SKMM SRSP-524M IMT 16 JULY 2010

**Standard Radio System Plan** 

# REQUIREMENTS FOR INTERNATIONAL MOBILE TELECOMMUNICATIONS (IMT) SYSTEMS OPERATING IN THE FREQUENCY BANDS 1885 MHz TO 2025 MHz AND 2110 MHz TO 2200 MHz



Suruhanjaya Komunikasi dan Multimedia Malaysia

Malaysian Communications and Multimedia Commission Off Persiaran Multimedia, 63000 Cyberjaya, Selangor Darul Ehsan, Malaysia Tel: +60 3 8688 8000 Fax: +60 3 8688 1005 Website: http://www.skmm.gov.my **TABLE OF CONTENTS** 

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# 1.0 GLOSSARY

1.1 The terms used in this document may be found in the document SRSP Glossary which can be downloaded from SKMM website. (http://www.skmm.gov.my/what\_we\_do/spectrum/srsp.asp)

## REQUIREMENTS FOR INTERNATIONAL MOBILE TELECOMMUNICATIONS-(IMT) SYSTEMS OPERATING IN THE FREQUENCY BANDS 1885 MHz TO 2025 MHz AND 2110 MHz TO 2200 MHz

#### 2.0 INTENT

- 2.1 This Standard Radio System Plan (SRSP) states the requirements for the utilization of the frequency bands between 1885 to 2025 MHz and 2110 to 2200 MHz for International Mobile Telecommunications (IMT) systems in Malaysia.
- 2.2 IMT-2000's are third generation mobile systems which provide access, by means of one or more radio links, to a wide range of telecommunications services supported by the fixed telecommunication networks (e.g. PSTN/ISDN/Internet protocol (IP)), and to other services which are specific to mobile users.
- 2.3 IMT systems consists of integrated terrestrial and satellite components are intended as fixed and mobile wireless access to global telecommunications networks and information highways with the following operational features:
  - provision of total service coverage, ranging from in-building and high userdensity urban areas to isolated rural locations
  - capability of serving different mobility environments such as stationary, pedestrian, vehicular and high speed broadband multimedia applications.
  - reception capable of adapting to different propagation environment from satellite to indoor operation
  - seamless evolution from the existing generation of mobile systems
  - universal seamless roaming between multi-mode and multi-band radiocommunication systems (including existing mobile networks e.g. GSM systems).
- 2.3 IMT systems are envisaged to rapidly evolve to ultimately provide the following services:
  - basic telephone service
  - data communication
  - computer networking applications
  - internet applications
  - video teleconferencing
  - multimedia communications
  - broadband applications with asymmetrical data capability in either direction of transmission
  - bandwidth on demand to more than 2 Mbit/s
  - leased line, including broadband leased line
- 2.4 In general, a SRSP is a document designed to provide information on the minimum requirements in the use of a frequency band as described in the Spectrum Plan (see Appendix A). It provides information on technical characteristics of radio systems, frequency channelling, coordination initiatives in order to maximise the utilisation,

minimise interference and optimise the usage of the band. It is intended to regulate the usage of spectrum and does not attempt to establish any detailed equipment standards.

