBILE A01 MOBILE-SATELLITE (space-Earth) 5.208A 5.209 5.208

137.825 - 138 MHz	SPACE OPERATION (space-Earth) METEOROLOGICAL-SATELLITE (space-Earth) SPACE RESEARCH (space-Earth) Fixed Mobile-Satellite (space-Earth) 5.208A 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	METEOROLOGICAL-SATELLITE (space-Earth) MOBILE A01 Mobile-Satellite (space-Earth) 5.208A 5.209 5.208
138 - 143.6 MHz	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) LAND MOBILE 5.211
143.6 - 143.65 MHz	AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-Earth) 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) LAND MOBILE 5.211
143.65 - 144 MHz	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	AERONAUTICAL MOBILE (OR) LAND MOBILE 5.211
144 - 146 MHz	AMATEUR AMATEUR-SATELLITE 5.216	AMATEUR AMATEUR-SATELLITE
146 - 148 MHz	FIXED MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)
148 - 149.9 MHz	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-space) 5.209 5.218 5.219 5.221	MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-space) 5.209 5.221 5.219
149.9 - 150.05 MHz	LAND MOBILE-SATELLITE (Earth-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223	MOBILE-SATELLITE (Earth-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223

150.05 - 153 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	MOBILE except aeronautical mobile 5.149
153 - 154 MHz	FIXED MOBILE except aeronautical mobile (R) Meteorological Aids	MOBILE except aeronautical mobile A01
154 - 156.7625 MHz	FIXED MOBILE except aeronautical mobile (R) 5.226 5.227	MOBILE except aeronautical mobile (154 -156.5125 MHz) A01 MARITIME MOBILE (156.5125 - 156.5375 MHz) 5.227 MOBILE except aeronautical mobile (156.5375 -156.7625 MHz) A01 5.226
156.7625 - 156.8375 MHz	MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) 5.111 5.226
156.8375 - 174 MHz	FIXED MOBILE except aeronautical mobile 5.226 5.229	MOBILE except aeronautical mobile 5.226
174 - 223 MHz	BROADCASTING 5.235 5.237 5.243	BROADCASTING LAND MOBILE 5.235
223 - 230 MHz	BROADCASTING Fixed Mobile 5.243 5.246 5.247	BROADCASTING
230 - 235 MHz	FIXED MOBILE 5.247 5.251 5.252	MOBILE

235 - 267 MHz	FIXED MOBILE 5.111 5.199 5.252 5.254 5.256 5.256A	MOBILE AERONAUTICAL MOBILE (242.950 - 243.050 MHz) 5.256 MOBILE-SATELLITE (Earth-space) (242.950 - 243.050 MHz) 5.199 5.111 5.254 5.256A
267 - 272 MHz	FIXED MOBILE Space Operation (space-Earth) 5.254 5.257	MOBILE 5.254
272 - 273 MHz	SPACE OPERATION (space-Earth) FIXED MOBILE 5.254	MOBILE 5.254
273 - 312 MHz	FIXED MOBILE 5.254	MOBILE 5.254
312 - 315 MHz	FIXED MOBILE Mobile-Satellite (Earth-space) 5.254 5.255	MOBILE 5.254
315 - 322 MHz	FIXED MOBILE 5.254	MOBILE 5.254
322 - 328.6 MHz	FIXED MOBILE RADIO ASTRONOMY 5.149	MOBILE 5.149
328.6 - 335.4 MHz	AERONAUTICAL RADIONAVIGATION 5.258 5.259	AERONAUTICAL RADIONAVIGATION 5.258

335.4 - 387 MHz	FIXED MOBILE 5.254	FIXED MOBILE 5.254
387 - 390 MHz	FIXED MOBILE Mobile-Satellite (space-Earth) 5.208A 5.254 5.255	MOBILE 5.208A 5.254 5.255
390 - 399.9 MHz	FIXED MOBILE 5.254	MOBILE 5.254
399.9 - 400.05 MHz	MOBILE-SATELLITE (Earth-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260 5.220	MOBILE-SATELLITE (Earth-space) 5.209 5.224A 5.220
400.05 - 400.15 MHz	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261
400.15 - 401 MHz	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) 5.208A 5.209 SPACE RESEARCH (space-Earth) 5.263 Space Operation (space-Earth) 5.262 5.264	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) 5.208A 5.209 S5.264
401 - 402 MHz	METEOROLOGICAL AIDS SPACE OPERATION (space-Earth) EARTH EXPLORATION-SATELLITE (Earth-space) METEOROLOGICAL-SATELLITE (Earth-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-space) METEOROLOGICAL-SATELLITE (Earth-space)

402 - 403 MHz	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-space) METEOROLOGICAL-SATELLITE (Earth-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-space) METEOROLOGICAL-SATELLITE (Earth-space) Mobile except aeronautical mobile
403 - 406 MHz	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS Mobile except aeronautical mobile
406 - 406.1 MHz	MOBILE-SATELLITE (Earth-space) 5.266 5.267	MOBILE-SATELLITE (Earth-space) 5.266 5.267
406.1 - 410 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	FIXED LAND MOBILE A01 5.149
410 - 420 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-space) 5.268	FIXED MOBILE except aeronautical mobile
420 - 430 MHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	FIXED MOBILE except aeronautical mobile
430 - 432 MHz	AMATEUR RADIOLOCATION 5.271 5.272 5.273 5.274 5.275 5.276 5.277	AMATEUR

432 - 438 MHz	AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.272 5.276 5.277 5.280 5.281 5.282	AMATEUR AMATEUR-SATELLITE (435 - 438 MHz) 5.282 Land Mobile A01 5.138 5.280 (433.05 - 434.79 MHz: ISM)
438 - 440 MHz	AMATEUR RADIOLOCATION 5.271 5.273 5.274 5.275 5.276 5.277 5.283	AMATEUR (438 - 439.1 MHz) MOBILE 5.283 Amateur (439.1 - 440 MHz)
440 - 450 MHz	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286	FIXED MOBILE except aeronautical mobile
450 - 455 MHz	FIXED MOBILE 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	FIXED (450 – 451,3 MHz) MOBILE 5.286A
455 - 456 MHz	FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	MOBILE 5.286A
456 - 459 MHz	FIXED MOBILE 5.271 5.287 5.288	MOBILE 5.287
459 - 460 MHz	FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	MOBILE 5.286A
460 - 470 MHz	FIXED MOBILE Meteorological-Satellite (space-Earth) 5.287 5.288 5.289 5.290	FIXED (460 – 461,3 MHz) MOBILE 5.287

470 - 790 MHz	BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.302 5.304 5.306 5.311 5.312	BROADCASTING Land Mobile 5.296 Radiolocation (470-494 MHz) 5.291A 5.149 5.311
790 - 862 MHz	FIXED BROADCASTING 5.312 5.314 5.315 5.316 5.319 5.321	BROADCASTING Land Mobile 5.314
862 - 890 MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	MOBILE 5.317A A01
890 - 942 MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation 5.323	MOBILE 5.317A A01
942 - 960 MHz	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	MOBILE 5.317A A01
960 - 1164 MHz	AERONAUTICAL RADIONAVIGATION 5.328	AERONAUTICAL RADIONAVIGATION 5.328
1164 – 1215 MHz	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-Earth) (space-space) 5.328B 5.328A	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-Earth) (space-space) 5.328B 5.328A

1215 - 1240 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space - Earth) (space-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	EARTH EXPLORATION-SATELLITE (active) 5.332 RADIOLOCATION RADIONAVIGATION-SATELLITE (space-Earth) (space-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.332 RADIONAVIGATION 5.331
1240 - 1300 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-Earth) (space-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) 5.335A RADIOLOCATION RADIONAVIGATION 5.331 RADIONAVIGATION-SATELLITE (space-Earth) (space-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.335A Amateur Amateur Satellite (Earth-space) (1260 - 1270 MHz) 5.282
1300 - 1350 MHz	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-space) 5.149 5.337A	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.337A RADIONAVIGATION-SATELLITE (Earth-space) 5.337A 5.149
1350 - 1400 MHz	FIXED MOBILE RADIOLOCATION 5.149 5.338 5.339 5.339A	FIXED RADIOLOCATION 5.149 5.339A

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
1427 - 1429 MHz	SPACE OPERATION (Earth-space) FIXED MOBILE except aeronautical mobile 5.341	FIXED
1429 - 1452 MHz	FIXED MOBILE except aeronautical mobile 5.339A 5.341 5.342	FIXED 5.339A
1452 - 1492 MHz	FIXED MOBILE except aeronautical mobile BROADCASTING 5.345 5.347 BROADCASTING-SATELLITE 5.345 5.347 5.347A 5.341 5.342	FIXED BROADCASTING (1452 – 1479.5 MHz) 5.345 A01 BROADCASTING-SATELLITE (1479.5 – 1492 MHz) 5.345 5.347A A01
1492 - 1518 MHz	FIXED MOBILE except aeronautical mobile 5.341 5.342	FIXED
1518 - 1525 MHz	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-Earth) 5.348 5.348A 5.348B 5.348C 5.341 5.342	FIXED MOBILE-SATELLITE (space-Earth) 5.348 5.348C

1525 - 1530 MHz	SPACE OPERATION (space-Earth) FIXED MOBILE-SATELLITE (space-Earth) 5.347A 5.351A Earth Exploration-satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	FIXED MOBILE-SATELLITE (space-Earth) 5.347A 5.351A 5.351 5.354
1530 - 1535 MHz	SPACE OPERATION (space-Earth) MOBILE-SATELLITE (space-Earth) 5.347A 5.351A 5.353A Earth Exploration–satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.351 5.354	MOBILE-SATELLITE (space-Earth) 5.347A 5.353A 5.351A 5.351 5.354
1535 - 1559 MHz	MOBILE-SATELLITE (space-Earth) 5.347A 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-Earth) 5.347A 5.351A 5.353A 5.354 5.356 5.357 5.357A 5.351 5.359
1559 - 1610 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-Earth) (space-space) 5.328B 5.329A 5.341 5.362B 5.362C 5.363	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-Earth) (space-space) 5.328B 5.329A
1610 - 1610.6 MHz	MOBILE-SATELLITE (Earth-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-space) 5.351A 5.364 AERONAUTICAL RADIONAVIGATION 5.359 5.366 5.367 5.368 5.372

1610.6 - 1613.8 MHz	MOBILE-SATELLITE (Earth-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-space) 5.351A 5.364 RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.359 5.366 5.367 5.368 5.372
1613.8 - 1626.5 MHz	MOBILE-SATELLITE (Earth-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-Satellite (space-Earth) 5.347A 5.341 5.355 5.359 5.363 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-space) 5.351A 5.364 AERONAUTICAL RADIONAVIGATION Mobile-Satellite (space-Earth) 5.347A 5.359 5.365 5.366 5.367 5.368 5.372
1626.5 - 1660 MHz	MOBILE-SATELLITE (Earth-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-space) 5.351A 5.353A 5.354 5.357A 5.374 5.375 5.376 5.351 5.359
1660 - 1660.5 MHz	MOBILE-SATELLITE (Earth-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	MOBILE-SATELLITE (Earth-space) 5.351A 5.354 5.376A 5.149 5.351
1660.5 - 1668.0MHz	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 5.379A

1668.0 – 1668.4 MHz	MOBILE-SATELLITE (Earth-space) 5.348C 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A 5.379D	MOBILE-SATELLITE (Earth-space) 5.348C 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.379A 5.379D
1668.4 - 1670 MHz	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-space) 5.348C 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED MOBILE-SATELLITE (Earth-space) 5.348C 5.379B 5.379C Mobile except aeronautical mobile A01 5.149 5.379D
1670 - 1675 MHz	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-Earth) MOBILE 5.380 MOBILE-SATELLITE (Earth-space) 5.348C 5.379B 5.341 5.379D 5.379E 5.380A	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-Earth) MOBILE 5.380 MOBILE-SATELLITE (Earth-space) 5.348C 5.379B Fixed A01 5.379D 5.380A
1675 - 1690 MHz	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-Earth) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-Earth) MOBILE except aeronautical mobile
1690 - 1700 MHz	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-Earth) Fixed Mobile except aeronautical mobile 5.289

1700 - 1710 MHz	FIXED METEOROLOGICAL-SATELLITE (space-Earth) MOBILE except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-Earth) Mobile except aeronautical mobile A01 5.289
1710 - 1930 MHz	FIXED MOBILE 5.380 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	MOBILE 5.380 5.384A 5.388 5.388A 5.149
1930 - 1970 MHz	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388
1970 - 1980 MHz	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388
1980 - 2010 MHz	FIXED MOBILE MOBILE-SATELLITE (Earth-space) 5.351A 5.388 5.389A 5.389B 5.389F	MOBILE-SATELLITE (Earth-space) 5.351A 5.388 5.389A
2010 - 2025 MHz	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388
2025 - 2110 MHz	SPACE OPERATION (Earth-space) (space-Earth) EARTH EXPLORATION SATELLITE (Earth-space) (space-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-space) (space-space) 5.392	FIXED MOBILE 5.391 EARTH EXPLORATION-SATELLITE (Earth-space) (space-space) SPACE RESEARCH (Earth-space) (space-space) 5.392

2110 - 2120 MHz	FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-space) 5.388	MOBILE 5.388A 5.388
2120 - 2160 MHz	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388
2160 - 2170 MHz	FIXED MOBILE 5.388A 5.388B 5.388 5.392A	MOBILE 5.388A 5.388
2170 - 2200 MHz	FIXED MOBILE MOBILE-SATELLITE (space-Earth) 5.351A 5.388 5.389A 5.389F 5.392A	MOBILE-SATELLITE (space-Earth) 5.351A 5.388 5.389A
2200 - 2290 MHz	SPACE OPERATION (space-Earth) (space-space) EARTH EXPLORATION SATELLITE (space-Earth) (space-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-Earth) (space-space) 5.392	FIXED MOBILE 5.391 EARTH EXPLORATION SATELLITE (space-Earth) SPACE RESEARCH (space-Earth) 5.392
2290 - 2300 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-Earth)	FIXED MOBILE except aeronautical mobile
2300 - 2450 MHz	FIXED MOBILE Amateur Radiolocation 5.150 5.282 5.395	FIXED MOBILE Amateur (2304 - 2310 MHz, 2320 - 2322 MHz und 2400 – 2450 MHz) Amateur-Satellite (2400 - 2450 MHz) 5.282 5.150

