



Standard Radio System Plan

**REQUIREMENTS FOR
INTERNATIONAL MOBILE
TELECOMMUNICATIONS SYSTEMS
OPERATING IN THE FREQUENCY BANDS OF
839 MHz TO 844 MHz
AND
798 MHz TO 803 MHz**

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1 FOREWORD

- 1.1 This Standard Radio System Plan (“**SRSP**”) is prepared by the Malaysian Communications and Multimedia Commission (“**MCMC**”) pursuant to the Communications and Multimedia Act 1998 (“**Act**”) and Spectrum Plan to provide information on the minimum technical and regulatory requirements for efficient use of the **839 MHz to 844 MHz paired with 798 MHz to 803 MHz** frequency bands.
- 1.2 This SRSP does not attempt to establish any detailed equipment standards.
- 1.3 In the event there are any inconsistencies between this SRSP and the Act or any subsidiary legislations made under the Act, the Act or the subsidiary legislation shall prevail.

2 ABBREVIATIONS

AA	Apparatus Assignment
CA	Class Assignment
CEPT	European Conference of Postal and Telecommunications Administrations
EIRP	Effective Isotropic Radiated Power
FACSMAB	Frequency Assignment Committee Singapore, Malaysia and Brunei Darussalam
IMT	International Mobile Telecommunication
ITU	International Telecommunication Union
ITU-R	ITU Radiocommunication Sector
JCC	Joint Committee on Communications between Indonesia and Malaysia
JTC	Joint Technical Committee on Coordination and Assignment of Frequencies along Malaysia-Thailand Common Border
MIMO	Multiple Input Multiple Output
NFP(I)	Network Facilities Provider Individual
RFI	Radio Frequency Interference
SA	Spectrum Assignment
SRSP	Standard Radio System Plan
TRP	Total Radiated Power

3 INTENT

- 3.1 This SRSP is intended to ensure efficient provision of mobile service in Malaysia with minimal service disruption and radio frequency interference among the service providers.
- 3.2 This SRSP states the requirements for the utilisation of the frequency bands of **839 MHz to 844 MHz paired with 798 MHz to 803 MHz (“Frequency Bands”)** for IMT systems in Malaysia.
- 3.3 The usage of the Frequency Bands is intended for the purpose of providing wireless telecommunication connectivity to subscribers and including but not limited to applications such as voice, internet, video, images, interactive multimedia, high-speed data and mobile television.
- 3.4 The term ‘IMT’ in this document is referred to IMT-Advanced system.

4 GENERAL

- 4.1 Technical characteristics of equipment used in IMT systems shall conform to all applicable Malaysian standards, international standards, ITU and its radio regulations as agreed and adopted by Malaysia.
- 4.2 All equipment installations must comply with safety rules as specified in the applicable standards.
- 4.3 The equipment used shall be certified under the Communications and Multimedia (Technical Standards) Regulations 2000.
- 4.4 The allocation and assignment of the Frequency Bands and the information in this SRSP are subject to review from time to time to reflect new developments in the communications and multimedia industry.

5 CHANNEL ARRANGEMENT

- 5.1 The allocation of services within the Frequency Bands is described in the Spectrum Plan.
- 5.2 For the deployment of IMT systems in the Frequency Bands, the channel arrangement is shown in **Appendix A** of this SRSP. The channel arrangement is based on the radio frequency arrangement of the ITU-R Recommendation M.1036.
- 5.3 The implementation methods are subject to future mitigation techniques deployed.

6 REQUIREMENTS FOR USAGE OF SPECTRUM

- 6.1 This SRSP covers the minimum key characteristics considered necessary in order to make the best use of the Frequency Bands.
- 6.2 The use of the Frequency Bands is only allowed for deployment of up to IMT-Advanced system only.
- 6.3 The Frequency Bands are not limited in their use for direct radio connection between a radio base station and subscribers in a point-to-multipoint configuration. It should be further noted that the operation of the IMT systems in the Frequency Bands are allowed without causing any interference to other services in the adjacent frequency bands. The coexistence and mitigation of interference may require adopting a number of engineering solutions based on industry best practise guidelines and recommendations described in this SRSP.
- 6.4 Maximum radiated power and unwanted emission for IMT systems:
 - 6.4.1 Base station
 - 6.4.1.1 base station in-block transmissions should not exceed **64 dBm / 5 MHz EIRP**;
 - 6.4.1.2 for the case of MIMO deployment, the above EIRP value shall be applicable per transmit port;
 - 6.4.1.3 on a case to case basis, higher EIRP value may be permitted

if acceptable technical justification is provided; and

- 6.4.1.4 the unwanted emissions in out-of-band and spurious domain outside an assignment holder's assigned frequency blocks shall comply with the ITU-R Recommendation M.2070.