## 3.0 GENERAL

- 3.1 Technical characteristics of equipment used in IMT systems shall conform to all applicable Malaysian standards, international standards, International Telecommunications Union (ITU) and its radio regulations as agreed and adopted by Malaysia.
- 3.2 All installations must comply with safety rules as specified in applicable standards.
- 3.3 The equipment used shall be certified under the Communications and Multimedia (Technical Standards) Regulations 2000.
- 3.4 The allocation and allotment of this frequency band and the information in this SRSP are subject to review from time to time to reflect new developments in the communications and multimedia industry (C&M).
- 3.5 With the trend towards economic and social globalisation, the world community had recognised the need for a universal system of communications, in particular mobile telecommunications accessible anywhere and at any time.
- 3.6 In 1986, the ITU began its studies on International Mobile Telecommunications 2000 (IMT-2000), which was originally known as Future Public Land Mobile Telecommunication Systems (FPLMTS). Subsequently, in 1992, the World Administrative Radio Conference (WARC-92) identified the bands 1885 2025 MHz and 2110 2200 MHz as being intended for use on a worldwide basis by administrations wishing to implement IMT-2000, including the bands 1980 2010 MHz and 2170 2200 MHz which were identified for the satellite component of IMT-2000.
- 3.7 It is proposed that paired and unpaired bands will be used in IMT systems. FDD transmission may be combined with TDD transmission, or with other forms of transmission, in order to make most effective and efficient use of the bands for delivering IMT system services and to prevent asymmetry decreasing the efficiency of spectrum use.
- 3.8 Table 1 provides the typical technical and operational characteristics kinds of technologies which fulfil the requests for IMT-2000 and are accepted by ITU-R as the standard for the service. Further information on the terrestrial radio interfaces can be found in the ITU-R Report M.2039:

## TABLE 1

Full name	Common names
	UTRA FDD
IMT-2000 CDMA Direct Spread	WCDMA
	UMTS
	CDMA2000 1X and 3X
IMT-2000 CDMA Multi-Carrier	CDMA2000 1xEV-DO
	CDMA2000 1xEV-DV
	UTRA TDD 7.68 Mchip/s high chip rate
	UTRA TDD 3.84 Mchip/s high chip rate
IMT 2000 CDMA TDD (time code)	UTRA TDD 1.28 Mchip/s
INT-2000 CDMA TDD (time-code)	low chip rate
	(TD-SCDMA)
	UMTS
IMT 2000 TDMA Single Corrier	UWC-136
INT-2000 TDMA Single-Carrier	EDGE
IMT-2000 FDMA/TDMA	DECT
(frequency-time)	DECI
IMT-2000 OFDMA TDD WMAN	Mobile WiMAX

#### IMT-2000 terrestrial radio interfaces

- FDD: Frequency division duplex.
- TDD: Time division duplex.
- UTRA: Universal terrestrial radio access.
- 3.9 In January 2002, by Ministerial Direction to determine a standard for the service and in consultation with the industry, Wideband CDMA was selected as the chosen platform for IMT-2000 in Malaysia. The detailed specifications of the radio interfaces of International Mobile Telecommunications-2000 (IMT-2000) is provided in ITU-R M.1457 while the frequency band plan is based on the radio frequency arrangement of ITU-R Recommendation ITU-R M.1036.

## 4.0 CHANNELLING PLAN

4.1 The frequency bands 1885-2025 MHz and 2110-2200 MHz currently identified internationally for IMT system is divided into sub-bands. Current utilisation of the sub-bands is shown in Table 2 below. This band plan is subject to amendment if deemed necessary by SKMM.

#### TABLE 2

Sub-Frequency range Application band (MHz) 1885-1900MHz - Used for Wireless PABX (DECT systems) 1900-1915MHZ – Reserved for Broadband Wireless Ι 1885 - 1920Access using TDD technology based on IMT standard 1915-1920MHZ - Allocated as a TDD band using IMT standard Allocated as a FDD band for mobile application using IMT Π 1920 - 1980standard III 1980 - 2010Reserved for IMT Mobile Satellite service 2010 - 2025Allocated as a TDD band using IMT standard IV Allocated as a FDD band for mobile application using IMT V 2110 - 2170standard Reserved for IMT-2000 Mobile Satellite Service VI 2170 - 2200