2450 - 2483.5 MHz	FIXED MOBILE Radiolocation 5.150 5.397	FIXED MOBILE 5.150
2483.5 - 2500 MHz	FIXED MOBILE MOBILE-SATELLITE (space-Earth) 5.351A Radiolocation 5.150 5.371 5.397 5.398 5.399 5.400 5.402	 MOBILE MOBILE-SATELLITE (space-Earth) 5.351A 5.150 5.402
2500 - 2520 MHz	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-Earth) 5.403 5.351A 5.405 5.407 5.412 5.414	 MOBILE-SATELLITE (space-Earth) 5.403 5.351A MOBILE except aeronautical mobile 5.384A 5.403 5.414
2520 - 2655 MHz	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.403 5.405 5.412 5.417C 5.417D 5.418B 5.418C	 MOBILE except aeronautical mobile 5.384A 5.403 5.417C 5.417D 5.418B 5.418C
2655 - 2670 MHz	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.347A 5.413 5.416 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 5.149 5.420	 MOBILE except aeronautical mobile 5.384A 5.149

2670 - 2690 MHz	FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-space) 5.351A Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 5.149 5.412 5.419 5.420	MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-space) 5.351A 5.149 5.419
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
2700 - 2900 MHz	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423
2900 - 3100 MHz	RADIONAVIGATION 5.426 RADIOLOCATION 5.424A 5.425 5.427	RADIONAVIGATION 5.426 RADIOLOCATION 5.424A 5.425 5.427
3100 - 3300 MHz	RADIOLOCATION 5.149 5.428	RADIOLOCATION 5.149
3300 - 3400 MHz	RADIOLOCATION 5.149 5.429 5.430	RADIOLOCATION 5.149
3400 - 3600 MHz	FIXED FIXED-SATELLITE (space-Earth) Mobile Radiolocation 5.431	FIXED FIXED-SATELLITE (space-Earth) Radiolocation (3400 - 3410 MHz) A01
3600 - 4200 MHz	FIXED FIXED-SATELLITE (space-Earth) Mobile	FIXED FIXED-SATELLITE (space-Earth)

4200 - 4400 MHz	AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440	AERONAUTICAL RADIONAVIGATION 5.438 5.440
4400 - 4500 MHz	FIXED MOBILE	FIXED MOBILE
4500 - 4800 MHz	FIXED FIXED-SATELLITE (space-Earth) 5.441 MOBILE	FIXED FIXED-SATELLITE (space-Earth) 5.441 MOBILE
4800 - 4990 MHz	FIXED MOBILE 5.442 Radio Astronomy 5.149 5.339 5.443	FIXED MOBILE except aeronautical mobile A01 5.149
4990 - 5000 MHz	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) 5.149	FIXED MOBILE except aeronautical mobile 5.149
5000 - 5010 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-space) 5.367	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-space) 5.367
5010 - 5030 MHz	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-space) (space-space) 5.328B 5.443B 5.367	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-space) (space-space) 5.328B 5.443B 5.367
5030 - 5150 MHz	AERONAUTICAL RADIONAVIGATION 5.367 5.444 5.444A	AERONAUTICAL RADIONAVIGATION 5.367 5.444 5.444A

5150 – 5250 MHz	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.447 5.447B 5.447C	FIXED-SATELLITE (Earth-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.447B 5.447C
5250 - 5255 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.448A
5255 - 5350 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.448A
5350 - 5460 MHz	EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D
5460 - 5470 MHz	RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B

5470 - 5570 MHz	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B 5.450 5.451	AERONAUTICAL RADIONAVIGATION 5.450 MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B
5570 – 5650 MHz	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452	AERONAUTICAL RADIONAVIGATION 5.450 MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.452
5650 - 5725 MHz	RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space Research (deep space) 5.282 5.451 5.453 5.454 5.455	RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Amateur-Satellite (Earth-space) (5650 - 5670 MHz) 5.282
5725 - 5830 MHz	FIXED-SATELLITE (Earth-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 5.456	FIXED-SATELLITE (Earth-space) RADIOLOCATION Amateur Mobile A01 5.150
5830 - 5850 MHz	FIXED-SATELLITE (Earth-space) RADIOLOCATION Amateur Amateur-Satellite (space-Earth) 5.150 5.451 5.453 5.455 5.456	FIXED-SATELLITE (Earth-space) RADIOLOCATION Amateur Amateur-Satellite (space-Earth) Mobile A01 5.150

5850 - 5925 MHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE 5.150	FIXED FIXED-SATELLITE (Earth-space) MOBILE 5.150
5925 - 6700 MHz	FIXED FIXED-SATELLITE (Earth-space) 5.457A 5.457B MOBILE 5.149 5.440 5.458	FIXED FIXED-SATELLITE (Earth-space) 5.149 5.440
6700 - 7075 MHz	FIXED FIXED-SATELLITE (Earth-space) (space-Earth) 5.441 MOBILE 5.458 5.458A 5.458B 5.458C	FIXED FIXED-SATELLITE (Earth-space) (space-Earth) 5.441 5.458A 5.458B 5.458C
7075 - 7145 MHz	FIXED MOBILE 5.458 5.459	FIXED 5.458
7145 - 7235 MHz	FIXED MOBILE SPACE RESEARCH (Earth-space) 5.460 5.458 5.459	FIXED SPACE RESEARCH (Earth-space) 5.460 5.458
7235 - 7250 MHz	FIXED MOBILE 5.458	FIXED 5.458
7250 - 7300 MHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE 5.461	FIXED FIXED-SATELLITE (space-Earth)
7300 - 7450 MHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE except aeronautical mobile 5.461	FIXED FIXED-SATELLITE (space-Earth)

7450 - 7550 MHz	FIXED FIXED-SATELLITE (space-Earth) METEOROLOGICAL-SATELLITE (space-Earth) MOBILE except aeronautical mobile 5.461A	FIXED FIXED-SATELLITE (space-Earth) METEOROLOGICAL-SATELLITE (space-Earth) 5.461A
7550 - 7750 MHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-Earth)
7750 - 7850 MHz	FIXED METEOROLOGICAL-SATELLITE (space-Earth) 5.461B MOBILE except aeronautical mobile	FIXED METEOROLOGICAL-SATELLITE (space-Earth) 5.461B MOBILE except aeronautical mobile
7850 - 7900 MHz	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile
7900 - 8025 MHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE 5.461	FIXED FIXED-SATELLITE (Earth-space) MOBILE
8025 - 8175 MHz	EARTH EXPLORATION-SATELLITE (space-Earth) FIXED FIXED-SATELLITE (Earth-space) MOBILE 5.463 5.462A	FIXED FIXED-SATELLITE (Earth-space)
8175 - 8215 MHz	EARTH EXPLORATION-SATELLITE (space-Earth) FIXED FIXED-SATELLITE (Earth-space) MOBILE 5.463 METEOROLOGICAL-SATELLITE (Earth-space) 5.462A	FIXED FIXED-SATELLITE (Earth-space) METEOROLOGICAL-SATELLITE (Earth-space)

8215 - 8400 MHz	EARTH EXPLORATION-SATELLITE (space-Earth) FIXED FIXED-SATELLITE (Earth-space) MOBILE 5.463 5.462A	FIXED FIXED-SATELLITE (Earth-space)
8400 - 8500 MHz	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-Earth) 5.465 5.466	FIXED SPACE RESEARCH (space-Earth) 5.465 Radiolocation A01
8500 - 8550 MHz	RADIOLOCATION 5.468 5.469	RADIOLOCATION
8550 - 8650 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	EARTH EXPLORATION-SATELLITE (active) 5.469A RADIOLOCATION SPACE RESEARCH (active) 5.469A
8650 - 8750 MHz	RADIOLOCATION 5.468 5.469	RADIOLOCATION
8750 - 8850 MHz	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470
8850 - 9000 MHz	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	RADIOLOCATION RADIONAVIGATION 5.473
9000 - 9200 MHz	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.471	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation

9200 - 9300 MHz	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474	RADIOLOCATION RADIONAVIGATION 5.473 5.474
9300 - 9500 MHz	RADIONAVIGATION 5.476 Radiolocation 5.427 5.474 5.475	RADIONAVIGATION 5.476 Radiolocation 5.427 5.474 5.475
9500 - 9800 MHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	EARTH EXPLORATION-SATELLITE (active) 5.476A RADIOLOCATION SPACE RESEARCH (active) 5.476A
9800 - 10000 MHz	RADIOLOCATION Fixed 5.477 5.478 5.479	RADIOLOCATION Fixed
10 - 10.45 GHz	FIXED MOBILE RADIOLOCATION Amateur 5.479	FIXED MOBILE Amateur (10.368 - 10.370 GHz and 10.4 - 10.450 GHz)
10.45 - 10.5 GHz	RADIOLOCATION Amateur Amateur-Satellite 5.481	FIXED A01 RADIOLOCATION MOBILE A01 Amateur Amateur-Satellite
10.5 - 10.55 GHz	FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation
10.55 - 10.6 GHz	FIXED MOBILE except aeronautical mobile Radiolocation	FIXED MOBILE except aeronautical mobile Radiolocation

10.6 - 10.68 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482	FIXED MOBILE except aeronautical mobile Radiolocation (10.6 - 10.65 GHz) A01 5.149 5.482
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
10.7 - 11.7 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.441 5.484A (Earth-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-Earth) 5.441 5.484A (Earth-space) 5.484 Land Mobile-Satellite (space-Earth) A01
11.7 - 12.5 GHz	FIXED BROADCASTING BROADCASTING-SATELLITE MOBILE except aeronautical mobile 5.487 5.487A 5.492	BROADCASTING-SATELLITE 5.487 5.487A 5.492
12.5 - 12.75 GHz	FIXED-SATELLITE (space-Earth) 5.484A (Earth-space) 5.494 5.495 5.496	FIXED-SATELLITE (space-Earth) 5.484A FIXED 5.496
12.75 - 13.25 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.441 MOBILE Space Research (deep space) (space-Earth)	FIXED FIXED-SATELLITE (Earth-space) 5.441
13.25 - 13.4 GHz	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499	EARTH EXPLORATION-SATELLITE (active) 5.498A AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A

13.4 - 13.75 GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (5.501A) Standard Frequency and Time Signal-Satellite (Earth-space) 5.499 5.500 5.501 5.501B	EARTH EXPLORATION-SATELLITE (active) 5.501B RADIOLOCATION SPACE RESEARCH 5.501A 5.501B
13.75 - 14 GHz	FIXED-SATELLITE (Earth-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-space) Space Research 5.499 5.500 5.501 5.502 5.503	FIXED-SATELLITE (Earth-space) 5.484A 5.502 RADIOLOCATION
14 - 14.25 GHz	FIXED-SATELLITE (Earth-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-Satellite (Earth-space) 5.504C 5.506A Space Research 5.504A 5.505	FIXED-SATELLITE (Earth-space) 5.484A 5.506 Mobile-Satellite (Earth-space) 5.504A
14.25 - 14.3 GHz	FIXED-SATELLITE (Earth-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-Satellite (Earth-space) 5.506A 5.508A Space Research 5.504A 5.505 5.508 5.509	FIXED-SATELLITE (Earth-space) 5.484A 5.506 Mobile-Satellite (Earth-space) 5.504A
14.3 - 14.4 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-Satellite (Earth-space) 5.506A 5.509A Radionavigation-Satellite 5.504A	FIXED-SATELLITE (Earth-space) 5.484A 5.506 Mobile-Satellite (Earth-space) 5.504A

14.4 - 14.47 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-Satellite (Earth-space) 5.506A 5.509A Space Research (space-Earth) 5.504A	FIXED-SATELLITE (Earth-space) 5.484A 5.506 Mobile-Satellite (Earth-space) 5.504A
14.47 - 14.5 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-Satellite (Earth-space) 5.504B 5.506A 5.509A Radio Astronomy 5.149 5.504A	FIXED-SATELLITE (Earth-space) 5.484A 5.506 Mobile-Satellite (Earth-space) 5.504B 5.149 5.504A
14.5 - 14.8 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.510 MOBILE Space Research	FIXED MOBILE
14.8 - 15.35 GHz	FIXED MOBILE Space Research 5.339	FIXED MOBILE
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
15.4 - 15.43 GHz	AERONAUTICAL RADIONAVIGATION 5.511D	AERONAUTICAL RADIONAVIGATION 5.511D

15.43 - 15.63 GHz	FIXED-SATELLITE (Earth-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	FIXED-SATELLITE (Earth-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C
15.63 - 15. 7 GHz	AERONAUTICAL RADIONAVIGATION 5.511D	AERONAUTICAL RADIONAVIGATION 5.511D
15.7 - 16.6 GHz	RADIOLOCATION 5.512 5.513	RADIOLOCATION FIXED 5.512 MOBILE 5.512
16.6 - 17.1 GHz	RADIOLOCATION Space Research (deep space) (Earth-space) 5.512 5.513	RADIOLOCATION FIXED 5.512 MOBILE 5.512
17.1 - 17.2 GHz	RADIOLOCATION 5.512 5.513	RADIOLOCATION FIXED 5.512 MOBILE 5.512
17.2 - 17.3 GHz	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A	EARTH EXPLORATION-SATELLITE (active) 5.513A RADIOLOCATION FIXED 5.512 MOBILE 5.512 SPACE RESEARCH (active) 5.513A
17.3 - 17.7 GHz	FIXED-SATELLITE (Earth-space) 5.516 (space-Earth) 5.516A 5.516B Radiolocation 5.514	FIXED-SATELLITE (Earth-space) 5.516 (space-Earth) 5.516A 5.516B Radiolocation 5.514
17.7 - 18.1 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.484A (Earth-space) 5.516 MOBILE	FIXED FIXED-SATELLITE (space-Earth) 5.484A (Earth-space) 5.516