6.4.2 Mobile station

- 6.4.2.1 mobile station transmissions should not exceed **23 dBm TRP** for mobile/nomadic terminal station and should not exceed **23 dBm EIRP** for fixed terminal stations; and

- 6.4.2.2 the unwanted emissions in out-of-band and spurious domain outside an assignment holder's assigned frequency blocks shall comply with the ITU-R Recommendation M.2071.

6.5 In some cases, a radio system conforming to the requirements of this SRSP may require modifications if major interference is caused to other radio communication stations or systems.

6.6 When an unwanted emission outside of an assigned frequency block causes harmful interference, MCMC may at its discretion, impose greater attenuation than specified in this section.

7 PRINCIPLES OF ASSIGNMENT

7.1 Authorisation to use the Frequency Bands for IMT base station(s) is by way of Apparatus Assignment ("**AA**").

7.2 Eligible persons for assignments mentioned above are as follows:

- 7.2.1 the NFP (I) licence holders who provide radiocommunications transmitters and links.

7.2.2 applicants are required to:

- i. submit AA application for the apparatus on the prescribed AA form in accordance with the Act, the Communications and Multimedia (Spectrum) Regulations 2000 ("**Spectrum Regulations**") and any relevant instrument issued by MCMC from time to time; and

- ii. submit any other documents and/or information that may be requested by MCMC.

7.3 The conditions that may be imposed by MCMC are the standard conditions for an assignment as specified in the Spectrum Regulations and any additional conditions as may be imposed by MCMC from time to time.

8 IMPLEMENTATION

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

8.2 Noting that the deployment of new base station is an on-going process such as annual capacity enhancement of base station and new coverage deployment of base station, those base stations under development are taken into consideration in the coordination process.

9 COORDINATION REQUIREMENT

9.1 The assignment holder shall ensure that the operation of the IMT systems will not cause interference to other services in the adjacent frequency bands at all time.

9.2 The assignment holder shall take all necessary actions on interference mitigation techniques including but not limited to antenna discrimination, tilt, polarization, frequency discrimination, shielding/blocking (introduce diffraction loss), site selection, power control and/or filter installation to facilitate the coordination of systems.

9.3 In the event of any interference, MCMC shall have the discretion to decide the necessary modifications and schedule of modifications to resolve the interference. MCMC will be guided by the interference resolution process as shown in **Appendix B** of this SRSP.

9.4 The use of the Frequency Bands shall also require coordination with the neighbouring countries within the coordination zones. The coordination zones are based on agreements reached at border committees namely FACSMAB,

JTC and JCC.

- 9.5 When there is no agreed coordination zone, the zone within 50 km from the neighbouring countries will be used.
- 9.6 It is to be noted that the coordination distance and other coordination parameters between Malaysia and the neighbouring countries may be reviewed and updated from time to time.
- 9.7 Agreement on the band plan from one neighbouring country to another may differ subject to requirement of the respective country.

