

Guidelines For Managing Spectrum Interference

TABLE OF CONTENTS

1. Definitions	3
2. Legal Background.....	4
3. Purpose Of The Document	5
4. Regulatory Framework	5
5. Interference Classification, Types, Sources And Causes.....	5
6. Harmful Interference Criteria And Interference Limits	9
7. Submission of Interference Complaints To CRA.....	10
8. Requirements From Licensee For Reporting Harmfull Interference Complaints	11
9. Internal Coordination For Managing Interference Cases	12
10. Procedures For Managing Interference Compliants	13
11. Compliance For Resolution	14
12. Spillover / Cross Border Interference Cases	16
Annexure I: Harmful Interference Complaint Form.....	17
Annexure II: Interference Investigation and Resolution Process Flowchart.....	18

1. DEFINITIONS

The definitions of the terms used in this document shall be consistent with those as set out in the Telecommunications Law Promulgated by Law No. (34) of 2006 as amended by Law No. (17) of 2017, Executive By-Law of 2009 and their amendments or substitution.

Any terms that are not defined in the Telecommunications Law or Executive By-Law shall be defined in accordance with the definitions applied by the International Telecommunications Union (ITU) or in the absence of same, the international best practices. For the purposes of this framework document, the following terms and words shall have the meanings ascribed to them below:

The Law:	Telecommunications Law Promulgated by Law No. (34) of 2006 as amended by Law No. (17) of 2017.
Executive By-Law:	No. (1) of 2009 on the promulgation of the Executive By-Law for the Telecommunications Law.
Emiri Decree:	Emiri Decree No. (42) of 2014 – Establishment of the Communications Regulatory Authority (CRA).
Applicable Regulatory Framework:	Includes but is not limited to the Telecommunications Law No (34) of 2006 as amended by Law No. (17) of 2017 and its Executive By-Law of 2009 and any other rules, regulations, decisions, orders, policies, guidelines, instructions, or notices issued by the CRA, as well as relevant laws of the State of Qatar and international treaties that the State of Qatar has subscribed to.
License:	An Individual or a Class License issued pursuant to Chapter 3 of The Telecommunications Law or a Radio Spectrum License in accordance with the provisions of Chapter 4 of The Telecommunications Law.
Spectrum Licensee:	A person, an individual or entity, who holds the License pursuant to the provisions of the Law or Executive By-Law.
Complainant:	Licensee or an Authorized User, who submits the interference complaint to the CRA.
Authorized User:	An individual or entity possessing a valid license of the spectrum from CRA, who has been assigned a specific frequency or a band of frequencies and operating within its licensed terms and conditions.
Unauthorized user:	An individual or entity, who is not possessing a valid license of the spectrum from CRA or who is not authorized for the specific frequency in use.

Illegal User:	Any individual or entity, using the wireless/ radio equipment, transmitting on a frequency without any authorization or License.
Station:	One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, carrying on a radiocommunication service.
Inspector:	A person authorized by the CRA, vested with powers of inspection and judicial seizure in accordance with the Law.

2. LEGAL BACKGROUND

The Communications Regulatory Authority (CRA), established under Emiri Decree No. (42) of 2014, is mandated to ensure optimal and most efficient use of the spectrum, to monitor the implementation of radio frequencies and to manage interference issues. In this regard, the Law also establishes the provisions for enforcement actions in case of non-compliance/ violations of the provisions of the law, its Executive By-Law and regulations, decisions and orders relating to it, or any of the conditions of the license.

- a) **Article (16) of the Law, Article (31) of the Executive By-Law and Article 14 of the Emiri Decree** mandates the CRA to take necessary measures and procedures to monitor the use of radio frequency, to monitor and verify the compliance by licensees with the terms and conditions of their Licenses and detect the use of unlicensed radio frequency.
- b) **Article (24) and Article (44) of the Executive By-Law** mandates the CRA to mediate, resolve and manage the interference disputes. In resolving radio spectrum interference disputes, the CRA may assign its professional staff or technical experts to mediate the dispute, submit a report on possible ways to resolve the dispute, submit the dispute for arbitration in accordance with the procedure of the ITU, and to issue an order to resolve the dispute.
- c) **Article (63) of the Law** gives judicial search/ inspection and seizure powers to CRA, so that its authorized inspectors shall seize and prove crimes committed in violation of the rules of the Law, can enter premises, have access to records and documents and inspect equipment and telecommunications systems and request data or clarifications as they deem necessary.
- d) **Articles (64) to (72) of the Law** establishes the provisions for managing cases of non-compliance or violations of Applicable Regulatory Framework, by taking appropriate enforcement actions, including issuing instructions/ orders leading to escalated enforcement for initiating criminal proceedings, public prosecution and penalties.