18.1 - 18.4 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.484A 5.516B (Earth-space) 5.520 MOBILE 5.519 5.521	FIXED FIXED-SATELLITE (space-Earth) 5.484A
18.4 - 18.6 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.484A 5.516B MOBILE	FIXED FIXED-SATELLITE (space-Earth) 5.484A
18.6 - 18.8 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-Earth) 5.522B MOBILE except aeronautical mobile Space Research (passive) 5.522A 5.522C	FIXED 5.522A FIXED-SATELLITE (space-Earth) 5.522A 5.522B Earth Exploration-Satellite (passive) A01
18.8 - 19.3 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.516B 5.523A MOBILE	FIXED FIXED-SATELLITE (space-Earth) 5.523A
19.3 - 19.7 GHz	FIXED FIXED-SATELLITE (Earth-space) (space-Earth) 5.523B 5.523C 5.523D 5.523E MOBILE	FIXED FIXED-SATELLITE (space-Earth) 5.523C 5.523D 5.523E
19.7 - 20.1 GHz	FIXED-SATELLITE (space-Earth) 5.484A 5.516B Mobile-Satellite (space-Earth) 5.524	FIXED-SATELLITE (space-Earth) 5.484A 5.516B Mobile-Satellite (space-Earth)
20.1 - 20.2 GHz	FIXED-SATELLITE (space-Earth) 5.484A 5.516B MOBILE-SATELLITE (space-Earth) 5.524 5.525 5.526 5.527 5.528	FIXED-SATELLITE (space-Earth) 5.484A 5.516B MOBILE-SATELLITE (space-Earth) 5.525 5.526 5.527 5.528

20.2 - 21.2 GHz	FIXED-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) Standard Frequency and Time Signal (space-Earth) 5.524	FIXED-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth)
21.2 - 21.4 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)
21.4 - 22 GHz	FIXED MOBILE BROADCASTING-SATELLITE 5.347A 5.530	FIXED MOBILE BROADCASTING-SATELLITE 5.347A Radiolocation (21,625 – 22 GHz) A01 5.530
22 - 22.21 GHz	FIXED MOBILE except aeronautical mobile 5.149	FIXED Radiolocation A01 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	FIXED Radiolocation A01 5.149
22.5 - 22.55 GHz	FIXED MOBILE	FIXED Radiolocation A01
22.55 - 23.55 GHz	FIXED INTER-SATELLITE MOBILE 5.149	FIXED MOBILE Radiolocation A01 5.149
23.55 - 23.6 GHz	FIXED MOBILE	FIXED MOBILE Radiolocation A01

23.6 - 24 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation A01 5.340
24 - 24.05 GHz	AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE Mobile A02 Radiolocation A01 5.150
24.05 - 24.25 GHz	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.150	RADIOLOCATION Amateur Mobile A01 5.150
24.25 - 24.45 GHz	FIXED	FIXED MOBILE A01 Radiolocation A01
24.45 - 24.65 GHz	FIXED INTER-SATELLITE	FIXED MOBILE (24.45 - 24.5 GHz) A01 Radiolocation A01
24.65 - 24.75 GHz	FIXED INTER-SATELLITE	FIXED Radiolocation A01
24.75 - 25.25 GHz	FIXED	FIXED Radiolocation A01
25.25 - 25.5 GHz	FIXED INTER-SATELLITE 5.536 MOBILE Standard Frequency and Time Signal-Satellite (Earth-space)	FIXED Radiolocation A01

25.5 - 27 GHz	EARTH EXPLORATION-SATELLITE (space-Earth) 5.536A 5.536B FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (space-Earth) 5.536A 5.536C Standard Frequency and Time Signal-Satellite (Earth-space)	FIXED MOBILE (26.5 - 27 GHz) Radiolocation (25.5 – 26,625 GHz A01
27 - 27.5 GHz	FIXED INTER-SATELLITE 5.536 MOBILE	FIXED MOBILE
27.5 - 28.5 GHz	FIXED 5.537A FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.539 MOBILE 5.538 5.540	FIXED FIXED-SATELLITE (Earth-space) (space-Earth) 5.484A 5.516B 5.538 5.539 5.540
28.5 - 29.1 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.523A 5.539 MOBILE Earth Exploration-Satellite (Earth-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.523A 5.539 5.540
29.1 - 29.5 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth Exploration-Satellite (Earth-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A 5.540
29.5 - 29.9 GHz	FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.539 Earth Exploration-Satellite (Earth-space) 5.541 Mobile-Satellite (Earth-space) 5.540 5.542	FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.539 Mobile-Satellite (Earth-space) 5.540

29.9 - 30 GHz	FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-space) Earth Exploration-Satellite (Earth-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542	FIXED-SATELLITE (Earth-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-space) 5.525 5.526 5.527 5.538 5.540
30 - 31 GHz	FIXED-SATELLITE (Earth-space) MOBILE-SATELLITE (Earth-space) Standard Frequency and Time Signal-Satellite (space-Earth) 5.542	FIXED-SATELLITE (Earth-space) (space-Earth) A01 MOBILE-SATELLITE (Earth-space)
31 - 31.3 GHz	FIXED 5.543A MOBILE Standard Frequency and Time Signal-Satellite (space-Earth) Space Research 5.544 5.545 5.149	FIXED MOBILE 5.149
31.3 - 31.5 GHz	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 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) 5.149
31.8 - 32 GHz	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-Earth) 5.547 5.547B 5.548	FIXED 5.547 5.547A RADIONAVIGATION

32 - 32.3 GHz	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space -Earth) 5.547 5.547C 5.548	FIXED 5.547 5.547A RADIONAVIGATION
32.3 - 33 GHz	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	FIXED 5.547 5.547A RADIONAVIGATION
33 - 33.4 GHz	FIXED 5.547A RADIONAVIGATION 5.547 5.547E	FIXED 5.547 5.547A RADIONAVIGATION
33.4 - 34.2 GHz	RADIOLOCATION 5.549	RADIOLOCATION
34.2 - 34.7 GHz	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-space) 5.549	RADIOLOCATION
34.7 - 35.2 GHz	RADIOLOCATION Space Research 5.550 5.549	RADIOLOCATION
35.2 - 35.5 GHz	METEOROLOGICAL AIDS RADIOLOCATION 5.549	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

36 - 37 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149
37 - 37.5 GHz	FIXED MOBILE SPACE RESEARCH (space-Earth) 5.547	FIXED 5.547
37.5 - 38 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE SPACE RESEARCH (space-Earth) Earth Exploration-Satellite (space-Earth) 5.547	FIXED FIXED-SATELLITE (space-Earth) 5.547
38 - 39.5 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE Earth Exploration-Satellite (space-Earth) 5.547	FIXED FIXED-SATELLITE (space-Earth) 5.547
39.5 - 40 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-Earth) Earth Exploration-Satellite (space-Earth) 5.547	FIXED FIXED-SATELLITE (space-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-Earth) 5.547

40 - 40.5 GHz	EARTH EXPLORATION-SATELLITE (Earth-space) FIXED FIXED-SATELLITE (space-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-Earth) SPACE RESEARCH (Earth-space) Earth Exploration-Satellite (space-Earth)	FIXED FIXED-SATELLITE (space-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-Earth)
40.5 - 41 GHz	FIXED FIXED-SATELLITE (space-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547	FIXED BROADCASTING BROADCASTING-SATELLITE 5.547
41 - 42.5 GHz	FIXED FIXED-SATELLITE (space-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile 5.547 5.551F 5.551H 5.551I	FIXED BROADCASTING BROADCASTING-SATELLITE 5.547 5.551H 5.551I
42.5 – 43.5 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.547	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE except aeronautical mobile 5.149 5.547
43.5 – 47 GHz	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554
47 – 47.2 GHz	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE

47.2 - 47.5 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE 5.552A
47.5 - 47.9 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B 5.554A MOBILE	FIXED FIXED-SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B 5.554A MOBILE
47.9 – 48.2 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE 5.552A
48.2 – 48.54 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B 5.554A MOBILE	FIXED FIXED-SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B 5.554A MOBILE
48.54 – 49.44 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE 5.149 5.340 5.555 5.555B	FIXED FIXED-SATELLITE (Earth-space) 5.552 MOBILE 5.149 5.340 5.555B
49.44 - 50.2 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B 5.554A MOBILE 5.555B	FIXED FIXED-SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B 5.554A MOBILE 5.555B
50.2 - 50.4 GHz	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)
50.4 - 51.4 GHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE Mobile-Satellite (Earth-space)	FIXED FIXED-SATELLITE (Earth-space) Mobile-Satellite (Earth-space)

51.4 - 52.6 GHz	FIXED MOBILE 5.547 5.556	FIXED MOBILE 5.547
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
54.25 - 55.78 GHz	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive)
55.78 - 56.9 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A SPACE RESEARCH (passive) 5.547
56.9 - 57 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	EARTH EXPLORATION-SATELLITE (passive) FIXED 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 5.557	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE 5.558 SPACE RESEARCH (passive) 5.547

58.2 - 59 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION-SATELLITE (passive) FIXED SPACE RESEARCH (passive) 5.547
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 MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)
59.3 - 64 GHz	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED (59,3 - 62 GHz) A01 RADIOLOCATION 5.559 MOBILE (62 - 64 GHz) 5.558 A01 5.138
64 - 65 GHz	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED MOBILE except aeronautical mobile 5.547
65 - 66 GHz	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION-SATELLITE FIXED MOBILE SPACE RESEARCH 5.547
66 - 71 GHz	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554
71 - 74 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE MOBILE-SATELLITE (space-Earth)	FIXED FIXED-SATELLITE (space-Earth) MOBILE MOBILE-SATELLITE (space-Earth)

74 - 76 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space Research (space-Earth) 5.559A 5.561	FIXED FIXED-SATELLITE (space-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space Research (space-Earth) 5.561
76 - 77.5 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite Space Research (space-Earth) 5.149	RADIOLOCATION Amateur Amateur-Satellite 5.149
77.5 - 78 GHz	AMATEUR AMATEUR-SATELLITE Radio astronomy Space Research (space-Earth) 5.149	AMATEUR AMATEUR-SATELLITE Radiolocation A01 5.149
78 - 79 GHz	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space Research (space-Earth) 5.149 5.560	RADIOLOCATION Amateur Amateur-satellite 5.149 5.560
79 - 81 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space Research (space-Earth) 5.149	RADIOLOCATION Amateur Amateur-satellite 5.149
81 - 84 GHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE MOBILE-SATELLITE (Earth-space) RADIO ASTRONOMY Space Research (space-Earth) 5.149 5.560A	FIXED FIXED-SATELLITE (Earth-space) MOBILE MOBILE-SATELLITE (Earth-space) 5.149

84 - 86 GHz	FIXED FIXED-SATELLITE (Earth-space) 5.561A MOBILE RADIO ASTRONOMY 5.149	FIXED FIXED-SATELLITE (Earth-space) 5.561A MOBILE 5.149
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
92 - 94 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIOLOCATION 5.149
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) 5.562 5.562A
94.1 - 95 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIOLOCATION 5.149
95 - 100 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554

100 - 102 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
102 - 105 GHz	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED MOBILE 5.149
105 - 109.5GHz	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
109.5 - 111.8GHz	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
111.8 - 114.25 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
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

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) Mobile (122,0 – 122,25 GHz) A02 5.138 5.341
122.25 - 123 GHz	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138
123 - 130 GHz	FIXED-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio Astronomy 5.562D 5.149 5.554	FIXED-SATELLITE (space-Earth) MOBILE-SATELLITE (space-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio Astronomy 5.562D 5.149 5.554
130 - 134 GHz	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
134 - 136 GHz	AMATEUR AMATEUR-SATELLITE Radio Astronomy	AMATEUR AMATEUR-SATELLITE Radio Astronomy
136 - 141 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite 5.149

141 - 148.5 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149
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
151.5 - 155.5 GHz	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149
155.5 - 158.5 GHz	EARTH EXPLORATION-SATELLITE (passive) 5.562F FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562G	EARTH EXPLORATION-SATELLITE (passive) 5.562F FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562G
158.5 - 164 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE MOBILE-SATELLITE (space-Earth)	FIXED FIXED-SATELLITE (space-Earth) MOBILE MOBILE-SATELLITE (space-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
167 - 174.5 GHz	FIXED FIXED-SATELLITE (space-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D	FIXED FIXED-SATELLITE (space-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D

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	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340
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
200 - 202 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

202 - 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
209 - 217 GHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY 5.149 5.341	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY 5.149 5.341
217 - 226 GHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 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
231.5 - 232 GHz	FIXED MOBILE Radiolocation	FIXED MOBILE Radiolocation
232 - 235 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE Radiolocation	FIXED FIXED-SATELLITE (space-Earth) MOBILE Radiolocation
235 - 238 GHz	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-Earth) SPACE RESEARCH (passive) 5.563A 5.563B

238 - 240 GHz	FIXED FIXED-SATELLITE (space-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	FIXED FIXED-SATELLITE (space-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE
240 - 241 GHz	FIXED MOBILE RADIOLOCATION	FIXED MOBILE RADIOLOCATION
241 - 248 GHz	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite 5.138 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite Mobile (244 – 246 GHz) A02 5.138 5.149
248 - 250 GHz	AMATEUR AMATEUR-SATELLITE Radio Astronomy 5.149	AMATEUR AMATEUR-SATELLITE Radio Astronomy 5.149
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
252 - 265 GHz	FIXED MOBILE MOBILE-SATELLITE (Earth-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE MOBILE-SATELLITE (Earth-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554
265 - 275 GHz	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY 5.149 5.563A
275 - 1 000 GHz	(Not allocated) 5.565	(Not allocated) 5.565

Anlage 2

Footnotes to the Austrian Frequency Allocation Table (Column 2 and 3)

and other relevant provisions of the Radio Regulations

I. Footnotes according to Radio Regulations (RR)

5.53 Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.

5.54 Administrations conducting scientific research using frequencies below 9 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.

5.55 *Additional allocation:* in Armenia, Azerbaijan, Bulgaria, Georgia, Kyrgyzstan, the Russian Federation, Tajikistan and Turkmenistan, the band 14 - 17 kHz is also allocated to the radionavigation service on a primary basis.

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, Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Tajikistan and Turkmenistan, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-03)

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, Georgia, Kazakstan, Kyrgyzstan, the Russian Federation, Tajikistan and Turkmenistan, the band 67 - 70 kHz is also allocated to the radionavigation service on a primary basis.

5.59 *Different category of service:* in Bangladesh and Pakistan, the allocation of the bands 70 - 72 kHz and 84 - 86 kHz to the fixed and maritime mobile service is on a primary basis (see No. **5.33**).

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.

5.61 In Region 2, the establishment and operation of stations in the maritime radionavigation service in the bands 70 - 90 kHz and 110 - 130 kHz shall be subject to agreement obtained under No. **9.21** with administrations whose services, operating in accordance with the Table, may be affected. However, stations of the fixed, maritime mobile and radiolocation services shall not cause harmful interference to stations in the maritime radionavigation service established under such agreements.

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.

5.65 *Different category of service:* in Bangladesh, the allocation of the bands 112 - 117.6 kHz and 126 - 129 kHz to the fixed and maritime mobile services is on a primary basis (see No. **5.33**).

