

Standard Radio System Plan

**REQUIREMENTS FOR
INTERNATIONAL MOBILE
TELECOMMUNICATIONS SYSTEMS
OPERATING IN THE FREQUENCY BAND OF
4700 MHz TO 4800 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 developed pursuant to section 172 of the Act (“**Spectrum Plan**”), to provide information on the minimum technical, operational and regulatory requirements for the use of the **4700 MHz to 4800 MHz frequency band** (“**4700 MHz Frequency Band**”).
- 1.2 This SRSP does not attempt to establish any detailed equipment standards.
- 1.3 In the event of any inconsistency between this SRSP and the Act or any subsidiary legislation made under the Act (including any amendments thereto), the Act or such the subsidiary legislation, as applicable, shall prevail.

2 ABBREVIATIONS

3GPP	3rd Generation Partnership Project
AA	Apparatus Assignment
AAS	Advanced Antenna System
CA	Class Assignment
CPE	Customer premise equipment
EIRP	Effective Isotropic Radiated Power
FACSMAB	Frequency Assignment Committee of Singapore, Malaysia and Brunei Darussalam
HPUE	High power user equipment
IMT	International Mobile Telecommunications
ITU	International Telecommunication Union
ITU-R	ITU Radiocommunication Sector
JCC	Joint Committee on Communications between the Republic of Indonesia and Malaysia
JTC	Joint Technical Committee on Coordination and Assignment of Frequencies along Malaysia-Thailand Common Border
RFI	Radio Frequency Interference
SCS	Subcarrier Spacing
TDD	Time Division Duplex
Trilateral	Trilateral Coordination Meeting between the Republic of Indonesia, Malaysia and Singapore
TRP	Total Radiated Power

3 INTENT

- 3.1 This SRSP is established to ensure the efficient utilisation of spectrum for mobile service in Malaysia with minimal service disruption and radio frequency interference among the assignment holders, and between different services and systems, as applicable.
- 3.2 This SRSP states the requirements for the utilisation of the 4700 MHz Frequency Band for the implementation of IMT systems for the designated purpose specified in **paragraph 3.3** below. Unless otherwise specified, the term “IMT systems” in this SRSP refers to the IMT-2020 system, as set out in the applicable ITU framework.
- 3.3 The 4700 MHz Frequency Band is designated for the implementation of IMT systems for private networks or non-public networks, including enterprise and industry-specific applications, for deployment and operation within localised or geographically confined areas.

4 GENERAL REQUIREMENTS

- 4.1 The use of the 4700 MHz Frequency Band shall be limited to the implementation of IMT systems and shall be in accordance with the designated purpose specified in **paragraph 3.3** above. The use of the 4700 MHz Frequency Band for the deployment and provision of public IMT services is strictly prohibited.
- 4.2 The technical characteristics of equipment used for the implementation of IMT systems in the 4700 MHz Frequency Band (“**Equipment**”) shall conform with all applicable Malaysian standards, including this SRSP, and relevant international standards, including ITU Radio Regulations, as agreed and adopted by Malaysia (collectively referred to as the “**Applicable Standards**”).

4.3 The allocation and requirements for the 4700 MHz Frequency Band, and the provisions set out in this SRSP are subject to review, modification, or revision by MCMC from time to time, where necessary, to reflect evolving developments, applicable regulatory requirements, and policy directions in relation to the use of the 4700 MHz Frequency Band.

5 FREQUENCY ARRANGEMENT

5.1 The allocation of radiocommunication services within the 4700 MHz Frequency Band, including the relevant details, is provided in the Spectrum Plan.

5.2 The frequency arrangement applicable to the implementation of IMT systems in the 4700 MHz Frequency Band shall be as specified in **Table 1** below, with further details provided in **Appendix A** of this SRSP:

Table 1: Frequency arrangement of the 4700 MHz Frequency Band

Duplex Mode	Uplink Frequency Band (Base Station Receives, User Equipment Transmits)	Downlink Frequency Band (Base Station Transmits, User Equipment Receives)
TDD	4700 MHz to 4800 MHz	

6 TECHNICAL REQUIREMENTS

6.1 The technical parameters applicable to the **base stations** of IMT systems operating in the 4700 MHz Frequency Band shall be as follows:

6.1.1 the maximum in-block radiated power shall not exceed the limits specified in **Table 2** below:

Table 2: IMT base station maximum in-block radiated power

Base Station Category	Maximum In-Block Radiated Power
Non-AAS (EIRP)	68 dBm per 5 MHz per antenna
AAS (TRP)	47 dBm per 5 MHz per cell (For multi-sector base station, the maximum radiated power limit applies separately to each individual sector)

- 6.1.2 operation at levels exceeding the parameters specified in **paragraph 6.1.1** above is not permitted. An application to operate beyond such parameters shall be submitted to MCMC and shall be accompanied by technical justification(s), including relevant technical studies or analyses demonstrating that such operation will not result in interference to other systems or services. Such an application shall be subject to assessment and approval by MCMC; and
- 6.1.3 the limits for unwanted emissions, including out-of-band emissions and spurious emissions, shall be in accordance with the applicable requirements specified in **3GPP TS 38.104**.
- 6.2 The technical parameters applicable to the **user equipment** of IMT systems operating in the 4700 MHz Frequency Band shall be as follows:
- 6.2.1 the maximum output power for any channel bandwidth shall not exceed the limits specified in **Table 3** below:

Table 3: IMT user equipment maximum output power

Maximum Output Power*	Reference to 3GPP TS 38.101-1	User Equipment Category
23 dBm	Power class 3	Handheld or mobile user equipment
26 dBm	Power class 2	HPUE (fixed-type devices such as CPE, and other portable or nomadic form factors)
29 dBm	Power class 1.5	

Notes: *Tolerance of +2 dB

- 6.2.2 the limits for unwanted emissions, including out-of-band emissions and spurious emissions, shall be in accordance with the applicable requirements specified in **3GPP TS 38.101-1**.
- 6.3 Notwithstanding the technical parameters specified in this SRSP, MCMC may impose more stringent technical requirements on IMT systems operating in the 4700 MHz Frequency Band, to ensure compatibility and coexistence with other services or systems, and to mitigate any potential interference.
- 6.4 Any costs incurred for compliance with the technical requirements, including any system modifications or adjustments required pursuant to **paragraph 6.3** above, shall be fully borne by the assignment holder.

7 OPERATIONAL AND DEPLOYMENT REQUIREMENTS

- 7.1 In accordance with the designated purpose specified in **paragraph 3.3** above, the operation and deployment of IMT systems in the 4700 MHz Frequency Band shall be limited to geographically defined areas and/or local-area network connectivity, as applicable. The deployment or provision of nationwide IMT networks in the 4700 MHz Frequency Band shall not be permitted.

- 7.2 The assignment holder shall ensure that its apparatus operates strictly within the assigned frequency band(s) and in full compliance with the applicable technical requirements. Where the assignment holder requires a guard band, such guard band shall be implemented within the assigned frequency band(s).
- 7.3 The deployment and operation of IMT systems in the 4700 MHz Frequency Band shall not cause interference, at all material times, to other services or systems operating in the same frequency band and/or in the adjacent frequency band(s). Accordingly, such deployment and operation shall ensure effective coexistence and compatibility with other services or systems, including but not limited to the following measures:
- 7.3.1 implementation of appropriate interference mitigation and control techniques, including but not limited to antenna discrimination, antenna tilt, polarisation, frequency discrimination, shielding or blocking, site selection, power control, Physical Cell Identity (PCI) or Pseudo-Noise code planning, and filter installation; and
- 7.3.2 other measures and solutions based on industry best practices, relevant technical guidelines, as well as applicable requirements and recommendations referenced in this SRSP.
- 7.4 In addition to **paragraph 7.3** above, IMT systems operating in the 4700 MHz Frequency Band shall ensure effective coexistence among different systems or services operating in the same frequency band, including through the adoption of the following measures:
- 7.4.1 where required, coordination among the assignment holders in the 4700 MHz Frequency Band shall be undertaken, including the alignment of TDD synchronisation configurations;