3. PURPOSE OF THE DOCUMENT

This document covers the principles and mechanism adopted by the CRA to efficiently manage harmful interference complaints, submitted by the authorized frequency users / Spectrum Licensees, and to ensure that compliance resources are effectively and efficiently utilized. The objectives of this document include:

- a) To adopt efficient approach to respond, evaluate, investigate the harmful interference complaints and undertake appropriate compliance/ enforcement actions to resolve the issue.
- b) To provide guidance to parties involved in an interference complaint, including licensees and any third party service providers, about how to respond to interference issues and amicably agree to timely and fair resolution to their interference dispute.
- c) To manage the harmful interference cases received from foreign Administrations/ ITU or caused by the source under the jurisdiction of foreign Administration, in coordination with concerned entities.

4. REGULATORY FRAMEWORK

- 4.1. Regulatory Framework includes, but is not limited to, the Telecommunications Law No (34) of 2006 as amended by Law No. (17) of 2017 and its Executive By-Law of 2009 and any other rules, regulations, decisions, orders, policies, guidelines, instructions, or notices issued by the CRA.
- 4.2. In the light of ITU Radio Regulations and Recommendation and in accordance with Regulatory Framework, the CRA ensures to specify various technical parameters and conditions to Licensees and establish radio equipment standards and regulations, in order to avoid or minimize the risk of interference between authorized frequency users. In this regard, Radio Spectrum Licensing [Guidelines](#), Type Approval [Policy](#), Type Approval [Guidelines](#) and the terms and conditions specified in the License issued by the CRA are the statutory instruments to regulate and to ensure effective and efficient use of spectrum, so that the radio communication services and devices are operated without risk of harmful interference to other licensed users.

5. INTERFERENCE CLASSIFICATION, TYPES, SOURCES AND CAUSES

Electromagnetic Interference (EMI), also called radio-frequency interference (RFI), is the effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radio-communication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.

5.1. Classification of Interference Based on its Impact

5.1.1. Interference impact can vary from being tolerable (without any performance degradation) to severe, resulting in partial degradation to complete loss of information. Interference has been classified by ITU Radio Regulations (RR 1.166 to RR.169) on the basis of their impact as:

- a) Permissible Interference - Observed or predicted interference which complies with quantitative interference and sharing criteria contained in ITU-R Regulations or Recommendations or in special agreements.
- b) Accepted Interference - Interference at a higher level than that defined as permissible interference and which has been agreed upon between two or more administrations without prejudice to other administrations.
- c) Harmful Interference - Interference which endangers the functioning of a radio-navigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radio communication service operating in accordance with Radio Regulations/ ITU Recommendations.

5.1.2. The terms permissible interference and accepted interference are used in the international coordination of frequency assignments between administrations. Whereas, harmful interference is the generic term for interference causing disturbance to an authorized radio service and allows appropriate interpretation on case-to-case basis in the light of relevant ITU-R recommendations and international standards like ETSI, 3GPP, etc.

5.2. Permitted or Acceptable Interference on Frequency Sharing/Non-Interference Basis

5.2.1. Qatar National Frequency Allocation Plan (NFAP) permits multiple radio communication services in certain frequency bands. Radio services are generally afforded protection from “harmful interference” on either a primary or secondary basis depending upon their status in the QNFAT (National Frequency Allocation Table):

- “Primary” users are protected against harmful interference from all other users
- “Secondary” users must not cause harmful interference to primary users and must accept interference from Primary users.

5.2.2. For the radio communication services having the same priority status in the National Frequency Allocation Table, the CRA shall determine the order of priority while making the assignment.