5.66 *Different category of service:* in Germany, the allocation 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 Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the 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.

5.68 *Alternative allocation:* in Angola, Burundi, Congo (Rep. of the), Malawi, Dem. Rep. of the Congo, Rwanda and South Africa, the band 160-200 kHz is allocated to the fixed service on a primary basis. (WRC-03)

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, Cameroon, the Central African Rep., Congo (Rep. of the), Ethiopia, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Tanzania, Chad, Zambia and Zimbabwe, the band 200-283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis. (WRC

5.71 *Alternative allocation:* in Tunisia, the band 255 - 283.5 kHz is allocated to the broadcasting service on a primary basis.

5.72 Norwegian stations of the fixed service situated in northern areas (north of 60° N) subject to auroral disturbances are allowed to continue operation on four frequencies in the bands 283.5 - 490 kHz and 510 - 526.5 kHz.

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.

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, Georgia, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Bulgaria and 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.

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 Territories of Region 3, India, Indonesia (until 1 January 2005), Iran (Islamic Republic of), Japan, Pakistan, Papua New Guinea and Sri Lanka, the allocation of the band 415 - 495 kHz to the aeronautical radionavigation service is on a primary basis. Administrations in these countries shall take all practical steps necessary to ensure that aeronautical radionavigation stations in the band 435 - 495 kHz do not cause interference to reception by coast stations of ship stations transmitting on frequencies designated for ship stations on a worldwide basis (see No. **52.39**).

5.78 *Different category of service:* in Cuba, the United States of America and Mexico, the allocation of the band 415 - 435 kHz to the aeronautical radionavigation service is on a primary basis.

5.79 The use of the bands 415 - 495 kHz and 505 - 526.5 kHz (505 - 510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.

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-97)**).

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.

5.82 In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see Resolution **331 (Rev.WRC-97)**), 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 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.

5.83 The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles **31** and **52,** and in Appendix **13**.

5.84 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles **31** and **52** and in Appendix **13.**

5.86 In Region 2, in the band 525 - 535 kHz the carrier power of broadcasting stations shall not exceed 1 kW during the day and 250 W at night.

5.87 *Additional allocation:* in Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland and Zimbabwe, the band 526.5-535 kHz is also allocated to the mobile service on a secondary basis. (WRC-03)

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 adiministrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime.

5.88 *Additional allocation:* in China, the band 526.5 - 535 kHz is also allocated to the aeronautical radionavigation service on a secondary basis.

5.89 In Region 2, the use of the band 1 605 - 1 705 kHz by stations of the broadcasting service is subject to the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

The examination of frequency assignments to stations of the fixed and mobile services in the band 1 625 - 1 705 kHz shall take account of the allotments appearing in the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

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.

5.91 *Additional allocation:* in the Philippines and Sri Lanka, the band 1 606.5 - 1 705 kHz is also allocated to the broadcasting service on a secondary basis.

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 Angola, Armenia, Azerbaijan, Belarus, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, the Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, the bands 1 625 - 1 635 kHz, 1 800 - 1 810 kHz and 2 160 - 2 170 kHz and, in Bulgaria, the bands 1 625 - 1 635 kHz and 1 800 - 1 810 kHz, are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. **9.21**.

5.96 In Germany, Armenia, Austria, Azerbaijan, Belarus, 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 bands 1 715-1 800 kHz and 1 850-2 000 kHz. However, when allocating the 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-03)

5.97 In Region 3, the Loran system operates either on 1 850 kHz or 1 950 kHz, the bands occupied being 1 825 - 1 875 kHz and 1 925 - 1 975 kHz respectively. Other services to which the band 1 800 - 2 000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1 850 kHz or 1 950 kHz.

5.98 *Alternative allocation:* in Angola, Armenia, Azerbaijan, Belarus, Belgium, Bulgaria, Cameroon, Congo (Rep. of the), Denmark, Egypt, Eritrea, Spain, Ethiopia, the Russian Federation, Georgia, Greece, Italy, Kazakhstan, Lebanon, Lithuania, Moldova, Syrian Arab Republic, Kyrgyzstan, Somalia, Tajikistan, Tunisia, Turkmenistan, Turkey and Ukraine, the band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-03)

5.99 *Additional allocation:* in Saudi Arabia, Austria, Bosnia and Herzegovina, Iraq, Libyan Arab Jamahiriya, Uzbekistan, Slovakia, Romania, Serbia and Montenegro. 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-03)

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**.

5.101 *Alternative allocation:* in Burundi and Lesotho, the band 1 810 - 1 850 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

5.102 *Alternative allocation:* in Argentina, Bolivia, Chile, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 1 850 - 2 000 kHz is allocated to the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services on a primary basis.

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.

5.105 In Region 2, except in Greenland, coast stations and ship stations using radiotelephony in the band 2 065 - 2 107 kHz shall be limited to class J3E emissions and to a peak envelope power not exceeding 1 kW. Preferably, the following carrier frequencies should be used: 2 065.0 kHz, 2 079.0 kHz, 2 082.5 kHz, 2 086.0 kHz, 2 093.0 kHz, 2 096.5 kHz, 2 100.0 kHz and 2 103.5 kHz. In Argentina and Uruguay, the carrier frequencies 2 068.5 kHz and 2 075.5 kHz are also used for this purpose, while the frequencies within the band 2 072 - 2 075.5 kHz are used as provided in No. **52.165**.

5.106 In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2 065 kHz and 2 107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the Bureau should be drawn to these provisions.

5.107 *Additional allocation:* in Saudi Arabia, Eritrea, Ethiopia, Iraq, Lesotho, Libyan Arab Jamahiriya, Somalia and Swaziland, the 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-03)

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** and in Appendix **13**.

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, 156.8 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** and in Appendix **13**.

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.

5.112 *Alternative allocation:* in Bosnia and Herzegovina, Denmark, Malta, Serbia and Montenegro. and Sri Lanka, the band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-03)

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 Bosnia and Herzegovina, Denmark, Iraq, Malta, and Serbia and Montenegro, the band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-03)

5.115 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article **31** and Appendix **13** by stations of the maritime mobile service engaged in coordinated search and rescue operations.

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 Bosnia and Herzegovina, Côte d'Ivoire, Denmark, Egypt, Liberia, Malta, Serbia and Montenegro, Sri Lanka and Togo, the band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-03)

5.118 *Additional allocation:* in the United States, Mexico, Peru and Uruguay, the band 3 230-3 400 kHz is also allocated to the radiolocation service on a secondary basis. (WRC-03)

5.119 *Additional allocation:* in Honduras, Mexico, Peru and Venezuela, the band 3 500 - 3 750 kHz is also allocated to the fixed and mobile services on a primary basis.

5.122 *Alternative allocation:* in Argentina, Bolivia, Chile, Ecuador, Paraguay, Peru and Uruguay, the band 3 750 - 4 000 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

5.123 *Additional allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the 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**.

5.125 *Additional allocation:* in Greenland, the band 3 950 - 4 000 kHz is also allocated to the broadcasting service on a primary basis. The power of the broadcasting stations operating in this band shall not exceed that necessary for a national service and shall in no case exceed 5 kW.

5.126 In Region 3, the stations of those services to which the band 3 995 - 4 005 kHz is allocated may transmit standard frequency and time signals.

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 In Afghanistan, Argentina, Armenia, Azerbaijan, Belarus, Botswana, Burkina Faso, the Central African Republic, China, Georgia, India, Kazakstan, Mali, Niger, Kyrgyzstan, Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, in the bands 4 063 - 4 123 kHz, 4 130 - 4 133 kHz and 4 408 - 4 438 kHz, stations of limited power in the fixed service which are situated at least 600 km from the coast may operate on condition that harmful interference is not caused to the maritime mobile service.

5.129 On condition that harmful interference is not caused to the maritime mobile service, the frequencies in the 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.

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** and in Appendix **13**.

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.

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**).

5.133 *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Uzbekistan, Kyrgyzstan, Russian Federation, 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**).

5.134 The use of the 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 as from 1 April 2007 is subject to the application of the procedure of Article **12**. Administrations are urged to use these bands to facilitate the introduction of digitally modulated emissions in accordance with the provisions of Resolution **517 (Rev.WRC-03)**. (WRC-03)

5.136 The band 5 900 - 5 950 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis, as well as to the following services: in Region 1 to the land mobile service on a primary basis, in Region 2 to the mobile except aeronautical mobile (R) service on a primary basis, and in Region 3 to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, 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 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.

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.

5.138A Until 29 March 2009, the band 6 765-7 000 kHz is allocated to the fixed service on a primary basis and to the land mobile service on a secondary basis. After this date, this band is allocated to the fixed and the mobile except aeronautical mobile (R) services on a primary basis. (WRC-03)

5.139 *Different category of service:* until 29 March 2009, in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 6 765-7 000 kHz to the land mobile service is on a primary basis (see No. **5.33**). (WRC-03)

5.140 *Additional allocation:* in Angola, Iraq, Kenya, Rwanda, Somalia and Togo, the band 7 000-7 050 kHz is also allocated to the fixed service on a primary basis. (WRC-03)

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

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:* after 29 March 2009, in Algeria, Saudi Arabia, Australia, Bahrain, Botswana, Brunei Darussalam, China, Comoros, Korea (Rep. of), Diego Garcia, Djibouti, Egypt, United Arab Emirates, Eritrea, Indonesia, Iran (Islamic Republic of), Japan, Jordan, Kuwait, Libyan Arab Jamahiriya, Morocco, Mauritania, New Zealand, Oman, Papua New Guinea, Qatar, Syrian Arab Republic, Singapore, Sudan, Tunisia, Viet Nam and Yemen, the 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-03)

5.141C In Regions 1 and 3, the band 7 100-7 200 kHz is allocated to the broadcasting service until 29 March 2009 on a primary basis. (WRC-03)

5.142 Until 29 March 2009, the use of the band 7 100-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. After 29 March 2009 the use of the band 7 200-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. (WRC-03)

5.143 The band 7 300 - 7 350 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis and to the land mobile service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, 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.

5.143A In Region 3, 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, frequencies in this band may be used by stations in the above-mentioned services, 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-03)

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), Jordan, Kuwait, Libyan Arab Jamahiriya, Morocco, Mauritania, Oman, Qatar, Syrian Arab Republic, 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-03)

5.143D In Region 2, the band 7 350-7 400 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, frequencies in this band may be used by stations in the above-mentioned services, 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-03)

5.143E Until 29 March 2009, the band 7 450-8 100 kHz is allocated to the fixed service on a primary basis and to the land mobile service on a secondary basis. (WRC-03)

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** and in Appendix **13**.

5.146 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 are allocated to the fixed service on a primary basis until 1 April 2007, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in these bands 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.

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,
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,
42.77 - 42.87 GHz,
43.07 - 43.17 GHz,
43.37 - 43.47 GHz,
48.94 - 49.04 GHz,
76 - 86 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

3 345.8 - 3 352.5 MHz, 92 - 94 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**).

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 The bands 13 570 - 13 600 kHz and 13 800 - 13 870 kHz are allocated, until 1 April 2007, to the fixed service on a primary basis and to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in these bands may be used by stations in the above-mentioned services, 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.

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, Bulgaria, the Russian Federation, Georgia, Kazakhstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., Tajikistan, Turkmenistan and Ukraine, the band 21 850-21 870 kHz is also allocated to the aeronautical mobile (R) services on a primary basis. (WRC-03)

5.155A In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, the Russian Federation, 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.

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.

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

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.

5.162 *Additional allocation:* in Australia and New Zealand, the band 44 - 47 MHz is also allocated to the broadcasting service on a primary basis.

5.162A *Additional allocation:* in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Republic, the United Kingdom, the Russian Federation, Sweden and Switzerland the 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)**.

5.163 *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., Tajikistan, Turkmenistan and Ukraine, the 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-03)

5.164 *Additional allocation:* in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Botswana, Bulgaria, Côte d'Ivoire, Denmark, Spain, Estonia, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libyan Arab Jamahiriya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syrian Arab Republic, the United Kingdom, Serbia and Montenegro, Slovenia, Sweden, Switzerland, Swaziland, Chad, Togo, Tunisia and Turkey, the band 47-68 MHz, in Romania the band 47-58 MHz, in South Africa the band 47-50 MHz, and in the Czech Rep. the band 66-68 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 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 band. (WRC-03)

5.165 *Additional allocation:* in Angola, Cameroon, the Congo, Madagascar, Mozambique, Somalia, Sudan, Tanzania and Chad, the band 47 - 68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

5.166 *Alternative allocation:* in New Zealand, the band 50 - 51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53 - 54 MHz is allocated to the fixed and mobile services on a primary basis.

5.167 *Alternative allocation:* in Bangladesh, Brunei Darussalam, India, Indonesia, Iran (Islamic Republic of), Malaysia, Pakistan, Singapore and Thailand, the band 50 - 54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis.

5.168 *Additional allocation:* in Australia, China and the Democratic People's Republic of Korea, the band 50 - 54 MHz is also allocated to the broadcasting service on a primary basis.

5.169 *Alternative allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Zambia and Zimbabwe, the band 50 - 54 MHz is allocated to the amateur service on a primary basis.

5.170 *Additional allocation:* in New Zealand, the band 51 - 53 MHz is also allocated to the fixed and mobile services on a primary basis.

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

5.172 *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 54 - 68 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).

5.173 *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 68 - 72 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).

5.174 *Alternative allocation:* in Bulgaria, Hungary and Romania, the band 68-73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference (Geneva, 1960). (WRC-03)

5.175 *Alternative allocation:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 68 - 73 MHz and 76 - 87.5 MHz are allocated to the broadcasting service 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.

5.176 *Additional allocation:* in Australia, China, Korea (Rep. of), Estonia (subject to Agreement obtained under No. **9.21**), the Philippines, the Dem. People's Rep. of Korea and Samoa, the band 68 - 74 MHz is also allocated to the broadcasting service on a primary basis.

5.177 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, the Russian Federation, Georgia, Kazakhstan, Latvia, Moldova, 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-03)

5.178 *Additional allocation:* in Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Guyana, Honduras and Nicaragua, the band 73 - 74.6 MHz is also allocated to the fixed and mobile services on a secondary basis.

5.179 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, China, the Russian Federation, Georgia, Kazakhstan, Lithuania, Moldova, Mongolia, Kyrgyzstan, Slovakia, Tajikistan, Turkmenistan and Ukraine, the bands 74.6-74.8 MHz and 75.2-75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only. (WRC-03)

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 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)

5.182 *Additional allocation:* in Western Samoa, the band 75.4 - 87 MHz is also allocated to the broadcasting service on a primary basis.

