



**MCMC SRSP FS 6.425**  
**28 JANUARY 2025**

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**Standard Radio System Plan**

**REQUIREMENTS FOR**  
**FIXED WIRELESS SYSTEMS**  
**OPERATING IN THE FREQUENCY BAND OF**  
**6425 MHz to 7110 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 the Spectrum Plan (“**Spectrum Plan**”) to provide information on the minimum technical and regulatory requirements for the efficient use of the **6425 MHz to 7110 MHz** frequency band (“**the said band**”).
- 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

<b>AA</b>	Apparatus Assignment
<b>CA</b>	Class Assignment
<b>EIRP</b>	Equivalent Isotropically Radiated Power
<b>dBW</b>	Decibel watt
<b>FACSMAB</b>	Frequency Assignment Committee of Singapore, Malaysia and Brunei Darussalam
<b>FS</b>	Fixed Service
<b>FSS</b>	Fixed-Satellite Service
<b>FWS</b>	Fixed Wireless Systems
<b>GHz</b>	Gigahertz
<b>ITU</b>	International Telecommunication Union
<b>ITU-R</b>	ITU Radiocommunication Sector
<b>JCC</b>	Joint Committee on Communications between the Republic of Indonesia and Malaysia
<b>JTC</b>	Joint Technical Committee on Coordination and Assignment of Frequencies along Malaysia – Thailand Common Border
<b>km</b>	kilometre
<b>MHz</b>	Megahertz
<b>NFP(I)</b>	Network Facilities Provider (Individual)
<b>RF</b>	Radio Frequency
<b>RR</b>	Radio Regulations
<b>SA</b>	Spectrum Assignment
<b>SRSP</b>	Standard Radio System Plan

**TRILATERAL**

Trilateral Coordination Meeting between the Republic of  
Indonesia, Malaysia and Singapore

### **3. INTENT**

- 3.1 This SRSP is intended to ensure the efficient provision of FWS in Malaysia with minimal service disruption and RF interference among the service providers.
- 3.2 This SRSP provides the minimum requirements for the utilisation of FWS in the said band for the digital transmission of FWS.
- 3.3 The intended use of this FWS is for transport (trunking) and mobile backhaul networks only.

### **4. GENERAL**

- 4.1 The technical characteristics of the FWS equipment shall conform to all applicable Malaysian standards and international standards including the ITU and its RR as agreed and adopted by Malaysia.
- 4.2 Although the FWS shall conform to the requirements of this SRSP, MCMC may require that modifications be made to the system whenever interference is caused or is likely to be caused to other radio stations or systems of services as listed in the Spectrum Plan.
- 4.3 For the avoidance of doubt, MCMC shall not be responsible for any costs incurred as a result of the system modification. The cost of modification shall be fully borne by the assignment holder.
- 4.4 All FWS communications equipment installations shall comply with the safety rules and other requirements as specified in the applicable standards.

- 4.5 The FWS communications equipment used shall be certified under regulation 14 Communications and Multimedia (Technical Standards) Regulations 2000.
- 4.6 The allocation, requirements and information in this SRSP are subject to further review by MCMC from time to time to reflect new developments on the use of the said band in the communications and multimedia industry.

## 5. CHANNEL ARRANGEMENT

- 5.1 The allocation of services within the said band is described in the Spectrum Plan.
- 5.2 The RF channel arrangement of this SRSP is based on the RF channel arrangement in the latest version of **Recommendation ITU-R F.384**. The assignment holders are encouraged to refer to the latest version of the recommendation document(s) published on the ITU-R website.
- 5.3 For this SRSP, the preferred RF channel arrangement for the system operating in the said band, is derived as follows:

Let:

$f_0$  be the frequency of the centre of the band of frequencies occupied (MHz), where  $f_0 = 6770$  MHz;

$f_n$  be the centre frequency of one (1) RF channel in the lower half of the frequency band (MHz);

$f'_n$  be the centre frequency of one (1) RF channel in the upper half of the frequency band (MHz).

## Channel Arrangement for 40 MHz Bandwidth

- 5.4 For a channel arrangement of 40 MHz, up to eight (8) transmit and eight (8) receive channels, with each channel accommodating a bit rate of the order of 140 Mbits/s, or synchronous digital hierarchy bit-rates:

The frequencies of individual channels are expressed by the following relationship:

lower half of the band:  $f_n = f_0 - 350 + 40 n \text{ MHz}$

upper half of the band:  $f'_n = f_0 - 10 + 40 n \text{ MHz}$

where:

$n = 1, 2, 3, 4, 5, 6, 7 \text{ or } 8.$

Note:

- i. Separation between adjacent channels = 40 MHz
- ii. Separation between corresponding transmit and receive channels = 340 MHz

- 5.5 The channel arrangement is shown in **Figure 1** and **Table 1** of **APPENDIX A** of this SRSP.
- 5.6 When the equipment and network characteristics permit, co-channel frequency reuse of the arrangement in **Figure 2** and **Table 1** of **APPENDIX A** of this SRSP can be employed for improving spectral efficiency.