IMT Frequency Band Plan for the frequency bands 1885-2025 MHz and 2110-2200 MHz

- 4.2 Following the release of the Applicant Information Package (AIP) 2002 and AIP 2005 for IMT-2000 Spectrum Assignment (SA), the current frequency band plan for Malaysia is given in Appendix B.
- 4.3 As a result of the process set out in AIP 2002 and AIP 2005, the following spectrum were assigned:
  - a. 1950-1965MHz; 2140-2155MHz, and 2020-2025MHz (Referred to as Spectrum Assignment No. SA/01/2003)
  - b. 1935-1950MHz; 2125-2140MHz; and 2015-2020MHz (Referred to as Spectrum Assignment No. SA/02/2003)
  - c. 1965-1980MHz; 2155-2170MHz, and 2010-2015MHz (Referred to as Spectrum Assignment No. SA/01/2006)
  - d. 1920-1935MHz; 2110-2125MHz; and 1915-1920MHz (Referred to as Spectrum Assignment No. SA/02/2006)
- 4.4 The frequency band from 1900 MHz to 1915 MHz is intended for Broadband Wireless Access (BWA) using TDD technology.
- 4.5 The frequency band from 1885 MHz to 1900 MHz is intended for private use using cordless telephone (DECT) system.

## 5.0 REQUIREMENTS FOR USAGE OF SPECTRUM

- 5.1 This SRSP covers the minimum key characteristics considered necessary in order to make the best use of the available frequencies.
- 5.2 Only systems using digital technologies that promote spectral efficiency will be issued with an assignment. Capacity enhancing digital techniques is being developed

rapidly and such techniques that promote efficient use of spectrum, without reducing quality of service are encouraged.

- 5.3 In some cases, a radio system conforming to the requirements of this SRSP may require modifications if harmful interference is caused to other radio stations or systems.
- 5.4 The allocation of spectrum and shared services within these bands are found in the Spectrum Plan and an extract of it is shown in Table 1 in Appendix A
- 5.5 Maximum radiated power:
  - 5.5.1 Base Station transmissions should not exceed +61dBm/5MHz EIRP.
  - 5.5.2 On a case to case basis, higher EIRP may be permitted if acceptable technical justification is provided.
  - 5.5.3 Subscriber terminal station should comply with the technical specification set by SKMM and Class Assignment (CA).
- 5.6 In some cases, a radio system conforming to the requirements of this SRSP may require modifications if major interference is caused to other radio stations or systems.
- 5.7 For the systems operating within the TDD spectrum blocks:
  - 5.7.1 It is noted that there is potential of interference to be occurred when 2 different operators operates on adjacent channel blocks. However, this potential interference could be mitigated such as via synchronization between the TDD operators or by geographical separation. If there is a need to introduce guard spectrum, it is inclusive within the designated spectrum block allocated to the operators.
  - 5.7.2 It should further be noted that the introduction of the BWA in this band is allowed to operate without causing any interferences to other adjacent services and its coexistence and the mitigation of interference may require adopting a number of engineering solutions based on industry best practise guidelines and recommendations described in this document. The operating recommendations as stated below are to be fully observed and complied by the BWA system at all time, unless subsequently modified and updated in this document:
    - 5.7.2.1 For the base stations, the power of any emission outside a licensee's assigned frequency blocks shall be attenuated below the transmitter power (P) (in Watts) by at least 43 + 10 log (P) dB at the block edge. Compliance with the emission limit is to be measure based on the use of measurement instrumentation employing a resolution bandwidth as shown in Exhibit 1.

Exhibit 1: Block Edge Emission limit and measurement bandwidth



5.7.2.2 When an emission outside of an assigned frequency block causes major interference, SKMM may, at its discretion, imposed greater attenuation than specified in this section.

## 6.0 PRINCIPLES OF ASSIGNMENT

- 6.1 Authorisation to use the spectrum from,
  - a) 1915 MHz to 1920 MHz;
  - b) 1920 MHz to 1980 MHz;
  - c) 2010 MHz to 2025 MHz; and
  - d) 2110 MHz to 2170 MHz,

are by way of Spectrum Assignment (SA) under the Ministerial Determination on Spectrum Assignment No. 1 of 2002 and Ministerial Determination on Spectrum Assignment No. 1 of 2005;

while, authorisation to use the spectrum from

a) 1900 MHz to 1915 MHz;

is by way of Apparatus Assignment (AA) and the subscriber's access device is by way of CA;

and, authorisation to use the spectrum from

a) 1885 MHz to 1900 MHz

is by way of CA.