10 REVOCATION

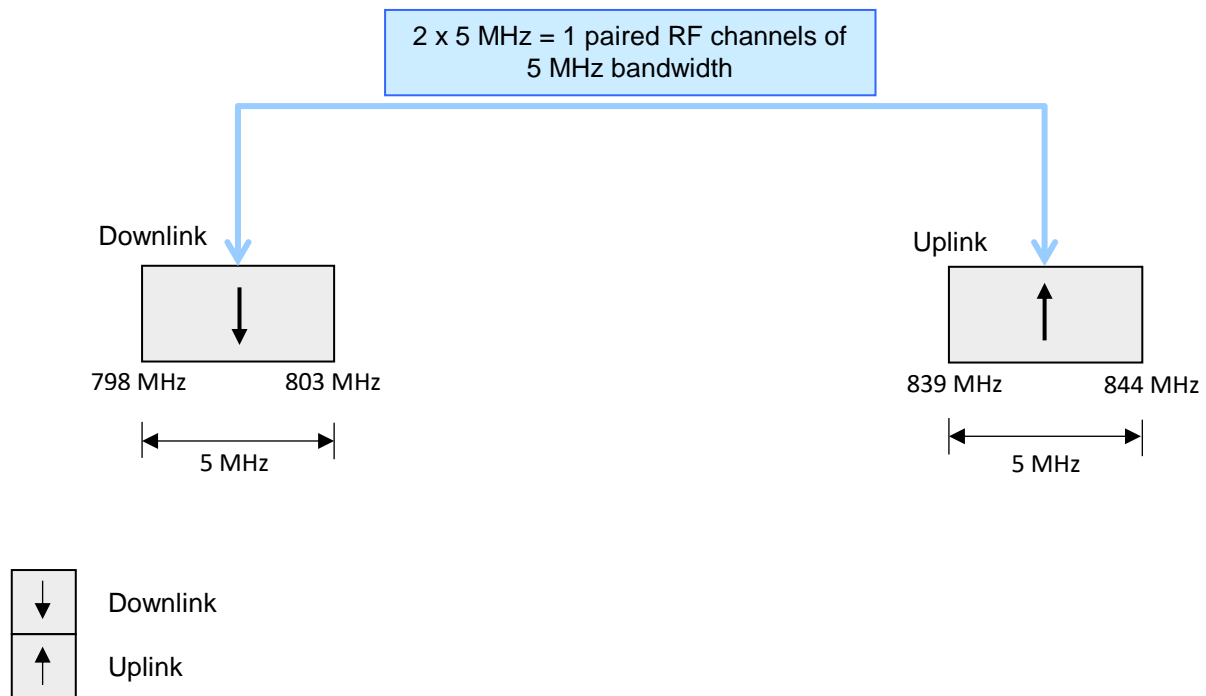
- 10.1 MCMC SRSP MS 800, dated 9 November 2020 is hereby revoked.

11 REFERENCES

- i) **Spectrum Plan**
- ii) **Recommendation ITU-R M.1036** - Frequency arrangements for implementation of the terrestrial component of International Mobile Telecommunications in the bands identified for IMT in the Radio Regulations
- iii) **Recommendation ITU-R M.2012** - Detailed specifications of the terrestrial radio interfaces of International Mobile Telecommunications Advanced (IMT-Advanced)
- iv) **Recommendation ITU-R M.2070** - Generic unwanted emission characteristics of base stations using the terrestrial radio interfaces of IMT-Advanced
- v) **Recommendation ITU-R M.2071** - Generic unwanted emission characteristics of mobile stations using the terrestrial radio interfaces of IMT-Advanced
- vi) **CEPT Report 30** - The identification of common and minimal (least restrictive) technical conditions for 790 – 862 MHz for the digital dividend in the European Union
- vii) **CEPT Report 53** - (Report A) To develop harmonised technical conditions for the 694 -790 MHz ('700 MHz') frequency band in the EU for the provision of wireless broadband and other uses in support of EU spectrum policy objectives
- viii) **CEPT Report 60** - (Report B) To develop harmonised technical conditions for the 694 -790 MHz ('700 MHz') frequency band in the EU for the provision of wireless broadband and other uses in support of EU spectrum policy objectives