## Channel Arrangement for 20 MHz Bandwidth

- 5.7 For a channel separation of 20 MHz, up to sixteen (16) transmit and sixteen (16) receive channels, with each channel accommodating digital plesiochronous, or synchronous medium capacity rates:

The frequencies of individual channels, obtained by interleaving additional channels between those of the main pattern in paragraph 5.4 above, are expressed by the following relationship:

lower half of the band:  $f_n = f_0 - 350 + 20 n \text{ MHz}$

upper half of the band:  $f'_n = f_0 - 10 + 20 n \text{ MHz}$

where:

$$n = 1, 2, 3, 4, \dots, 14, 15, \text{ or } 16.$$

Note:

- i. Separation between adjacent channels = 20 MHz
- ii. Separation between corresponding transmit and receive channels = 340 MHz

- 5.8 The channel arrangement is shown in **Figure 3** and **Table 2** of **APPENDIX A** of this SRSP.

## 6. REQUIREMENTS FOR USAGE OF SPECTRUM

- 6.1 This SRSP covers the minimum requirements to be followed by the assignment holders in order to ensure efficient use characteristics of the said band.

- 6.2 The allocation of spectrum and services within the said band is described in the Spectrum Plan.
- 6.3 The minimum path length requirement for FWS in the said band **shall be 20 km<sup>1</sup>**.
- 6.4 The channel arrangements and the usage of the transmit and receive channels shall comply with **Section 5** in this SRSP.
- 6.5 The FWS of FS shall not interfere with the earth stations of FSS in the said band and shall comply with **Recommendation ITU-R SF.765**, and **Recommendation ITU-R SM.1540, Article 21** of the RR.
- 6.6 Special care shall be taken by FWS service providers during the network planning stage and installation of their communications equipment to avoid any interference to and from other primary services. The FWS service providers shall take full advantage of interference mitigation techniques such as antenna discrimination, antenna tilting, antenna polarisation, frequency discrimination, shielding/blocking (introduction of diffraction loss), site selection, and/or power control to facilitate coordination of the relevant systems.
- 6.7 FWS receiving stations operating in the 6425 MHz to 6725 MHz should avoid directing their antennas towards the geostationary-satellite orbit and earth stations. It is recommended to maintain a geographical separation between earth stations and terrestrial stations as indicated in **Article 21** of the RR.

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<sup>1</sup> Use of path length less than as specified in paragraph 6.3 may be considered on a case-by-case basis by MCMC.

## 7. PRINCIPLES OF ASSIGNMENT

- 7.1 Authorisation of the use of the said band for FWS station shall be by way of an AA.
- 7.2 The eligibility criteria of applicants for the submission of AA applications are as follows:
- 7.2.1 NFP(I) licence holder, which owns or provides radiocommunications transmitters and links; or
  - 7.2.2 private network facility (Government and private corporations or companies) for private use only.
- 7.3 For the use by private network facility other than offshore, the applicant shall provide proof that the existing NFP(I) licence holders are not able to provide FWS station to the said applicant.
- 7.4 Applicants are required to submit:
- 7.4.1 AA application for the apparatus by using the prescribed AA form in accordance with the Act, relevant subsidiary legislations including the Communications and Multimedia (Spectrum) Regulations 2000 (“**Spectrum Regulations**”), Spectrum Plan and any relevant instruments issued by MCMC including any amendments made to the same; and
  - 7.4.2 any other documents and/or information that may be requested by MCMC.
- 7.5 The AA shall be subject to all conditions as specified in regulations 9, 10 and 22 of the Spectrum Regulations and any further assignment conditions as may be imposed by MCMC from time to time.

- 7.6 The issuance of an AA will be subject to technical analysis and evaluation conducted by MCMC. If necessary, operator-to-operator coordination at defined geographic boundaries may be required to reduce the possibility of interference.
- 7.7 An applicant is encouraged to conduct frequency coordination among existing assignment holders of FWS stations in the same frequency band prior to the submission of the AA application.
- 7.8 The AA shall be assigned based on a first-come, first-served basis.