- 7.4.2 where a proposed deployment may affect other systems or services operating in the same frequency band, MCMC may require the applicant for AA(s) in the 4700 MHz Frequency Band to undertake coordination with the affected assignment holder(s);
- 7.4.3 such coordination may include the conduct of appropriate technical studies or analyses, the exchange of relevant technical and operational information, and the identification of necessary mitigation measures to ensure coexistence between different services or systems. Where required by MCMC, the relevant parties shall provide details of such coordination, including the outcome of any studies or any agreements reached; and
- 7.4.4 in the event that successful coordination cannot be achieved, MCMC may specify the applicable technical parameters and coordination requirements to be implemented, as appropriate.
- 7.5 In addition to **paragraph 7.3** above, IMT systems operating in the 4700 MHz Frequency Band shall ensure effective coexistence and compatibility with other services or systems operating in the adjacent frequency band(s), including through the adoption of the following measures:
- 7.5.1 IMT base station operating in the 4700 MHz Frequency Band shall be equipped with appropriate filtering mechanisms, as applicable, to ensure compliance with the technical requirements and to mitigate interference to other services or systems; and
- 7.5.2 where required, the assignment holder shall undertake coordination with other assignment holder(s) operating in the adjacent frequency band(s) to mitigate potential interference. For the purposes of such coordination, the coordination requirements set out in **paragraphs 7.4.3** and **7.4.4** above shall apply accordingly.

- 7.6 Notwithstanding the requirements specified in this SRSP, MCMC may impose additional operational and deployment requirements on IMT systems operating in the 4700 MHz Frequency Band, to ensure compatibility and coexistence with other services or systems, and to mitigate any potential interference.
- 7.7 Any costs incurred in respect of the implementation of coexistence, compatibility and coordination measures, including any required system modifications or adjustments, shall be fully borne by the assignment holder.

8 PRINCIPLES OF ASSIGNMENT

- 8.1 Authorisation to use the 4700 MHz Frequency Band for the implementation of IMT systems shall be subject to the following:
- 8.1.1 by way of AA for the base stations; and
 - 8.1.2 by way of CA for user equipment, which shall comply with the applicable CA issued by MCMC pursuant to section 169 of the Act, as in force at the time of issuance.
- 8.2 Eligible persons who may apply for assignment(s) in the 4700 MHz Frequency Band are as follows:
- 8.2.1 a company incorporated in Malaysia under the relevant laws of Malaysia, or a public authority or agency of the Government of Malaysia or of any State, intending to utilise the 4700 MHz Frequency Band for the operation of its private network or for its own use, in accordance with the designated purpose as specified in **paragraph 3.3** above; or

- 8.2.2 a valid Network Facilities Provider (“**NFP**”) and/or Network Service Provider (“**NSP**”) licence holder, intending to deploy and provide IMT services in the 4700 MHz Frequency Band, in accordance with the designated purpose as describe in **paragraph 3.3** above.
- 8.3 Notwithstanding **paragraph 8.2.2** above, existing assignment holders of frequency bands designated for IMT-Advanced and IMT-2020 systems that are used for the deployment and provision of public network services, are not eligible to apply for an assignment in the 4700 MHz Frequency Band.
- 8.4 Applicants for AA are required to submit the following to MCMC:
- 8.4.1 duly completed AA application using the prescribed form, in accordance with the Act, the Communications and Multimedia (Spectrum) Regulations 2000 (“**Spectrum Regulations**”), and any applicable instruments and guidelines issued by MCMC, including those issued pursuant to paragraph 21(2)(b) of the Spectrum Regulations, as may be amended from time to time;
- 8.4.2 the applicable application fee and AA fees, as required under the Spectrum Regulations;
- 8.4.3 the relevant information and document, as outlined in **Appendix B** of this SRSP; and
- 8.4.4 any other documents and/or information as may be requested by MCMC.
- 8.5 The issuance of AA shall be subject to the applicant’s complete submission of all required documents and payment of the applicable fees, as well as MCMC’s evaluation and consideration, including the matters specified in paragraph 21(4) of the Spectrum Regulations.

- 8.6 Assignments shall be made on a first-come, first-served basis.
- 8.7 For stations intended to be deployed in areas near the common border of Malaysia, the issuance of AA shall be subject to successful coordination with the relevant administrations of the neighbouring countries, in accordance with applicable cross-border coordination requirements.
- 8.8 The AA shall be subject to all conditions specified under regulations 9, 10 and 22 of the Spectrum Regulations as well as any additional conditions as may be imposed by MCMC from time to time.
- 8.9 The assignment holder may be required to submit to MCMC reports relating to the utilisation of the 4700 MHz Frequency Band for the implementation of IMT systems, in such form and manner as may be specified by MCMC.