6.2 Eligible persons who may apply for assignments on the bands mentioned in paragraph 6.1 are:

Spectrum Assignment

6.2.1 By invitation from the Commission and the issuance of the Applicant Information Package (AIP).

Apparatus Assignment

- 6.2.2 Network Facilities Provider Individual (NFP(I)) licence holder, who provides radiocommunication transmitters and links for the allocated band (1900-1915MHz).
- 6.2.3 Applicants are required to:
  - 6.2.3.1 Submit AA application for the apparatus on the prescribed AA forms.
  - 6.2.3.2 Submit a roll out plan showing the sites or locations and implementation timelines (at least for the period of five (5) year) for each site or location of each proposed service area.
  - 6.2.3.3 Submit topographical maps (preferably in electronic format) which clearly show the coverage boundary of each proposed service area.
- 6.2.4 To further facilitate planning and efficiency in spectrum management, upon successful application the NFP(I) licence holder shall be allocated with the specific spectrum sub-block/s with a minimum of 5 MHz. Such arrangements are only for administrative or spectrum management purposes in order to facilitate the NFP(I) licensees in their roll out planning. Spectrum in any areas not utilised or underutilised, shall be opened to other NFP(I) licensees in the queue.
- 6.2.5 Interested applicants are invited to apply when the SKMM issues the relevant notice for application.
- 6.3 The maximum validity period of SA is 20 years or a specified lesser period while the maximum validity period for an AA is five (5) years and the AA holder may make fresh application for the AA not less than two months before expiry.
- 6.4 Issuance of an AA is also subject to successful co-ordination among assigned stations and with neighbouring administrations where it applies.
- 6.5 The conditions that may be imposed by the SKMM are the standard conditions for an assignment, and conditions for a SA, AA and CA as specified in the Communications and Multimedia (Spectrum) Regulations 2000.

#### 7.0 **IMPLEMENTATION**

7.1 This SRSP shall be effective on the date of issuance of this document.

#### 8.0 COORDINATION REQUIREMENT

- 8.1 Use of these frequency bands shall require coordination with the neighbouring countries within the coordination zones of 50 kilometres from our neighbouring countries. Note that the above coordination distance is continuously being reviewed with our neighbouring countries and may be updated from time to time.
- 8.2 Technical analysis is carried out by SKMM before an assignment is issued. Operatorto-operator coordination may be required to avoid interference.
- 8.3 In the event of any interference, SKMM will require affected users to carry out an operator-to-operator coordination. In the event that the interference remained unresolved after 24 hours by the operators, the affected parties may escalate the matter to SKMM for a resolution. SKMM will decide the necessary modifications and schedule of modifications to resolve the interference.
- 8.4 Assignment holders are expected to take full advantage of interference mitigation techniques such as antenna discrimination, tilt, polarization, frequency discrimination, shielding/blocking (introduce diffraction loss), site selection, and/or power control to facilitate the coordination of systems.
- 8.5 Coordination requirement may be required with reference to the potential interference problems as depicted in Appendix C.

#### 9.0 **REVOCATION**

9.1 MCMC SRSP-524M, 18 August 2003 Issue 2 is hereby revoked.

#### **10.0 REFERENCES**

- [1] Spectrum Plan
- [2] **RECOMMENDATION** ITU-R **M.1036** Frequency for arrangements implementation of the terrestrial component of International Mobile Telecommunications-2000 (IMT-2000) in the bands\* 806-960 MHz\*\*, 1 710-2 025 MHz, 2 110-2 200 MHz and 2 500-2 690 MHz
- [3] **ITU-R M.1457** Detailed specifications of the radio interfaces of International Mobile Telecommunications-2000 (IMT-2000)
- [4] **REPORT ITU-R M.2039** Characteristics of terrestrial IMT-2000 systems for frequency sharing/interference analyses
- [5] ECC Report 82 Compatibility Study for UMTS Operating Within the GSM 900 and GSM 1800 Frequency Bands
- [6] ECC Report 96 Compatibility between UMTS 900/1800 and Systems Operating in Adjacent Bands