5.183 *Additional allocation:* in China, Korea (Rep. of), Japan, the Philippines and the Democratic People's Republic of Korea, the band 76 - 87 MHz is also allocated to the broadcasting service on a primary basis.

5.184 *Additional allocation:* in Bulgaria and Romania, the band 76 - 87.5 MHz is also 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).

5.185 *Different category of service:* in the United States, the French Overseas Departments in Region 2, Guyana, Jamaica, Mexico and Paraguay, the allocation of the band 76 - 88 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).

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).

5.188 *Additional allocation:* in Australia, the band 85 - 87 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service in Australia is subject to special agreements between the administrations concerned.

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**.

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.

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

5.197 *Additional allocation:* in Japan, Pakistan and Syria, 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**.

5.197A The band 108-117.975 MHz may also be used by the aeronautical mobile (R) service on a primary basis, limited to systems that transmit navigational information in support of air navigation and surveillance functions in accordance with recognized international aviation standards. Such use shall be in accordance with Resolution **413 (WRC-03)** and shall not cause harmful interference to nor claim protection from stations operating in the aeronautical radionavigation service which operate in accordance with international aeronautical standards. (WRC-03)

5.198 *Additional allocation:* the band 117.975 - 136 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis, subject to agreement obtained under No. **9.21**.

5.199 The bands 121.45 - 121.55 MHz and 242.95 - 243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Appendix **13**).

5.200 In the band 117.975 - 136 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** and Appendix **13** for distress and safety purposes with stations of the aeronautical mobile service.

5.201 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Japan, Kazakstan, Latvia, Moldova, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the 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.

5.202 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, United Arab Emirates, Georgia, Iran (Islamic Republic of), Jordan, Latvia, Moldova, Oman, Uzbekistan, Poland, Syria, Kyrgyzstan, Slovakia, the Czech Rep., Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the 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.

5.203 In the band 136 - 137 MHz, existing operational meteorological satellites may continue to operate, under the condition defined in No. **4.4** with respect to the aeronautical mobile service, until 1 January 2002. Administrations shall not authorize new frequency assignments in this band to stations in the meteorological-satellite service.

5.203A *Additional allocation:* in Israel, Mauritania, Qatar and Zimbabwe, the band 136 - 137 MHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a secondary basis until 1 January 2005.

5.203B *Additional allocation:* in Saudi Arabia, United Arab Emirates, Oman and Syrian Arab Republic, the band 136-137 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis until 1 January 2005. (WRC-03)

5.204 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Malaysia, Oman, Pakistan, the Philippines, Qatar, Serbia and Montenegro, Singapore, Thailand and Yemen, the 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-03)

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, Finland, France, Georgia, Greece, Kazakstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Syria, Slovakia, the Czech Republic, Romania, the Russian Federation, 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**).

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**.

5.208A In making assignments to space stations in the mobile-satellite service in the bands 137 - 138 MHz, 387 - 390 MHz and 400.15 - 401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05 - 153 MHz, 322 - 328.6 MHz, 406.1 - 410 MHz and 608 - 614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in Table 1 of Recommendation ITU-R RA.769-1.

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.

5.210 *Additional allocation:* in France, 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-03)

5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138 - 144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.

5.212 *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Rep., Congo (Rep. of the), Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libyan Arab Jamahiriya, Malawi, Mozambique, Namibia, Oman, Uganda, Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Swaziland, Chad, Togo, Zambia and Zimbabwe, the band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-03)

5.213 *Additional allocation:* in China, the band 138 - 144 MHz is also allocated to the radiolocation service on a primary basis.

5.214 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Eritrea, Ethiopia, Kenya, The Former Yugoslav Republic of Macedonia, Malta, Somalia, Sudan, Tanzania and Yugoslavia, the band 138 - 144 MHz is also allocated to the fixed service on a primary basis.

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

5.217 *Alternative allocation:* in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146 - 148 MHz is allocated to the fixed and mobile services on a primary basis.

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.

5.219 The use of the 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 band 148 - 149.9 MHz.

5.220 The use of the 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**. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz.

5.221 Stations of the mobile-satellite service in the 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, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, the Russian Federation, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Lesotho, Latvia, Lebanon, Libyan Arab Jamahiriya, Liechtenstein, Lithuania, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, Syrian Arab Republic, Kyrgyzstan, Slovakia, Romania, the United Kingdom, Senegal, Serbia and Montenegro, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Zambia, and Zimbabwe. (WRC-03)

5.222 Emissions of the radionavigation-satellite service in the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz may also be used by receiving earth stations of the space research service.

5.223 Recognizing that the use of the band 149.9 - 150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. **4.4**.

5.224A The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015.

5.224B The allocation of the bands 149.9-150.05 MHz and 399.9-400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015.

5.225 *Additional allocation:* in Australia and India, the band 150.05 - 153 MHz is also allocated to the radio astronomy service on a primary basis.

5.226 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 are contained in Article **31** and Appendix **13**.

In the bands 156 - 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 **13**).

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 frequency 156.8 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.

5.227 In the maritime mobile VHF service the frequency 156.525 MHz is to be used exclusively for digital selective calling for distress, safety and calling. The conditions for the use of this frequency are prescribed in Articles **31** and **52**, and Appendices **13** and **18**.

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.

5.230 *Additional allocation:* in China, the band 163 - 167 MHz is also allocated to the space operation service (space-to-Earth) on a primary basis, subject to agreement obtained under No. **9.21**.

5.231 *Additional allocation:* in Afghanistan, China and Pakistan, the band 167 - 174 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service into this band shall be subject to agreement with the neighbouring countries in Region 3 whose services are likely to be affected.

5.232 *Additional allocation:* in Japan, the band 170 - 174 MHz is also allocated to the broadcasting service on a primary basis.

5.233 *Additional allocation:* in China, the band 174 - 184 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis, subject to agreement obtained under No. **9.21**. These services shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations.

5.234 *Different category of service:* in Mexico, the allocation of the band 174 - 216 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**).

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), Eritrea, Ethiopia, Gambia, Guinea, Libyan Arab Jamahiriya, Malawi, Mali, Sierra Leone, Somali, Chad and Zimbabwe, the band 174-223 MHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-03)

5.238 *Additional allocation:* in Bangladesh, India, Pakistan and the Philippines, the band 200 - 216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

5.240 *Additional allocation:* in China and India, the band 216 - 223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

5.241 In Region 2, no new stations in the radiolocation service may be authorized in the band 216 - 225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.

5.242 *Additional allocation:* in Canada, the band 216 - 220 MHz is also allocated to the land mobile service on a primary basis.

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.

5.245 *Additional allocation:* in Japan, the band 222 - 223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

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 Syria, the band 223 - 235 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

5.250 *Additional allocation:* in China, the band 225 - 235 MHz is also allocated to the radio astronomy service on a secondary 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, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the 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**.

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 (see Appendix **13**).

5.256A *Additional allocation:* in China, the Russian Federation, Kazakhstan and Ukraine, the 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, nor claim protection from, nor constrain the use and development of the mobile service systems and mobile-satellite service systems operating in the 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-03)

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, Israel, Japan and Syria, 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**.

5.260 Recognizing that the use of the band 399.9 - 400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. **4.4**.

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, Bosnia and Herzegovina, Botswana, Bulgaria, Colombia, Costa Rica, 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, Syrian Arab Republic, Kyrgyzstan, Romania, Serbia and Montenegro, Singapore, Somalia, Tajikistan, Turkmenistan and Ukraine, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)

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.

5.264 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.

5.266 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** and Appendix **13**).

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 band 410-420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed -153 dB(W/m^2) for $0° \leq \delta \leq 5°$, $-153 + 0.077 (\delta - 5)$ dB(W/m^2) for $5° \leq \delta \leq 70°$, and -148 dB(W/m^2) for $70° \leq \delta \leq 90°$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. **4.10** does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services.

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 Azerbaijan, Belarus, China, India, Latvia, Lithuania, Kyrgyzstan and Turkmenistan, the band 420-460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis. (WRC-03)

5.272 *Different category of service:* in France, the allocation of the band 430 - 434 MHz to the amateur service is on a secondary basis (see No. **5.32**).

5.273 *Different category of service:* in Libyan Arab Jamahiriya, the allocation of the bands 430-432 MHz and 438-440 MHz to the radiolocation service is on a secondary basis (see No. **5.32**). (WRC-03)

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

5.275 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Estonia, Finland, Latvia, The Former Yugoslav Republic of Macedonia, Libya, Slovenia and Yugoslavia, the bands 430 - 432 MHz and 438 - 440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

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

5.277 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo (Rep. of the), Djibouti, the Russian Federation, Georgia, Hungary, Israel, Kazakhstan, Mali, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC-03)

5.278 *Different category of service:* in Argentina, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama and Venezuela, the allocation of the band 430 - 440 MHz to the amateur service is on a primary basis (see No. **5.33**).

5.279 *Additional allocation:* in Mexico, the bands 430 - 435 MHz and 438 - 440 MHz are also allocated on a primary basis to the land mobile service, subject to agreement obtained under No. **9.21**.

5.279A The use of this band by sensors in the Earth exploration-satellite service (active) shall be in accordance with Recommendation ITU-R SA.1260-1. Additionally, the Earth exploration-satellite service (active) in the band 432-438 MHz shall not cause harmful interference to the aeronautical radionavigation service in China. (WRC-03)

5.280 In Germany, Austria, Bosnia and Herzegovina, Croatia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Portugal, Slovenia, Switzerland and Yugoslavia, the 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 band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. **15.13**.

5.281 *Additional allocation:* in the French Overseas Departments 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**.

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.

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.

5.286D *Additional allocation*: in Canada, the United States, Mexico and Panama, the band 454 - 455 MHz is also allocated to the mobile-satellite service (Earth-to-space) on a primary basis.

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

5.287 In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board

communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications.The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174 (see Resolution **341 (WRC-97)**.

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.1174-1. (WRC-03)

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, Japan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, 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**.

5.291 *Additional allocation:* in China, the band 470 - 485 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under No. **9.21** and subject to not causing harmful interference to existing and planned broadcasting stations.

5.291A *Additional allocation:* in Germany, Austria, Denmark, Estonia, Finland, Liechtenstein, Norway, Netherlands, the Czech Republic and Switzerland, the 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)**.

5.292 *Different category of service:* in Mexico and Venezuela, the allocation of the band 470 - 512 MHz to the fixed and mobile services, and in Argentina and Uruguay to the mobile service, is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.

5.293 *Different category of service:* in Canada, Chile, Colombia, Cuba, the United States, Guyana, Honduras, Jamaica, Mexico, Panama and Peru, the allocation of the bands 470 - 512 MHz and 614 - 806 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**. In Argentina and Ecuador, the allocation of the band 470-512 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.

5.294 *Additional allocation:* in Burundi, Cameroon, Congo (Rep. of the), Côte d'Ivoire, Ethiopia, Israel, Kenya, Lebanon, Libyan Arab Jamahiriya, Malawi, Syrian Arab Republic, Sudan, Chad and Yemen, the band 470-582 MHz is also allocated to the fixed service on a secondary basis. (WRC-03)

5.296 *Additional allocation:* in Germany, Austria, Belgium, Côte d'Ivoire, Denmark, Spain, Finland, France, Ireland, Israel, Italy, Libyan Arab Jamahiriya, Lithuania, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, Syrian Arab Republic, the United Kingdom, Sweden, Switzerland, Swaziland and Tunisia, the band 470-790 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. 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-03)

5.297 *Additional allocation:* in Costa Rica, Cuba, El Salvador, the United States, Guatemala, Guyana, Honduras, Jamaica and Mexico, the band 512 - 608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under No. **9.21**.

5.298 *Additional allocation:* in India, the band 549.75 - 550.25 MHz is also allocated to the space operation service (space-to-Earth) on a secondary basis.

5.300 *Additional allocation:* in Israel, Libya, Syria and Sudan, the band 582 - 790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.

5.302 *Additional allocation:* in the United Kingdom, the band 590 - 598 MHz is also allocated to the aeronautical radionavigation service on a primary basis. All new assignments to stations in the aeronautical radionavigation service, including those transferred from the adjacent bands, shall be subject to coordination with the Administrations of the following countries: Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.

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.

5.305 *Additional allocation:* in China, 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.

5.307 *Additional allocation:* in India, the band 608 - 614 MHz is also allocated to the radio astronomy service on a primary basis.

5.309 *Different category of service:* in Costa Rica, El Salvador and Honduras, the allocation of the band 614 - 806 MHz to the fixed service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.

5.311 Within the frequency band 620-790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions **33 (Rev.WRC-03)** and **507 (Rev.WRC-03)**). Such stations shall not produce a power flux-density in excess of the value –129 dB(W/m^2) for angles of arrival less than 20° (see Recommendation **705**) within the territories of other countries without the consent of the administrations of those countries. Resolution **545 (WRC-03)** applies. (WRC-03)

5.312 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, the Russian Federation, Georgia, Hungary, Kazakhstan, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the band 645-862 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-03)

5.314 *Additional allocation:* in Austria, Italy, Moldova, Uzbekistan, the United Kingdom and Swaziland, the band 790 - 862 MHz is also allocated to the land mobile service on a secondary basis.

5.315 *Alternative allocation:* in Greece, Italy, and Tunisia, the band 790 - 838 MHz is allocated to the broadcasting service on a primary basis.

5.316 *Additional allocation*: in Germany, Saudi Arabia, Bosnia and Herzegovina, Burkina Faso, Cameroon, Côte d'Ivoire, Croatia, Denmark, Egypt, Finland, Greece, Israel, Jordan, Kenya, The Former Yugoslav Republic of Macedonia, Libyan Arab Jamahiriya, Liechtenstein, Mali, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Syrian Arab Republic, Serbia and Montenegro, Sweden and Switzerland, the band 790-830 MHz, and in these same countries and in Spain, France, Gabon and Malta, the band 830-862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band. (WRC-03)

5.317 *Additional allocation:* in Region 2 (except Brazil and the United States), the band 806 - 890 MHz is also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **9.21**. The use of this service is intended for operation within national boundaries.

5.317A Administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) may use those parts of the band 806-960 MHz which are allocated to the mobile service on a primary basis and are used or planned to be used for mobile

systems (see Resolution **224 (WRC-2000)**). This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations.