9 EQUIPMENT AND LABELLING REQUIREMENTS

- 9.1 All Equipment shall be duly certified in accordance with the Communications and Multimedia (Technical Standards) Regulations 2000, prior to installation, deployment, or use.
- 9.2 All Equipment installations shall comply with the safety requirements as specified in the Applicable Standards.
- 9.3 The assignment holders shall affix or provide a label that clearly indicates the assignment holder's ownership ("**Label**") on the apparatus such as cables terminating with antenna, remote radio unit, equipment rack and any other relevant apparatus ("**Apparatus**") to facilitate interference investigation and/or audit performed by MCMC. The equipment rack for the Apparatus shall be specifically labelled with the assignment holder's name and the operating frequencies.

10 INTERFERENCE MANAGEMENT AND RESOLUTION

- 10.1 The use of the 4700 MHz Frequency Band for the implementation of IMT systems shall not cause interference to other services or systems operating in the same frequency band and/or the adjacent frequency band(s).
- 10.2 In the event of interference occurrence, the assignment holder shall, at its own cost, promptly undertake and implement all necessary measures to eliminate or mitigate such interference to the satisfaction of MCMC, including but not limited to the following:
- 10.2.1 undertake coordination with the relevant party(ies), including assignment holder(s) operating in the same frequency band and/or adjacent frequency band(s), as well as the relevant operators of the neighbouring countries, as applicable;
 - 10.2.2 install appropriate filtering mechanisms, including external filters, and/or implement additional guard bands within the assigned frequency band(s);
 - 10.2.3 apply appropriate interference mitigation techniques, including but not limited to antenna discrimination, antenna tilt, antenna polarisation, frequency discrimination, shielding or blocking, site selection, and power control; and
 - 10.2.4 implement any other measures and solutions based on industry best practices, relevant technical guidelines, as well as applicable requirements and recommendations referenced in this SRSP.
- 10.3 In the event of any interference, MCMC shall be guided by the interference resolution process set out in **Appendix C** of this SRSP.

- 10.4 Notwithstanding the requirements specified in this SRSP, MCMC may, at its discretion, impose additional mitigation measures or requirements on IMT systems operating in the 4700 MHz Frequency Band to eliminate or resolve interference to other services or systems, including but not limited to system modifications, imposition of additional attenuation, reduction of bandwidth, adjustment of operating parameters, or compliance with specified implementation timelines.
- 10.5 Any costs incurred in respect of the implementation of interference mitigation measures, including those required pursuant to **paragraph 10.4** above, shall be fully borne by the assignment holder.

11 INTERNATIONAL COORDINATION

- 11.1 The use of the 4700 MHz Frequency Band for the implementation of IMT systems shall be subject to coordination with neighbouring countries within the applicable coordination zones. Such coordination requirements shall be based on agreements reached through the relevant bilateral and multilateral border coordination mechanism, including FACSMAB, JTC, JCC and Trilateral meetings.
- 11.2 The agreement for the 4700 MHz Frequency Band from one neighbouring country to another may differ subject to the requirements of the respective country.
- 11.3 In the event there is no agreement on the coordination zone, a zone within 50 km from the common border shall apply.
- 11.4 The coordination requirements, including band plans, coordination distances, parameters, and coordination procedures, between Malaysia and neighbouring countries may be reviewed and updated from time to time.

12 EFFECTIVE DATE

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

13 REVISION

13.1 MCMC may, from time to time and at its discretion, revise, vary, or revoke this SRSP.

13.2 Without limiting **paragraph 13.1** above, MCMC reserves the right, at its sole discretion, to review, modify, or revoke any requirements or information contained in this SRSP at any time, without prior notice. Additionally, MCMC reserves the right to amend or introduce new policies, requirements, or conditions as necessary to reflect evolving developments, applicable regulatory requirements and policy directions relating to the use of the 4700 MHz Frequency Band. Nothing in this SRSP shall be construed as limiting MCMC's powers and functions to impose, amend, or vary any requirements or conditions in relation to the use of the 4700 MHz Frequency Band.