- [7] Applicant Information Package No.1 of 2002 IMT-2000 Spectrum Assignment in Malaysia
- [8] Applicant Information Package No. 1 of 2005 IMT-2000 Spectrum Assignment in Malaysia

## Issued by:



Suruhanjaya Komunikasi dan Multimedia Malaysia

Malaysian Communications and Multimedia Commission

Frequency	ITU Allocations			
Band ( <b>kHz</b> )	Region 1	Region 2	Region 3	Malaysian Allocations
1 710 -	FIXED			FIXED
1 930	MOBILE 5.384A 5.388A 5.38	MOBILE 5.384A 5.388A MLA53		
	5.149 5.341 5.385 5.386 5.	387 5.388		5.149 5.341 5.385 5.388 MLA3 MLA44 MLA81
1 930-	FIXED			FIXED
1 970	MOBILE 5.388A 5.388B			MOBILE 5.388A 5.388B
				Mobile-satellite (Earth-to-space)
	5.388			5.388
1 970-	FIXED			FIXED
1 980	MOBILE 5.388A 5.388B			MOBILE 5.388A MLA53
	5.388			5.388
1 980-	FIXED			FIXED
2 010	MOBILE			MOBILE MLA53
	MOBILE-SATELLITE (Earth-	to-space) 5.351A		MOBILE-SATELLITE (Earth-to-space) 5.351A
	5.388 5.389A 5.389B 5.389	)F		5.388 5.389A MLA3
2 010-	FIXED			FIXED
2 025	MOBILE 5.388A 5.388B			MOBILE
				MOBILE-SATELLITE (Earth-to-space)
	5.388			5.388 5.389C 5.389E

# APPENDIX A: EXTRACT OF SPECTRUM PLAN

Frequency	ITU Allocations			
Band (kHz)	Region 1	Region 2	Region 3	Malaysian Allocations
2 025- 2 110	SPACE OPERATION (Earth-to-space) (space-to- space) EARTH EXPLORATION- SATELLITE (Earth-to- space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to- space)	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION- SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392 MLA3 MLA14 FIXED MOBILE 5.388A MLA53	2 025- 2 110	SPACE OPERATION (Earth-to-space) (space-to- space) EARTH EXPLORATION- SATELLITE (Earth-to- space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to- space)
	5.392	SPACE RESEARCH		5.392
2 110-	FIXED	(deep space) (Earth-to-space) 5.388	2 110- 2 120	FIXED
2 120	MOBILE 5.388A 5.388B		2 120	MOBILE 5.388A 5.388B
	SPACE RESEARCH (deep space) (Earth-to- space)	FIXED MOBILE 5.388A 5.388B		SPACE RESEARCH (deep space) (Earth-to-space)
	5.388	Mobile-satellite (space-to- Earth)		5.388
2 120-	FIXED	5.388	2 120-	FIXED
2 160	MOBILE 5.388A 5.388B	FIXED	2 160	MOBILE 5.388A 5.388B
	5.388	MOBILE-SATELLITE (space-to-Earth)		5.388
2 160-	FIXED		2 160-	FIXED
2 170 MOBILE 5.38	MOBILE 5.388A 5.388B	5.388 5.389C 5.389E	2 170	MOBILE 5.388A 5.388B
	5.388			5.388
2 170- 2 200	FIXED			FIXED
	MOBILE	MOBILE		
	MOBILE-SATELLITE (space	-to-Earth) 5.351A		MOBILE-SATELLITE (space-to-Earth) 5.351A
	5.388 5.389A 5.389F			5.388 5.389A MLA3 MLA53