## 8. COORDINATION REQUIREMENT

- 8.1 The use of the said band shall require coordination with the neighbouring countries within the following coordination zones and shall be subject to the following agreed operational limit:

<b>Border Agreement</b>	<b>Maximum EIRP (dBW)</b>	<b>Coordination Distance</b>
FACSMAB	< 40 dBW	30 km
JCC	< 40 dBW	30 km
	> 40 dBW	50 km
JTC	Not Applicable	35 km
TRILATERAL	< 40 dBW	30 km
	> 40 dBW	50 km

**Table 3: Operational limit for coordination parameters**

- 8.2 In the event there is no agreement on a coordination zone, a zone within 50 km from the border of the neighbouring countries will be applied.

- 8.3 It shall be noted that the coordination zones and parameters are continuously being reviewed with Malaysia's neighbouring countries and may be updated from time to time.
- 8.4 Issuance of an AA is also subject to successful coordination with the above neighbouring countries, where applicable.
- 8.5 The technical mitigation guide as mentioned in paragraphs 6.5 to 6.6 above shall be applied if operator-to-operator coordination is required.
- 8.6 In the event of any interference, the affected assignment holder shall carry out operator-to-operator coordination and frequency scanning. If the interference remains unresolved after 24 hours, the affected parties may escalate the matter to MCMC for a resolution. MCMC will decide on the necessary modifications and schedule of modifications to resolve the interference dispute. MCMC will be guided by the interference resolution process as shown in **APPENDIX B** of this SRSP.
- 8.7 For avoidance of doubt, MCMC shall not be responsible for any costs incurred as a result of the coordination requirement as stipulated in this section 8. The cost in respect of the coordination requirement shall be fully borne by the assignment holders.

## **9. IMPLEMENTATION**

- 9.1 This SRSP shall be effective on its date of issuance of this document.
- 9.2 Any new FWS installation after the issuance of this SRSP, shall adhere to the requirements as set out in this SRSP.

## 10. REVOCATION

10.1 The MCMC SRSP FS 6.425 dated 10 October 2017 is hereby revoked.

## 11. REFERENCES

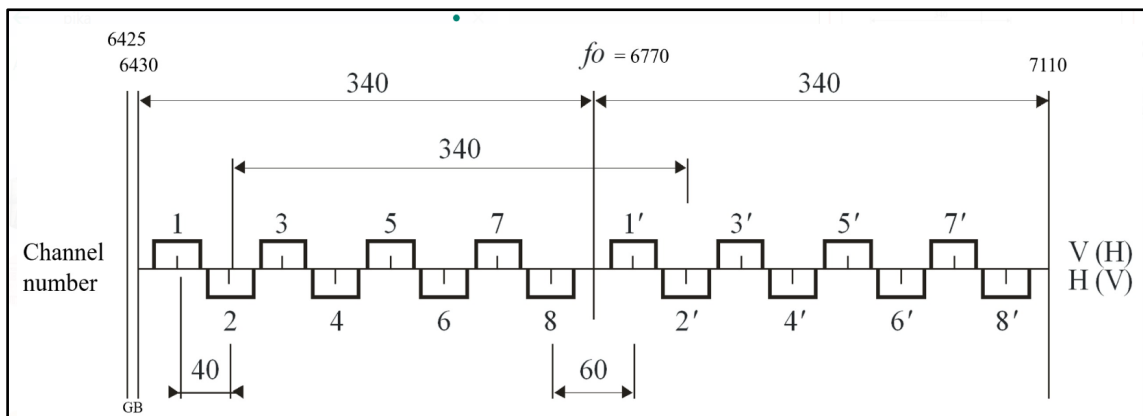
- i. **Spectrum Plan**
- ii. **Recommendation ITU-R F.384** Radio-frequency channel arrangements for medium- and high-capacity digital fixed wireless systems operating in the 6425 MHz to 7125 MHz band
- iii. **Recommendation ITU-R F.592** Vocabulary of terms for the fixed service
- iv. **Recommendation ITU-R F.746** Radio-frequency arrangements for fixed service systems
- v. **Recommendation ITU-R SM.1540** Unwanted emissions in the out-of-band domain falling into adjacent allocated bands
- vi. **ITU Radio Regulations Article 21** Terrestrial and space services sharing frequency bands above 1 GHz
- vii. **Report ITU-R F.2323** Fixed service use and future trends

## APPENDIX A: CHANNEL ARRANGEMENT

RF channel arrangements for FWS operating in the 6425 MHz to 7110 MHz frequency band:

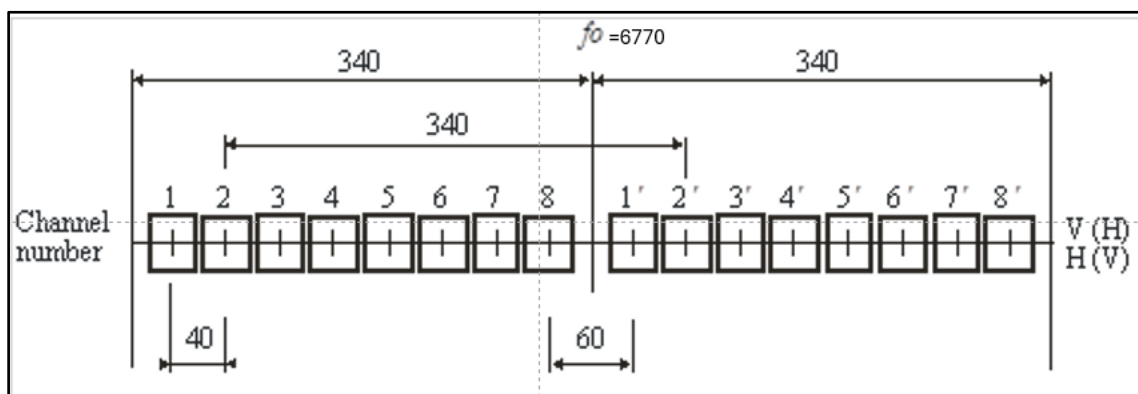
**Figure 1**

RF alternated channel arrangement for high capacity FWS  
(All frequencies in MHz)



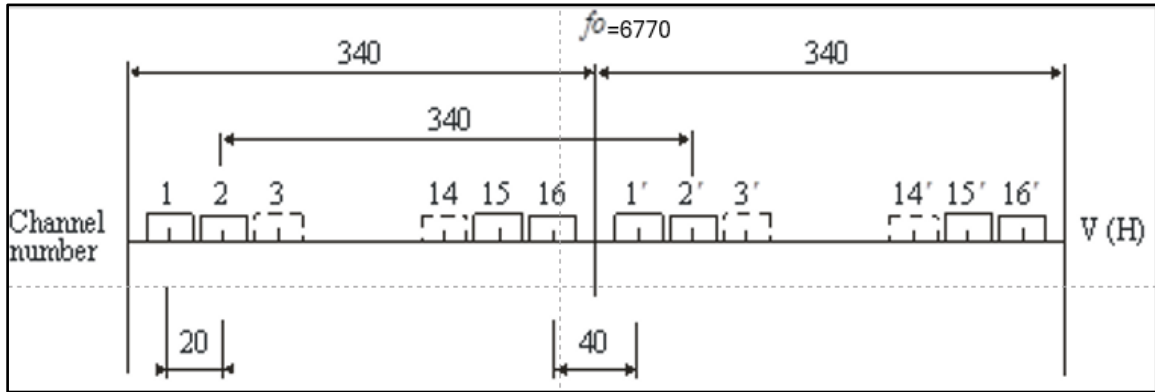
**Figure 2**

RF co-channel arrangement for high capacity FWS  
(All frequencies in MHz)



**Figure 3**

RF for medium capacity FWS  
(All frequencies in MHz)