14 REVOCATION

14.1 MCMC SRSP MS 4700 dated 2 July 2025 is hereby revoked.

15 REFERENCES

- i. Spectrum Plan: <https://www.mcmc.gov.my/en/spectrum/spectrum-management>)
- 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. 3GPP TS 38.104: Technical Specification Group Radio Access Network; NR; Base Station (BS) radio transmission and reception
- iv. 3GPP TS 38.101-1: Technical Specification Group Radio Access Network; NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone
- v. Decision (EU) 2019/235: Commission Implementing Decision (EU) 2019/235 of 24 January 2019 on amending Decision 2008/411/EC as regards an update of relevant technical conditions applicable to the 3400-3800 MHz frequency band
- vi. EC Decision 2014/276/EU: Commission Decision of 2 May 2014 on amending Decision 2008/411/EC on the harmonisation of the 3400-3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community
- vii. ECC Decision (11)06: Harmonised frequency arrangements and least restrictive technical conditions (LRTC) for mobile/fixed communications networks (MFCN) operating in the band 3400-3800 MHz
- viii. ECC Report 281: Analysis of the suitability of the regulatory technical conditions for 5G MFCN operation in the 3400-3800 MHz band

APPENDIX A: FREQUENCY ARRANGEMENT FOR IMT SYSTEMS IN THE 4700 MHz FREQUENCY BAND



Notes:

- 1) Uplink: Base station receives, user equipment transmits
- 2) Downlink: Base station transmits, user equipment receives

Figure A.1: Band plan of the 4700 MHz Frequency Band

Table A.1: Frequency arrangement details for the 4700 MHz Frequency Band

Mode	Uplink / Downlink Frequency Band	3GPP Band Plan	SCS (kHz)	Channel Bandwidth (MHz)
TDD	4700 MHz to 4800 MHz	n79	15	10, 20, 30, 40, 50
			30, 60	10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Notes: Any application for the use of bandwidth other than that specified above shall be submitted to MCMC and shall be accompanied by relevant details, including justification(s) and supporting studies or analyses, as appropriate. In any event, the maximum bandwidth shall not exceed 100 MHz.

APPENDIX B: ADDITIONAL INFORMATION AND DOCUMENTS FOR SUBMISSION OF AA APPLICATION

1. In addition to the requirements stipulated by MCMC in the prescribed AA application form and in accordance with subregulation 21(2) of the Spectrum Regulations, the applicant shall also submit the following information and documents to MCMC for the purpose of the AA application in the 4700 MHz Frequency Band:
 - a. Cover letter for the AA application to describe the purpose of the application, the type of vertical market or industries and the proposed use cases;
 - b. A soft copy of the most recent Certificate of Incorporation issued by the Companies Commission of Malaysia under the Companies Act 2016, duly certified as a true copy (CTC);
 - c. Authorisation letter issued by the applicant if the AA submission is made by the applicant's contractor, consultant or vendor;
 - d. A copy of the Identification Card (IC) of the individual submitting the application, who shall be an employee of the applicant and duly authorised to act on its behalf;
 - e. A copy of Type Approval or Special Approval (for trial, demonstration and experiment purposes) issued by SIRIM QAS International Sdn Bhd or MCMC;
 - f. Details of the intended coverage area (plotting on the map) and coverage simulation;

- g. Details of the network plan, network topology/configuration and operation of the deployment in accordance with the designated purpose as describe in **paragraph 3.3** above. In case of indoor usage, please provide the planned indoor use of base stations;
 - h. Technical specifications of radiocommunication equipment, including antenna and filter (includes emission mask specifications);
 - i. TDD synchronisation configuration and related transmission characteristics (including frame structure, slot format, and synchronisation source);
 - j. Detailed on the bandwidth requirements;
 - k. Description of interference mitigation techniques, where applicable; and
 - l. Reference documents, information and/or proof of engagement relating to the proposed provision of network services by the applicant, being a valid NFP and/or NSP licence holder, including details on the relevant end-user entity(ies) or organisation(s), the intended service use and arrangement, as well as the details on scope, location, and technical parameters of the proposed service.
2. In addition to the above, MCMC may, at any time, request the applicant to provide any further information and/or documents deemed necessary within the period specified in the request.