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

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

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

**5.341** 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.

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

**5.384A** The bands, or portions of the bands, 1710-1885 MHz, 2300-2400 MHz and 2500-2690 MHz, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-07). 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. (WRC-07)

**5.385** *Additional allocation:* the band 1718.8-1722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. (WRC-2000)

**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-2000 (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)<sup>\*</sup>. (See also Resolution 223 (WRC-2000)<sup>\*</sup>.) (WRC-2000)

**5.388A** In Regions 1 and 3, the bands 1 885-1 980 MHz, 2010-2025 MHz and 2110-2170 MHz and, in Region 2, the bands 1 885-1 980 MHz and 2110-2160 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)<sup>\*</sup>. 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, the Libyan Arab Jamahiriya, Jordan, Kenya, Kuwait, Mali, Morocco, Mauritania, Nigeria, Oman, Uganda, Qatar, the 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 high altitude platform station (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  $-127 \text{ dB}(W/(\text{m}^2 \cdot \text{MHz}))$  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 (Rev.WRC-2000). (WRC-07)

**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.

- MLA3 Notification of Issuance of Class Assignment.
- MLA44 Frequency Spectrum 806 MHz to 960 MHz, 1710 MHz to 1885 MHz, 2504 MHz to 2688 MHz planned for IMT 2000 extension band.
- MLA81 Standard Radio System Plan 544: Requirements for Broadband Wireless Access (BWA) Systems Operating in the Frequency Band from 1790 MHz to 1800 MHz.

# APPENDIX B: BAND PLAN OF CURRENT FREQUENCY BANDS 1885-2025 MHz TO 2110-2200 MHz

1885 MHz	1915 MHz	1980 MHz	2025 MHz	2170 MHz
1900 MH	z 1920 MHz	20	010 MHz 2110 MHz	2200 MHz
SI SI AI IN PI	pectrum Assignmo pectrum Assignmo paratus Assignm 1T-2000 Mobile S rivate use (Wirele	ent (FDD) for IMT sy ent (TDD) for IMT sy eent (TDD) for BWA atellite Service ss PABX or DECT s	vstems vstems systems)	

#### **APPENDIX C: INTERFERENCE RESOLUTION PROCESS**



# TABLE 1: INTERFERENCE RESOLUTION PRIORITY

	Resolution Type of Priority	Description	
1	Service Priority	Primary has priority over secondary services. Among co- primary or co-secondary services, the stated priority is accorded as in the Spectrum Plan	
2	Assignment Type Priority	Spectrum Assignment (SA) and Apparatus Assignment (AA) have equal priority but are of higher priority than Class Assignment (CA)	
3	Service Type Priority	In the event where service priority and assignment type priority are equal for affected parties, the following list will determine the priority level for the interference case (the earlier in the list is given higher priority): i. Safety or Radionavigation service; ii. Based on the Date of Apparatus Assignment - Priority is given to the earliest/first installation	

# **TABLE 2: INTERFERENCE RESOLUTION TIMELINE TO PARTIES**

	Types of interference	Description	Resolution Timeline
1	Harmful	Interference which endangers or seriously degrades, obstructs or repeatedly interrupts the functioning of a radionavigation service or one or more safety services operating in accordance with CMA (Spectrum) Regulations 2000	To cease* operation immediately within 24 hours or earlier as specified in the notice issued by SKMM
2	Major	Electromagnetic interference rendering any apparatus or services unsuitable for their intended purpose. For this purpose interference to public correspondence service is considered under this category	To cease* operation within 3 days or earlier as specified in notice issued by SKMM if interference cannot be resolved.
3	Minor	Electromagnetic interference which does not affect the overall operation of any radiocommunications transmission.	To cease* operation within 7 days or earlier as specified in the notice issued by SKMM if interference cannot be resolved

## \*Note:

Resumption of operation of the apparatus is not allowed unless the assignment holder submit interference resolution or mitigation plan and complete implementation of the mitigation plan to the satisfaction of SKMM to remove/ avoid the interference.