5.318 *Additional allocation:* in Canada, the United States and Mexico, the bands 849 - 851 MHz and 894 - 896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849 - 851 MHz is limited to transmissions from aeronautical stations and the use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.

5.319 *Additional allocation:* in Belarus, 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.

5.320 *Additional allocation:* in Region 3, the bands 806 - 890 MHz and 942 - 960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. **9.21**. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.

5.321 *Alternative allocation:* in Italy, the band 838 - 854 MHz is allocated to the broadcasting service on a primary basis as from 1 January 1995.

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, Egypt, Spain, Libya, Morocco, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe and Zambia, subject to agreement obtained under No. **9.21**.

5.323 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, the Russian Federation, Hungary, Kazakhstan, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine, the band 862-960 MHz is 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-03)

5.325 *Different category of service:* in the United States, the allocation of the band 890 - 942 MHz to the radiolocation service is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21**.

5.325A *Different category of service:* in Cuba, the allocation of the band 902-915 MHz to the land mobile service is on a primary basis.

5.326 *Different category of service:* in Chile, the band 903 - 905 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. **9.21**.

5.327 *Different category of service:* in Australia, the allocation of the band 915 - 928 MHz to the radiolocation service is on a primary basis (see No. **5.33**).

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.

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 (WRC-03)** 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-03)

5.328B The use of the bands 1164-1300 MHz, 1559-1610 MHz and 5010-5030 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. (WRC-03)

5.329 Use of the radionavigation-satellite service in the 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 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 (WRC-03)** shall apply. (WRC-03)

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 other systems or services operating in accordance with the Table.

5.330 *Additional allocation:* in Angola, Saudi Arabia, Bahrain, Bangladesh, Cameroon, China, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Mozambique, Nepal, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Somalia, 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-03)

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, The Former Yugoslav Republic of Macedonia, Lesotho, Latvia, Liechtenstein, Lithuania, Luxembourg, Madagascar, Mali, Mauritania, Nigeria, Norway, Oman, the Netherlands, Poland, Portugal, Qatar, Syrian Arab Republic, Slovakia, the United Kingdom, Serbia and Montenegro, Slovenia, Somalia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Thailand, Togo, Turkey, Venezuela and Viet Nam, the band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis. In Canada and the United States, the 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-03)

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.

5.334 *Additional allocation:* in Canada and the United States, the band 1 350-1 370 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-03)

5.335 In Canada and the United States in the bands 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.

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.

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.

5.338 In Azerbaijan, Mongolia, Kyrgyzstan, Slovakia, the Czech Rep., Romania and Turkmenistan, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz. (WRC-03)

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 *Additional allocation:* the band 1 390-1 392 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a secondary basis and the band 1 430-1 432 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis. These allocations are limited to use for feeder links for non-geostationary-satellite networks in the mobile-satellite service with service links below 1 GHz, and Resolution **745 (WRC-03)** applies. (WRC-03)

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[2],	
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)	

[2] 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.

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.

5.342 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Uzbekistan, Kyrgystan, the Russian Federation and Ukraine, the 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 band 1 452 - 1 492 MHz is subject to agreement between the administrations concerned.

5.343 In Region 2, the use of the band 1 435 - 1 535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.

5.344 *Alternative allocation:* in the United States, the band 1 452 - 1 525 MHz is allocated to the fixed and mobile services on a primary basis (see also No. **5.343**).

5.345 Use of the 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 (WARC-92)**.

5.347 *Different category of service:* in Bangladesh, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cuba, Denmark, Egypt, Greece, Ireland, Italy, Mozambique, Portugal, Serbia and Montenegro, Sri Lanka, Swaziland, Yemen and Zimbabwe, the allocation of the band 1 452-1 492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007. (WRC-03)

5.347A In the bands:

1 452-1 492 MHz,
1 525-1 559 MHz,
1 613,8-1 626,5 MHz,
2 655-2 670 MHz,
2 670-2 690 MHz,
21.4-22 GHz,

Resolution **739 (WRC-03)** applies. (WRC-03)

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)

5.348C For the use of the bands 1 518-1 525 MHz and 1 668-1 675 MHz by the mobile-satellite service, see Resolution **225 (Rev.WRC-03)**. (WRC-03)

5.349 *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, France, Iran (Islamic Republic of), Iraq, Israel, Kazakstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, Yemen and Yugoslavia, the allocation of the band 1 525 - 1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**).

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

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 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 1 525-1 544 MHz, 1 545-1 559 MHz, 1 610-1 626.5 MHz, 1 626.5-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 500 MHz, 2 500-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-97)** and **225 (WRC-2000)**.

5.352A In the 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 France and French overseas territories in Region 3, Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Malta, Morocco, Mauritania, Nigeria, Oman, Pakistan, Philippines, Qatar, Syria, Tanzania, Viet Nam and Yemen notified prior to 1 April 1998.

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)** shall apply.)

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), Egypt, Eritrea, Iraq, Israel, Kuwait, Lebanon, Malta, Qatar, Syrian Arab Republic, Somalia, 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-03)

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 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-2000**) shall apply.)

5.359 *Additional allocation:* in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bosnia and Herzegovina, Bulgaria, Cameroon, Spain, the Russian Federation, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakhstan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Lithuania, Mauritania, Moldova, Mongolia, Uganda, Uzbekistan, Pakistan, Poland, Syrian Arab Republic, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, Swaziland, Tajikistan, Tanzania, Tunisia, Turkmenistan and Ukraine, the 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 bands. (WRC-03)

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, aeronatical 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.

5.362B *Additional allocation:* The band 1 559-1 610 MHz is also allocated to the fixed service on a primary basis until 1 January 2005 in Germany, Armenia, Azerbaijan, Belarus, Benin, Bosnia and Herzegovina, Bulgaria, Spain, the Russian Federation, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Kazakhstan, Lithuania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, Senegal, Swaziland, Tajikistan, Tanzania, Turkmenistan and Ukraine, and until 1 January 2010 in Saudi Arabia, Cameroon, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Mali, Mauritania, Syrian Arab Republic and Tunisia. After these dates, the fixed service may continue to operate on a secondary basis until 1 January 2015, at which time this allocation shall no longer be

valid. Administrations are urged to take all practicable steps to protect the radionavigation-satellite service and the aeronautical radionavigation service and not authorize new frequency assignments to fixed-service systems in this band. (WRC-03)

5.362C *Additional allocation:* in Bahrain, Bangladesh, Congo, Egypt, Eritrea, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Qatar, Syria, Somalia, Sudan, Chad, Togo, and Yemen, the band 1 559 – 1 610 MHz is also allocated to the fixed service on a secondary basis until 1 January 2015, at which time this allocation shall no longer be valid. Administrations are urged to take all practicable steps to protect the radionavigation-satellite service and not authorize new frequency assignments to fixed-service systems in this band.

5.363 *Alternative allocation:* in Sweden, the band 1 590 - 1 626.5 MHz is allocated to the aeronautical radionavigation service on a primary basis.

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 bands 1 610 - 1 626.5 MHz and 5 000 - 5 150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. **9.21**.

5.368 With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. **4.10** do not apply in the band 1 610 - 1 626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.

5.369 *Different category of service:* in Angola, Australia, Burundi, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Israel, Lebanon, Liberia, Libyan Arab Jamahiriya, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, Dem. Rep. of the Congo, Sudan, Swaziland, 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-03)

5.370 *Different category of service:* in Venezuela, the allocation to the radiodetermination-satellite service in the band 1 610 - 1 626.5 MHz (Earth-to-space) is on a secondary basis.

5.371 *Additional allocation:* in Region 1, the bands 1 610 - 1 626.5 MHz (Earth-to-space) and 2 483.5 - 2 500 MHz (space-to-Earth) are also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. **9.21**.

5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6 - 1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. **29.13** applies).

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**.

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.

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**. (WRC-03)

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 1 668-1 675 MHz between the mobile-satellite service and the fixed, mobile and space research (passive) services, Resolution **744 (WRC-03)** shall apply. (WRC-03)

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)

5.380 The bands 1 670 - 1 675 MHz and 1 800 - 1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670 - 1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1 800 - 1 805 MHz is limited to transmissions from aircraft stations.

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 in accordance with Resolution **670 (WRC-03)**. (WRC-03)

5.381 *Additional allocation:* in Afghanistan, Costa Rica, Cuba, India, Iran (Islamic Republic of) and Pakistan, the band 1 690-1 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-03)

5.382 *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Congo (Rep. of the), Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Russian Federation, Guinea, Hungary, Iraq, Israel, Jordan, Kazakhstan, Kuwait, the Former Yugoslav Republic of Macedonia, Lebanon, Mauritania, Moldova, Mongolia, Oman, Uzbekistan, Poland, Qatar, Syrian Arab Republic, Kyrgyzstan, Romania, Serbia and Montenegro, Somalia, Tajikistan, Tanzania, Turkmenistan, Ukraine and Yemen, the allocation of the 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 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-03)

5.384 *Additional allocation:* in India, Indonesia and Japan, the band 1 700 - 1 710 MHz is also allocated to the space research service (space-to-Earth) on a primary basis.

5.384A The bands, or portions of the bands, 1 710-1 885 MHz and 2 500-2 690 MHz, are identified for use by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) in accordance with Resolution **223 (WRC-2000)**. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations.

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.

5.386 *Additional allocation:* the 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, 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-03)

5.387 *Additional allocation:* in Azerbaijan, Belarus, Georgia, Kazakhstan, Mongolia, Kyrgyzstan, Slovakia, 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-03)

5.388 The 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-2000). Such use does not preclude the use of these bands by other services to which they are allocated. The bands should be made available for IMT-2000 in accordance with Resolution **212 (Rev.WRC-97)**. (See also Resolution **223 (WRC-2000)**.)

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, Libyan Arab Jamahiriya, Jordan, Kenya, Kuwait, Mali, Morocco, Mauritania, Nigeria, Oman, Uganda, Qatar, Syrian Arab Republic, Senegal, Singapore, Sudan, Tanzania, Chad, Togo, Tunisia, Yemen, Zambia and Zimbabwe, for the purpose of protecting fixed and mobile services, including IMT-2000 mobile stations, in their territories from co-channel interference, a HAPS operating as an IMT-2000 base station in neighbouring countries, in the 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-03)

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 (WRC-2000)**. The use of these bands shall not commence before 1 January 2000; however the use of the band 1 980 - 1 990 MHz in Region 2 shall not commence before 1 January 2005.

5.389B The use of the 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, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela.

5.389C The use of the bands 2 010 - 2 025 MHz and 2 160 - 2 170 MHz in Region 2 by the mobile-satellite service shall not commence before 1 January 2002 and is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (WRC-2000)**.

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, Benin, Cape Verde, Egypt, Iran (Islamic Republic of), Mali, Syria and Tunisia, the use of the 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.

5.390 In Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Suriname and Uruguay, the use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite services shall not cause harmful interference to stations in the fixed and mobile services before 1 January 2005. After this date, the use of these bands is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (WRC-2000)**.

5.391 In making assignments to the mobile service in the 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, and shall take that Recommendation into account for the introduction of any other type of mobile system.

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.

5.392A *Additional allocation:* in Russian Federation, the band 2 160 - 2 200 MHz is also allocated to the space research service (space-to-Earth) on a primary basis until 1 January 2005. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services operating in this frequency band.

5.393 *Additional allocation:* in the United States, India and Mexico, the band 2 310 - 2 360 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92**), with the exception of *resolves 3* in regard to the limitation on broadcasting-satellite systems in the upper 25 MHz.

5.394 In the United States, the use of the band 2 300 - 2 390 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. In Canada, the use of the band 2 300 - 2 483.5 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services.

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)

5.396 Space stations of the broadcasting-satellite service in the band 2 310 - 2 360 MHz operating in accordance with No. **5.393** that may affect the services to which this band is allocated in other countries shall be coordinated and notified in accordance with Resolution **33 (Rev. WRC-97)**. Complementary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.

5.397 *Different category of service:* in France, the band 2 450 - 2 500 MHz is allocated on a primary basis to the radiolocation service (see No. **5.33**). Such use is subject to agreement with administrations having services operating or planned to operate in accordance with the Table of Frequency Allocations which may be affected.

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.

5.399 In Region 1, in countries other than those listed in No. **5.400**, harmful interference shall not be caused to, or protection shall not be claimed from, stations of the radiolocation service by stations of the radiodetermination satellite service.

5.400 *Different category of service:* in Angola, Australia, Bangladesh, Burundi, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Lebanon, Liberia, Libyan Arab Jamahiriya,

Madagascar, Mali, Pakistan, Papua New Guinea, Dem. Rep. of the Congo, Syrian Arab Republic, Sudan, Swaziland, Togo and Zambia, the allocation of the band 2 483.5-2 500 MHz to the radiodetermination-satellite service (space-to-Earth) 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-03)

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.

5.403 Subject to agreement obtained under No. **9.21**, the band 2 520 - 2 535 MHz (until 1 January 2005 the band 2 500 - 2 535 MHz) may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. **9.11A** apply.

5.404 *Additional allocation:* in India and Iran (Islamic Republic of), the band 2 500 - 2 516.5 MHz may also be used for the radiodetermination-satellite service (space-to-Earth) for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**.

5.405 *Additional allocation:* in France, the band 2 500 - 2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

5.407 In the band 2 500 - 2 520 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m^2/4 kHz) in Argentina, unless otherwise agreed by the administrations concerned.

5.409 Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2 500 - 2 690 MHz.

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**.

5.411 When planning new tropospheric scatter radio-relay links in the band 2 500 - 2 690 MHz, all possible measures shall be taken to avoid directing the antennae of these links towards the geostationary-satellite orbit.

5.412 *Alternative allocation:* in Azerbaijan, Bulgaria, 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.

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.

5.414 The allocation of the frequency band 2 500 - 2 520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005 and is subject to coordination under No. **9.11A**.

5.415 The use of the bands 2 500 - 2 690 MHz in Region 2 and 2 500 - 2 535 MHz and 2 655 - 2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. **9.21**, giving particular attention to the broadcasting-satellite service in Region 1. In the direction space-to-Earth, the power flux-density at the Earth's surface shall not exceed the values given in Article **21**, Table **21-4**.

5.415A *Additional allocation:* in India and Japan, subject to agreement obtained under No. **9.21**, the band 2 515-2 535 MHz may also be used for the aeronautical mobile-satellite service (space-to-Earth) for operation limited to within their national boundaries.