APPENDIX C: INTERFERENCE RESOLUTION PROCESS

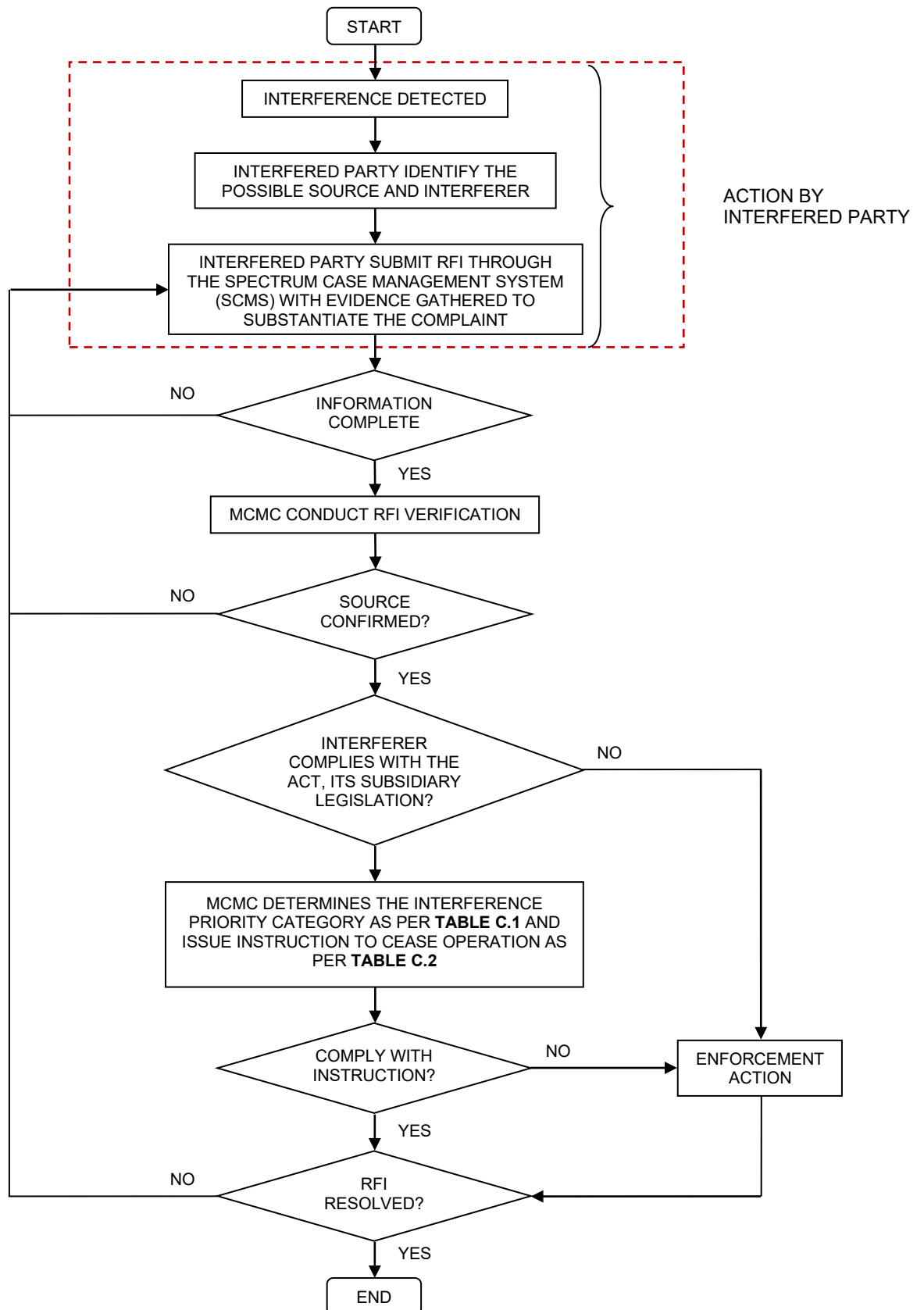


Table C.1: Interference resolution priority

No.	Types 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	Spectrum assignment 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"> i. safety or radionavigation service; and ii. based on the date of the assignment.

Table C.2: Interference resolution timeline

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 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 notice issued by MCMC if interference cannot be resolved.

No.	Types of Interference	Description	Resolution Timeline
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.

*Notes: *Resumption of operation of the apparatus is not allowed unless the assignment holder submits interference resolution or mitigation plan and has completed the implementation of the mitigation plan to the satisfaction of MCMC.*