APPENDIX A: CHANNEL ARRANGEMENT

CHANNEL ARRANGEMENT OF IMT SYSTEMS OF
839 MHz TO 844 MHz PAIRED WITH 798 MHz TO 803 MHz



APPENDIX B: INTERFERENCE RESOLUTION PROCESS

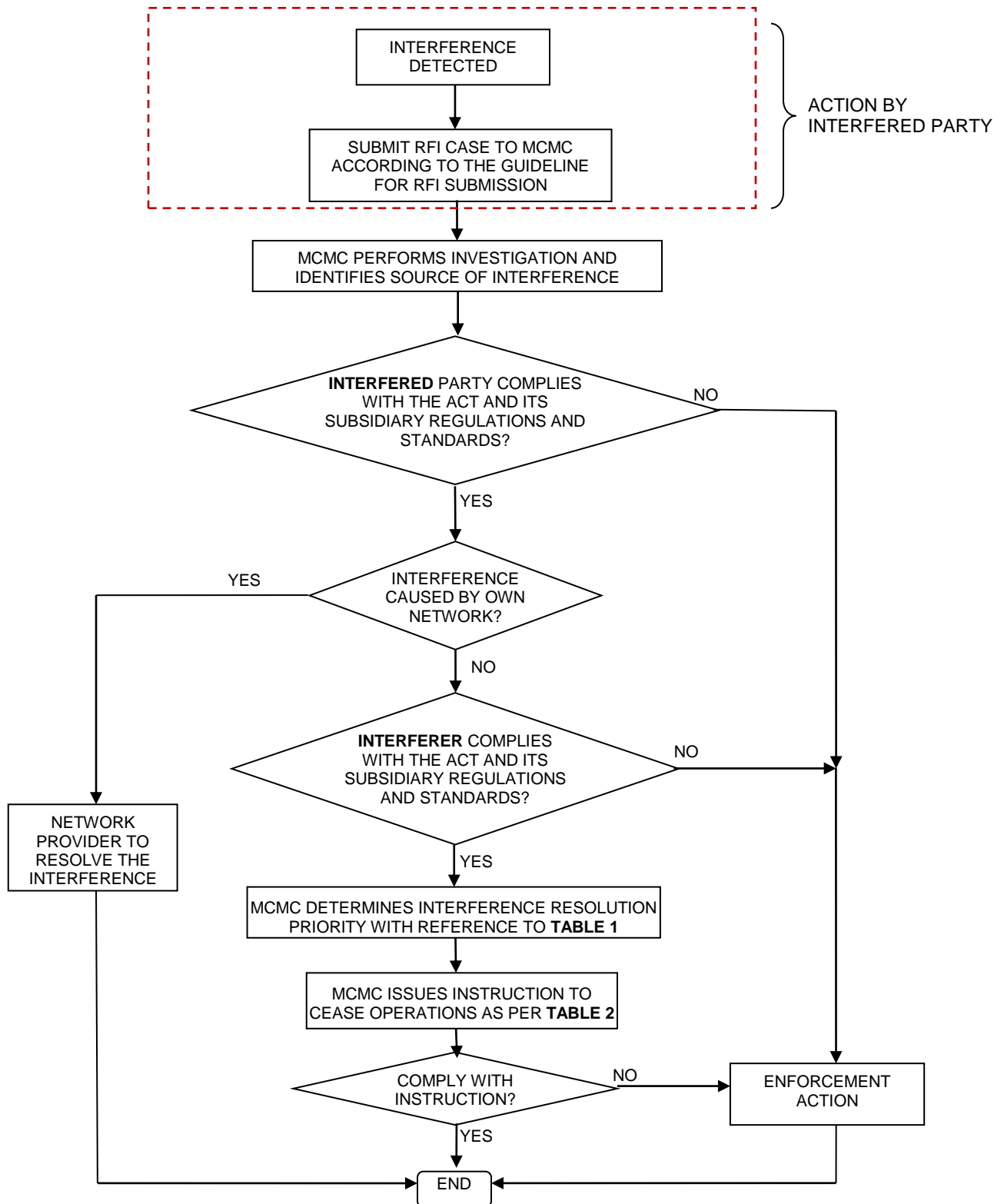


TABLE 1: INTERFERENCE RESOLUTION PRIORITY

No.	Resolution Type of Priority	Description
1	Service Priority	Primary services have 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): <ul style="list-style-type: none"> i. Safety or Radionavigation service; and ii. Based on the date of apparatus assignment - Priority is given to the earliest/first installation.

TABLE 2: INTERFERENCE RESOLUTION TIMELINE TO PARTIES

No.	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 the Regulations.	To cease* operation immediately within 24 hours or earlier as specified in the notice issued by MCMC.
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 MCMC 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 MCMC 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 has completed the implementation of the mitigation plan to the satisfaction of MCMC to remove/ avoid the interference.