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**. (WRC-03)

5.417A In applying provision No. **5.418**, in Korea (Rep. of) and Japan, *resolves* 3 of Resolution **528 (Rev.WRC-03)** is relaxed to allow the broadcasting-satellite service

(sound) and the complementary terrestrial broadcasting service to additionally operate on a primary basis in the band 2 605-2 630 MHz. This use is limited to systems intended for national coverage. An administration listed in this provision shall not have simultaneously two overlapping frequency assignments, one under this provision and the other under No. **5.416**. The provisions of No. **5.416** and Table **21-4** of Article **21** do not apply. Use of non-geostationary-satellite systems in the broadcasting-satellite service (sound) in the band 2 605-2 630 MHz is subject to the provisions of Resolution **539 (Rev.WRC-03)**. The power flux-density at the Earth's surface produced by emissions from a geostationary broadcasting-satellite service (sound) space station operating in the band 2 605-2 630 MHz for which complete Appendix **4** coordination information, or notification information, has been received after 4 July 2003, for all conditions and for all methods of modulation, shall not exceed the following limits:

-130 dB(W/(m^2 · MHz)) for $0° \leq \theta \leq 5°$

$-130 + 0.4\ (\theta - 5)$ dB(W/(m^2 · MHz)) for $5° < \theta \leq 25°$

-122 dB(W/(m^2 · MHz)) for $25° < \theta \leq 90°$

where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees. These limits may be exceeded on the territory of any country whose administration has so agreed. In the case of the broadcasting-satellite service (sound) networks of Korea (Rep. of), as an exception to the limits above, the pfd value of -122 dB(W/(m^2 · MHz)) shall be used as a threshold for coordination under No. **9.11** in an area of 1 000 km around the territory of the administration notifying the BSS (sound) system, for angles of arrival greater than 35°. (WRC-03)

5.417B In Korea (Rep. of) and Japan, use of the band 2 605-2 630 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. **5.417A**, for which complete Appendix **4** coordination information, or notification information, has been received after 4 July 2003, is subject to the application of the provisions of No. **9.12A**, in respect of geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received after 4 July 2003, and No. **22.2** does not apply. No. **22.2** shall continue to apply with respect to geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received before 5 July 2003. (WRC-03)

5.417C Use of the band 2 605-2 630 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. **5.417A**, for which complete Appendix **4** coordination information, or notification information, has been received after 4 July 2003, is subject to the application of the provisions of No. **9.12**. (WRC-03)

5.417D Use of the band 2 605-2 630 MHz by geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, has been received after 4 July 2003 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. **5.417A**, and No. **22.2** does not apply. (WRC-03)

5.418 *Additional allocation:* in Korea (Rep. of), India, Japan, Pakistan and Thailand, the band 2 535-2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-03)**. The provisions of No. **5.416** and Table **21-4** of Article **21**, do not apply to this additional allocation. Use of non-geostationary-satellite systems in the broadcasting-satellite service (sound) is subject to Resolution **539 (Rev.WRC-03)**. Geostationary broadcasting-satellite service (sound) systems for which complete Appendix **4** coordination information has been received after 1 June 2005 are limited to systems intended for national coverage. The power flux-density at the Earth's surface produced by emissions from a geostationary broadcasting-satellite service (sound) space station operating in the band 2 630-2 655 MHz, and for which complete Appendix **4** coordination information has been received after 1 June 2005, shall not exceed the following limits, for all conditions and for all methods of modulation:

-130 dB(W/(m^2 · MHz)) for $0° \leq \theta \leq 5°$

$-130.\ 0.4\ (\theta - 5)$ dB(W/(m^2 · MHz)) for 5° < $\theta \leq$ 25°

–122 dB(W/(m^2 · MHz)) for 25° < $\theta \leq$ 90°

where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees. These limits may be exceeded on the territory of any country whose administration has so agreed. As an exception to the limits above, the pfd value of –122 dB(W/(m^2 · MHz)) shall be used as a threshold for coordination under No. **9.11** in an area of 1 500 km around the territory of the administration notifying the broadcasting-satellite service (sound) system. In addition, the pfd value shall not exceed –100 dB(W/(m^2 · MHz)) anywhere on the territory of the Russian Federation.

In addition, an administration listed in this provision shall not have simultaneously two overlapping frequency assignments, one under this provision and the other under No. **5.416** for systems for which complete Appendix **4** coordination information has been received after 1 June 2005. (WRC-03)

5.418A In certain Region 3 countries listed in No. **5.418**, use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound) 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. **9.12A**, in respect of geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received after 2 June 2000, and No. **22.2** does not apply. No. **22.2** shall continue to apply with respect to geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received before 3 June 2000. (WRC-03)

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)

5.419 The allocation of the frequency band 2 670 - 2 690 MHz to the mobile-satellite service shall be effective from 1 January 2005. When introducing systems of the mobile-satellite service in this band, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. **9.11A**.

5.420 The band 2 655 - 2 670 MHz (until 1 January 2005 the band 2 655 - 2 690 MHz) may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. **9.21**. The coordination under No. **9.11A** applies.

5.420A *Additional allocation:* in India and Japan, subject to agreement obtained under No. **9.21**, the band 2 670-2 690 MHz may also be used for the aeronautical mobile-satellite (Earth-to-space) service for operation limited to within their national boundaries.

5.422 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Brunei Darussalam, Congo (Rep. of the), Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Russian Federation, Gabon, Georgia, Guinea, Guinea-Bissau, Iran (Islamic Republic of), Iraq, Israel, Jordan, Lebanon, Mauritania, Moldova, Mongolia, Nigeria, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, the Dem. Rep. of the Congo, Romania, Serbia and Montenegro, 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-03)

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 system (SIT) 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 Azerbaijan, Cuba, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis. (WRC-03)

5.429 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, Congo (Rep. of the), Korea (Rep. of), the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Libyan Arab Jamahiriya, Malaysia, Oman, Pakistan, Qatar, Syrian Arab Republic, Dem. People's Rep. of Korea and Yemen, the band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. The countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service. (WRC-03)

5.430 *Additional allocation:* in Azerbaijan, Cuba, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis. (WRC-03)

5.431 *Additional allocation:* in Germany, Israel and the United Kingdom, the band 3 400-3 475 MHz is also allocated to the amateur service on a secondary basis. (WRC-03)

5.432 *Different category of service:* in Korea (Rep. of), Japan and Pakistan, the allocation of the band 3 400 - 3 500 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**).

5.433 In Regions 2 and 3, in the band 3 400 - 3 600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.

5.435 In Japan, in the band 3 620 - 3 700 MHz, the radiolocation service is excluded.

5.438 Use of the 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. However, passive sensing in the earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).

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

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**.

5.441 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 system 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-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO 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.

5.442 In the 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.

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**).

5.443B 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 band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the 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 band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the band 5 010-5 030 MHz shall comply with the limits in the band 4 990-5 000 MHz defined in Resolution **741 (WRC-03)**. (WRC-03)

5.444 The 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. The requirements of this system shall take precedence over other uses of this band. For the use of this band, No. **5.444A** and Resolution **114 (Rev.WRC-03)** apply. (WRC-03)

5.444A *Additional allocation:* the band 5 091-5 150 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This allocation is limited to feeder links of non-geostationary mobile-satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**.

In the band 5 091-5 150 MHz, the following conditions also apply:

- prior to 1 January 2018, the use of the band 5 091-5 150 MHz by feeder links of non-geostationary-satellite systems in the mobile-satellite service shall be made in accordance with Resolution **114 (Rev.WRC-03)**;
- prior to 1 January 2018, the requirements of existing and planned international standard systems for the aeronautical radionavigation service which cannot be met in the 5 000-5 091 MHz band, shall take precedence over other uses of this band;
- after 1 January 2012, no new assignments shall be made to earth stations providing feeder links of non-geostationary mobile-satellite systems;
- after 1 January 2018, the fixed-satellite service will become secondary to the aeronautical radionavigation service. (WRC-03)

5.446 *Additional allocation:* in the countries listed in Nos. **5.369** and **5.400**, the 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, the 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 Nos. **5.369** and **5.400**, the 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 bands 1 610 - 1 626.5 MHz and/or 2 483.5 -2 500 MHz. The total power flux-density at the Earth's surface shall in no case exceed –159 dBW/m^2 in any 4 kHz band for all angles of arrival.

5.446A The use of the bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile service shall be in accordance with Resolution **229 (WRC-03)**. (WRC-03)

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)

5.447 *Additional allocation:* in Israel, Lebanon, Pakistan, the Syrian Arab Republic and Tunisia, the 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 (WRC-03)** do not apply. (WRC-03)

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.

5.447E *Additional allocation:* The 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, Philippines, Sri Lanka, Thailand and Viet Nam. The use of this band by the fixed service is intended for the implementation of fixed wireless access systems and shall comply with Recommendation ITU-R F.1613. 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-03)

5.447F In the 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). These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638 and ITU-R SA.1632. (WRC-03)

5.448 *Additional allocation:* in Azerbaijan, Libyan Arab Jamahiriya, Mongolia, Kyrgyzstan, Slovakia, Romania and Turkmenistan, the band 5 250-5 350 MHz is also allocated to the radionavigation service on a primary basis. (WRC-03)

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), Mongolia, 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-03)

5.450A In the band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU-R M.1638. (WRC-03)

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, Egypt, the United Arab Emirates, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Madagascar, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sri Lanka, Swaziland, Tanzania, Chad, Thailand, Togo, Viet Nam and Yemen, the 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 (WRC-03)** do not apply. (WRC-03)

5.454 *Different category of service:* in Azerbaijan, the Russian Federation, Georgia, Mongolia, Uzbekistan, 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-03)

5.455 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Kazakhstan, Latvia, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 5 670-5 850 MHz is also allocated to the fixed service on a primary basis. (WRC-03)

5.456 *Additional allocation:* in Cameroon, the band 5 755-5 850 MHz is also allocated to the fixed service on a primary basis. (WRC-03)

5.457A In the 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)**. (WRC-03)

5.457B In the 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, Libyan Arab Jamahiriya, Morocco, Mauritania, Oman, Qatar, 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-03)

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**.

5.458C Administrations making submissions in the band 7 025 - 7 075 MHz (Earth-to-space) for geostationary-satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary-satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary-satellite systems in the fixed-satellite service and non-geostationary-satellite systems in this band.

5.459 *Additional allocation:* in 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**.

5.460 The use of the band 7 145-7 190 MHz by the space research service (Earth-to-space) is restricted to deep space; no emissions to deep space shall be effected in the band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the 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-03)

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.

5.461B The use of the band 7 750-7 850 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems.

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:

–174 dB(W/m ^{2}) in a 4 kHz band	for $0° \leq \theta < 5°$
–174 + 0.5 (θ – 5) dB(W/m 2) in a 4 kHz band	for $5° \leq \theta < 25°$
–164 dB(W/m ^{2}) in a 4 kHz band	for $25° \leq \theta \leq 90°$

These values are subject to study under Resolution **124** (WRC-97).

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

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 Israel, 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-03)

5.468 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burundi, Cameroon, China, Congo (Rep. of the), Costa Rica, Egypt, the United Arab

Emirates, Gabon, Guyana, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Libyan Arab Jamahiriya, Malaysia, Mali, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, Qatar, Syrian Arab Republic, Dem. People's Rep. of Korea, Senegal, Singapore, Somalia, Swaziland, Tanzania, Chad, Togo, Tunisia and Yemen, the band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)

5.469 *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Hungary, Lithuania, Moldova, 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-03)

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.

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, the United Arab Emirates, France, Greece, Indonesia, Iran (Islamic Republic of), Libya, the Netherlands, Qatar and Sudan, the 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.

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, Bulgaria, Cuba, the Russian Federation, Georgia, Hungary, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the bands 8 850-9 000 MHz and 9 200-9 300 MHz are also allocated to the radionavigation service on a primary basis. (WRC-03)

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**).

5.475 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. In the band 9 300 - 9 500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.

5.476 In the band 9 300 - 9 320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.

5.476A In the band 9 500-9 800 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 radio-navigation and radiolocation services.

5.477 *Different category of service:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Japan, Jordan, Kuwait, Lebanon, Liberia, Malaysia, Nigeria, Oman, Pakistan, Qatar, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Trinidad and Tobago, and Yemen, the allocation of the band 9 800-10 000 MHz to the fixed service is on a primary basis (see No. **5.33**). (WRC-03)

5.478 *Additional allocation:* in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 9 800-10 000 MHz is also allocated to the radionavigation service on a primary basis. (WRC-03)

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.

5.480 *Additional allocation:* in Argentina, Brazil, Chile, Costa Rica, Cuba, El Salvador, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 10 - 10.45 GHz is also allocated to the fixed and mobile services on a primary basis.

5.481 *Additional allocation:* in Germany, Angola, Brazil, China, Costa Rica, Côte d'Ivoire, El Salvador, Ecuador, Spain, Guatemala, Hungary, Japan, Kenya, Morocco, Nigeria, Oman, Uzbekistan, Paraguay, Peru, the Dem. People's Rep. of Korea, Tanzania, Thailand and Uruguay, the band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)

5.482 In the band 10.6-10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed –3 dBW. These limits may be exceeded subject to agreement obtained under No. **9.21**. However, in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, China, the United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Kuwait, Latvia, Lebanon, Moldova, Nigeria, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Tajikistan and Turkmenistan, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable. (WRC-03)

5.483 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, China, Colombia, Korea (Rep. of), Costa Rica, Egypt, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, Mongolia, Uzbekistan, Qatar, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, Serbia and Montenegro, Tajikistan, Turkmenistan and Yemen, the 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-03)

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-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO 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.

5.485 In Region 2, in the band 11.7 - 12.2 GHz, transponders on space stations in the fixed-satellite service may be used additionally for transmissions in the broadcasting-satellite service, provided that such transmissions do not have a maximum e.i.r.p. greater than 53 dBW per television channel and do not cause greater interference or require more protection from interference than the coordinated fixed-satellite service frequency assignments. With respect to the space services, this band shall be used principally for the fixed-satellite service.

5.486 *Different category of service:* in Mexico and the United States, the allocation of the band 11.7 - 12.1 GHz to the fixed service is on a secondary basis (see No. **5.32**).

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)

5.488 The use of the band 11.7-12.2 GHz by geostationary-satellite networks in the fixed-satellite service in Region 2 is subject to application of the provisions of No. **9.14** for coordination with stations of terrestrial services in Regions 1, 2 and 3. For the use of the band 12.2-12.7 GHz by the broadcasting-satellite service in Region 2, see Appendix **30**. (WRC-03)

5.489 *Additional allocation:* in Peru, the band 12.1 - 12.2 GHz is also allocated to the fixed service on a primary basis.