**Table 1**

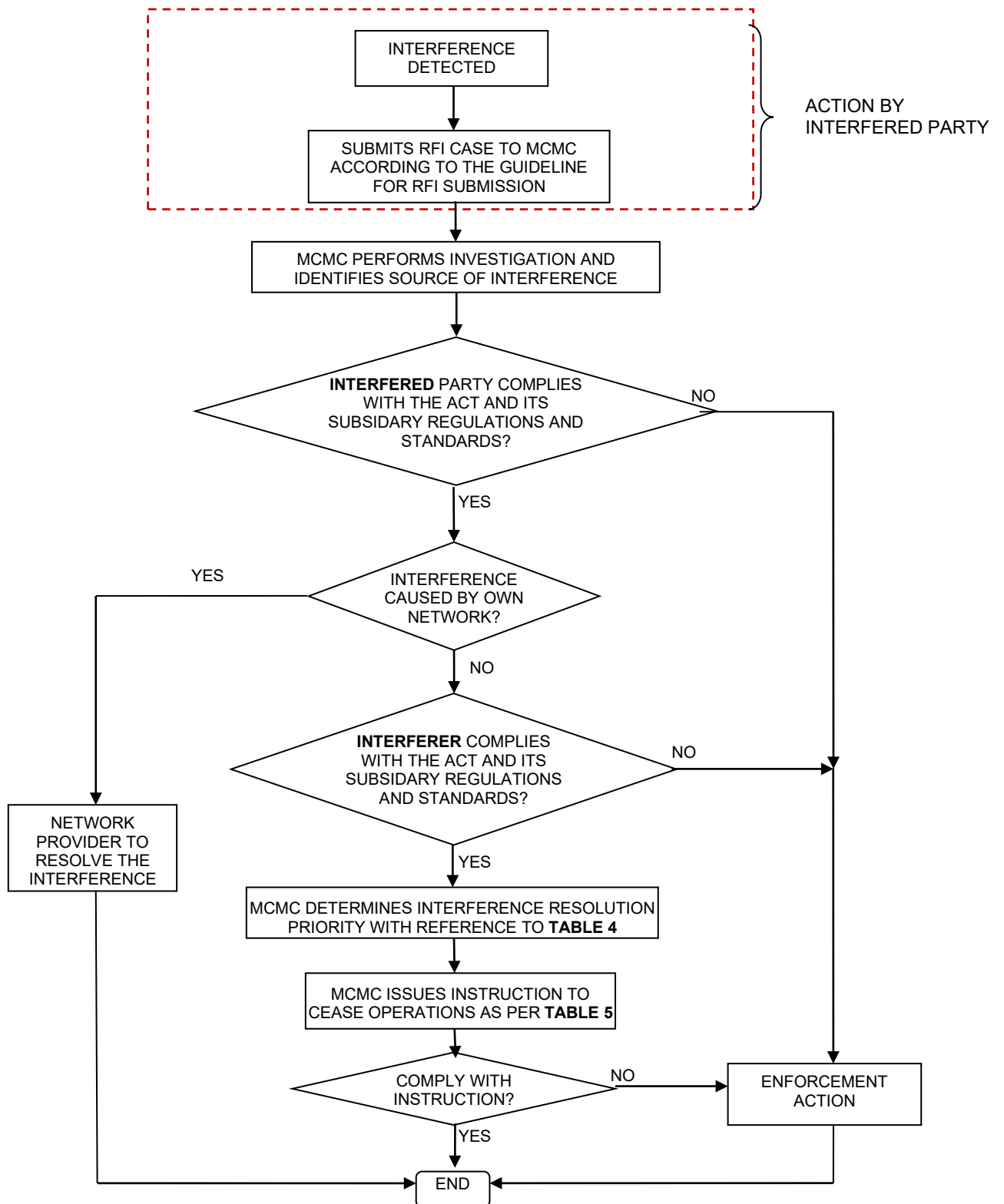
RF Carrier Centre Frequencies  
(bandwidth = 40 MHz)

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	6460.00	1'	6800.00
2	6500.00	2'	6840.00
3	6540.00	3'	6880.00
4	6580.00	4'	6920.00
5	6620.00	5'	6920.00
6	6660.00	6'	7000.00
7	6700.00	7'	7040.00
8	6740.00	8'	7080.00

**Table 2**  
 RF Carrier Centre Frequencies  
 (bandwidth = 20 MHz)

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	6440.00	1'	6780.00
2	6460.00	2'	6800.00
3	6480.00	3'	6820.00
4	6500.00	4'	6840.00
5	6520.00	5'	6860.00
6	6540.00	6'	6880.00
7	6560.00	7'	6900.00
8	6580.00	8'	6920.00
9	6600.00	9'	6940.00
10	6620.00	10'	6960.00
11	6640.00	11'	6980.00
12	6660.00	12'	7000.00
13	6680.00	13'	7020.00
14	6700.00	14'	7040.00
15	6720.00	15'	7060.00
16	6740.00	16'	7080.00

## APPENDIX B: INTERFERENCE RESOLUTION PROCESS



**TABLE 4: INTERFERENCE RESOLUTION PRIORITY**

	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 provided in the Spectrum Plan.
2	Assignment Type Priority	SA and AA have equal priority but are of higher priority than 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"> <li>i. safety or radionavigation service; and</li> <li>ii. based on the date of the AA - Priority is given to the earliest/first installation.</li> </ul>

**TABLE 5: 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 the Spectrum 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 or which degrades or obstructs, or repeatedly interrupts, a radiocommunications service operating in accordance with the Spectrum Regulations.	To cease* operation within 3 days or earlier as specified in the 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 submits an interference resolution or a mitigation plan and has completed the implementation of the mitigation plan to remove/avoid the interference to the satisfaction of MCMC.