5.490 In Region 2, in the band 12.2 - 12.7 GHz, existing and future terrestrial radiocommunication services shall not cause harmful interference to the space services operating in conformity with the Broadcasting-Satellite Plan for Region 2 contained in Appendix **30**.

5.492 Assignments to stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan or included in the Regions 1 and 3 List in Appendix **30** may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan or the List, as appropriate.

5.493 The broadcasting-satellite service in the band 12.5 - 12.75 GHz in Region 3 is limited to a power flux-density not exceeding -111 dB(W/m^2)/27 MHz for all conditions and for all methods of modulation at the edge of the service area.

5.494 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Cameroon, the Central African Rep., Congo (Rep. of the), Côte d'Ivoire, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Iraq, Israel, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Madagascar, Mali, Morocco, Mongolia, Nigeria, Qatar, Syrian Arab Republic, Dem. Rep. of the Congo, Somalia, Sudan, Chad, Togo and Yemen, the band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-03)

5.495 *Additional allocation:* in Bosnia and Herzegovina, Croatia, France, Greece, Liechtenstein, Monaco, Uganda, Portugal, Romania, Serbia and Montenegro, Slovenia, Switzerland, Tanzania and Tunisia, the band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis. (WRC-03)

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 mentioned in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries mentioned 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 mentioned in this footnote.

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.

5.499 *Additional allocation:* in Bangladesh, India and Pakistan, the band 13.25 -14 GHz is also allocated to the fixed service on a primary basis.

5.500 *Additional allocation:* in Algeria, Angola, 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, Malta, Morocco, Mauritania, Nigeria, Pakistan, Qatar, Syrian Arab Republic, Singapore, Sudan, Chad and Tunisia, the band 13.4-14 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)

5.501 *Additional allocation:* in Azerbaijan, Hungary, Japan, Mongolia, Kyrgyzstan, Romania, the United Kingdom and Turkmenistan, the band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis. (WRC-03)

5.501A The allocation of the band 13.4 – 13.75 GHz 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.

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.

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 size 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) 4.7*D* + 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 band 14-14.5 GHz shall comply with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band located on the territory of Spain, France, India, Italy, the United Kingdom and South Africa. (WRC-03)

5.**504C** In the band 14-14.25 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, Côte d'Ivoire, Egypt, Guinea, India, Iran (Islamic Republic of), Kuwait, Lesotho, Nigeria, Oman, 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, 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-03)

5.505 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Botswana, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lesotho, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, Pakistan, the Philippines, Qatar, Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, Swaziland, Tanzania, Chad and Yemen, the band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-03)

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, Greece and Malta, within the minimum distance given in Resolution **902 (WRC-03)** from these countries. (WRC-03)

5.508 *Additional allocation:* in Germany, Bosnia and Herzegovina, France, Italy, The Former Yugoslav Rep. of Macedonia, Libyan Arab Jamahiriya, the United Kingdom, Serbia and Montenegro and Slovenia, the band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-03)

5.508A In the band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, China, Côte d'Ivoire, Egypt, France, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Lesotho, Nigeria, Oman, 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, 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-03)

5.509 *Additional allocation:* in Japan the band 14.25 - 14.3 GHz is also allocated to the mobile, except aeronautical mobile, service on a primary basis.

5.509A In the band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Lesotho, Morocco, Nigeria, Oman, 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, 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-03)

5.510 The use of the 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.

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

5.511A The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **9.11A**. The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited to feeder links of non-geostationary systems in the mobile-satellite service for which advance publication information has been received by the Bureau prior to 2 June 2000. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-R S.1341. In order to protect the radio astronomy service in the band 15.35-15.4 GHz, the aggregate power flux-density radiated in the 15.35-15.4 GHz band by all the space stations within any non-GSO MSS feeder-link (space-to-Earth) system operating in the 15.43-15.63 GHz band shall not exceed the level of –156 dB(W/m^2) in a 50 MHz bandwidth, into any radio astronomy observatory site for more than 2% of the time.

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. 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.

5.511D Fixed-satellite service systems for which complete information for advance publication has been received by the Bureau by 21 November 1997 may operate in the bands 15.4-15.43 GHz and 15.63-15.7 GHz in the space-to-Earth direction and 15.63-15.65 GHz in the Earth-to-space direction. In the bands 15.4-15.43 GHz and 15.65-15.7 GHz, emissions from a non-geostationary space station shall not exceed the power flux-density limits at the Earth's surface of –146 dB(W/m^2/MHz) for any angle of arrival. In the band 15.63-15.65 GHz, where an administration plans emissions from a non-geostationary space station that exceed –146 dB(W/m^2/MHz) for any angle of arrival, it shall coordinate under No. **9.11A** with the affected administrations. Stations in the fixed-satellite service operating in the band 15.63-15.65 GHz in the Earth-to-space direction shall not cause harmful interference to stations in the aeronautical radionavigation service (No. **4.10** applies).

5.512 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, Cameroon, Congo (Rep. of the), Costa Rica, Egypt, El Salvador, the United Arab Emirates, Eritrea, Finland, Guatemala, India,

Indonesia, Iran (Islamic Republic of), Jordan, Kenya, Kuwait, Libyan Arab Jamahiriya, Malaysia, Mali, Morocco, Mauritania, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Serbia and Montenegro, Singapore, Slovenia, Somalia, Sudan, Swaziland, Tanzania, Chad, Togo and Yemen, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis. (WRC-03)

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**.

5.514 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Finland, Guatemala, India, Iran (Islamic Republic of), Iraq, Israel, Italy, Japan, Jordan, Kuwait, Libyan Arab Jamahiriya, Lithuania, Nepal, Nicaragua, Nigeria, Oman, Uzbekistan, Pakistan, Qatar, Kyrgyzstan, Serbia and Montenegro, Slovenia and Sudan, the 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-03)

5.515 In the band 17.3 - 17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of § 1 of Annex 4 of Appendix **30A/30A**.

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-geostationa ry-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-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO 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.

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 bands by other fixed-satellite service applications or by other services to which these bands are allocated on a co-primary basis and does not establish priority in these Regulations among users of the bands. Administrations should take this into account when considering regulatory provisions in relation to these bands. See Resolution **143 (WRC-03)**. (WRC-03)

5.517 In Region 2, the allocation to the broadcasting-satellite service in the band 17.3 - 17.8 GHz shall come into effect on 1 April 2007. After that date, use of the fixed-satellite (space-to-Earth) service in the band 17.7 - 17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.

5.518 *Different category of service:* in Region 2, the allocation of the band 17.7 - 17.8 GHz to the mobile service is on a primary basis until 31 March 2007.

5.519 *Additional allocation:* the band 18.1 - 18.3 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Its use is limited to geostationary satellites and shall be in accordance with the provisions of Article **21**, Table **21-4**.

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.

5.521 *Alternative allocation:* in Germany, Denmark, the United Arab Emirates and Greece, the 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-03)

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.

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.

5.522C In the band 18.6-18.8 GHz, in Algeria, Saudi Arabia, Bahrain, Egypt, the United Arab Emirates, Jordan, Lebanon, Libya, Morocco, Oman, Qatar, Syria, Tunisia and Yemen, fixed-satellite 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**.

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.

5.523B The use of the band 19.3 - 19.6 GHz (Earth-to-space) by the FSS is limited to feeder links for non-GSO systems in the MSS. 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** of the Radio Regulations 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.

5.523D The use of the band 19.3 - 19.6 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by the 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**.

5.523E No. **22.2** of the Radio Regulations 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.

5.524 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, 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 Democratic Republic of the Congo, Syria, the Dem. People´s Rep. of Korea, Singapore, Somalia, Sudan, Tanzania, Chad, Togo and Tunisia, the 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 band 19.7 - 21.2 GHz and of space stations in the mobile-satellite service in the band 19.7 - 20.2 GHz where such allocation to the mobile-satellite service is on a primary basis in the latter band.

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.

5.528 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**.

5.529 The use of the bands 19.7 - 20.1 GHz and 29.5 - 29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. **5.526**.

5.530 In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4 - 22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution **525 (WARC-92)**.

5.531 *Additional allocation:* in Japan, the band 21.4 - 22 GHz is also allocated to the broadcasting service on a primary basis.

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.

5.533 The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

5.535 In the band 24.75 - 25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

5.535A The use of the band 29.1 - 29.4 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**.

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 Recommendations ITU-R SA.1278 and ITU-R SA.1625, respectively. (WRC-03)

5.536B In Germany, Saudi Arabia, Austria, Belgium, Brazil, Bulgaria, China, the Republic of Korea, Denmark, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Hungary, India, Iran (Islamic Republic of), Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Syria, Slovakia, Czech Republic, Romania, the United Kingdom, Singapore, Sweden, Switzerland, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the earth exploration-satellite 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.

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, 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-03)

5.537 Space services using non-geostationary satellites operating in the inter-satellite service in the band 27 - 27.5 GHz are exempt from the provisions of No. **22.2**.

5.537A In Bhutan, Korea (Rep. of), the Russian Federation, Indonesia, Iran (Islamic Republic of), Japan, Kazakhstan, Lesotho, Malaysia, Maldives, Mongolia, Myanmar, Uzbekistan, Pakistan, Philippines, Kyrgyzstan, the Dem. People's Rep. of Korea, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the band 27.5-28.35 GHz may also be used by high altitude platform stations (HAPS). The use of HAPS within the band 27.5-28.35 GHz is limited, within the territory of the countries listed above, to a single 300 MHz sub-band. 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 (WRC-03)**. (WRC-03)

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. In the band 27.500 - 27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in Article **21**, Table **21-4** on the Earth's surface.

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 - 29.4 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 it is 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.

5.542 *Additional allocation:* in Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, India, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Pakistan, the Philippines, Qatar, Syria, the Dem. People´s Rep. of Korea, Somalia, 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.

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.

5.543A In Bhutan, Korea (Rep. of), the Russian Federation, Indonesia, Iran (Islamic Republic of), Japan, Kazakhstan, Lesotho, Malaysia, Maldives, Mongolia, Myanmar, Uzbekistan, Pakistan, Philippines, Kyrgyzstan, the Dem. People's Rep. of Korea, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the band 31-31.3 GHz may also be used by systems using high altitude platform stations (HAPS) in the ground-to-HAPS direction. The use of the band 31-31.3 GHz by systems using HAPS is limited to the territory of the countries listed above and shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems, systems in the mobile service and systems operated under No. **5.545**. Furthermore, the development of these services shall not be constrained by HAPS. Systems using HAPS in the band 31-31.3 GHz shall not cause harmful interference to the radio astronomy service having a primary allocation in the band 31.3-31.8 GHz, taking into account the protection criterion as given in Recommendation ITU-R RA.769. In order to ensure the protection of satellite passive services, the level of unwanted power density into a HAPS ground station antenna in the band 31.3-31.8 GHz shall be limited to −106 dB(W/MHz) under clear-sky conditions, and may be increased up to -100 dB(W/MHz) under rainy conditions to take account of rain attenuation, provided the effective impact on the passive satellite does not exceed the impact under clear-sky conditions as given above. See Resolution **145 (WRC-03)**. (WRC-03)

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, Azerbaijan, 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-03)

5.546 *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Egypt, the United Arab Emirates, Spain, Estonia, the Russian Federation, Finland, Georgia, Hungary, Iran (Islamic Republic of), Israel, Jordan, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Syrian Arab Republic, Kyrgyzstan, Romania, the United Kingdom, South Africa, Tajikistan, Turkmenistan and Turkey, the allocation of the 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-03)

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 Resolutions **75 (WRC-2000)** and **79 (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-03)

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.

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.

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.

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

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, Libyan Arab Jamahiriya, Malaysia, Mali, Malta, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Dem. Rep. of the Congo, Singapore, Somalia, 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-03)

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, Mongolia, Uzbekistan, 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-03)

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**).

5.551H The equivalent power flux-density (epfd) produced in the 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 (space-to-Earth) operating in the 42-42.5 GHz band, 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 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631 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-03)

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 (space-to-Earth) 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 bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution **122** (WRC-97).

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**).

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.

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)

5.555 *Additional allocation:* the band 48.94 - 49.04 GHz is also allocated to the radio astronomy service on a primary basis.

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)

5.556 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.

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.

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.

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

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).

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**).

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 1000 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.

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**).

5.559A The band 75.5-76 GHz is also allocated to the amateur and amateur-satellite services on a primary basis until the year 2006.

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.

5.560A The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis.

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.

5.561A 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.

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.

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.

5.562B In the bands 105 - 109.5 GHz, 111.8 - 114.25 GHz, 155.5 - 158.5 GHz and 217 - 226 GHz, the use of this allocation is limited to space-based radio astronomy only

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/(m^2 * MHz)) for all angles of arrival.

5.562D *Additional allocation:* In Korea (Rep. of), the 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 until 2015.

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

5.562F In the band 155.5-158.5 GHz, the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018

5.562G The date of entry into force of the allocation to the fixed and mobile services in the band 155.5-158.5 GHz shall be 1 January 2018.

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 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

–144 dB(W/(m^2 * MHz)) for all angles of arrival.

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.

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.

5.565 The frequency band 275-1 000 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services:

– 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): 275-277 GHz, 294-306 GHz, 316-334 GHz, 342-349 GHz, 363-365 GHz, 371-389 GHz, 416-434 GHz, 442-444 GHz, 496-506 GHz, 546-568 GHz, 624-629 GHz, 634-654 GHz, 659-661 GHz, 684-692 GHz, 730-732 GHz, 851-853 GHz and 951-956 GHz.

Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the date when the allocation table is established in the above-mentioned frequency band.

II. National footnotes

A01 Additional allocation according to Decisions of the European Commission, the CEPT Electronic Communication Committee (ECC) and the European Common Allocations Table (ERC Report 25). The provisions of Radio Regulations Articles 4.4 and 8.5 apply.

A02 Additional allocation for Austria. The provisions of Radio Regulations Articles 4.4 and 8.5 apply.

III. Other relevant provisions of the Radio Regulations

Article 4.4
Administrations of the Members shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations in this Chapter or the other provisions of these Regulations, except on the express condition that such a station shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations.

Article 8.5
If harmful interference to the reception of any station whose assignment is in accordance with No. **11.31** is actually caused by the use of a frequency assignment which is not in conformity with No. **11.31**, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.