- 5.2.3. Radio communication stations/ users of Secondary service (shared use basis) or Non-interference (Non-protected) basis, shall neither cause interference to; nor claim protection from Authorized Users of Primary services, to which frequencies are already assigned or to which frequencies may be assigned later. Secondary service users can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned later.
- 5.2.4. Class Licenses, issued by the CRA, enables operation of the approved class of devices within frequency range specified in the Class License without having to apply for a separate individual license. The equipment must, however, be in compliance with the terms and conditions of the Class License and must be operated within the authorized frequency bands. These devices are not expected to cause any interference to other users and must tolerate any interference caused by other radio-communication services, electrical or electronic equipment.

5.3. Internal / External Sources of Interference

- 5.3.1. Interference can be generated from various intentional/ unintentional radiators or electrical devices. Based on the originating source, Interference is divided into two categories namely:
- External Interference - Interference due to unwanted emissions emanating from unlicensed or licensed equipment that are not part of the licensed radio station experiencing interference.
 - Internal interference - Interference due to unwanted emissions emanating from within the licensee's own network (radio station/ equipment/ system) or due to other factors from within the network.
- 5.3.2. CRA is not mandated to handle any internal interference, furthermore, protection from interference due to the one's own defective/ malfunctioning equipment or inappropriate configuration of radio network is the responsibility and obligation of the authorized user/ licensee itself.
- 5.3.3. Radio Equipment is also susceptible to common forms of man-made noise or electrical interference. Interference to such devices should be reported to and dealt with by the licensee. The CRA will not under normal circumstances entertain such complaints. The two fundamental types of interference are due to electrical noise or radio noise:
- a) Radio noise: Noises as mentioned in the most recent version of ITU Recommendation P.372.
 - b) Electrical noise: Noise generated from Power lines or electrical equipment.

5.4. Causes of Harmful Interference

There can be number of reasons for interference originating from various kind of external sources, which may prevent reception altogether and cause temporary loss or degradation of the quality of the signal.

- Interference may originate from authorized emissions causing unintended results such as spurious emissions or caused by a faulty communication system, or radio equipment operating beyond the technical specifications.
- Interference may result from a failure of licensees to comply with license conditions, including the location and or the area of wireless operation.
- In some cases, interference may also result from unusual enhanced propagation due to ducting, a phenomenon evident in the region due to varying climatic conditions, which can allow signals to propagate to very long distances and can cause harmful interference.
- Interference can also occur inadvertently due to the lack of information about the mandated regulatory requirements for operation of certain equipment.
- In rare cases, the interference may be due to intentional operation of radio equipment on unauthorized frequency.

5.5. Unauthorized / Unlicensed Frequency Users

- 5.5.1. As per QNFAP, there is no unlicensed frequency band in the state of Qatar. Operation of all wireless equipment needs the radio spectrum license or frequency authorization, in accordance with Article (15) of the Law. Moreover, use of any wireless device based on the assumption that it is permitted in any other country does not imply its usage in the state of Qatar, unless specified by the CRA.
- 5.5.2. Some of the wireless devices like DECT, wireless microphones, RFID are included in the Class License for Short Range Devices (SRDs) issued by the CRA, where individual license is not required, however there are limitations specified in terms of power and frequency range, which must be complied by the users of such devices.
- 5.5.3. CRA conducts regular spectrum monitoring utilizing all its resources effectively, monitor the use of spectrum for verification of compliance by the licensees as well as to detect the unauthorized/ unlicensed use of frequency, which will reduce the risk of interference to the authorized users of spectrum.

5.6. EMC and Interference Susceptibility

- 5.6.1. The Type Approval Policy and Type Approval Guidelines for Radio Equipment and Telecommunications Terminal Equipment (“RTTE”) issued by the CRA, safeguards the Electromagnetic Compatibility (EMC) regime aimed to reduce the risks of electrical interference.
- 5.6.2. The level of interference caused by out-of-band emissions depends on the interference susceptibility of the receiver. Therefore, a receiver should have a minimum level of performance and the Licensees shall comply with the standards of spurious and out of band emissions as set out in Appendix 3 of Radio Regulations.
- 5.6.3. The technical parameters authorized by the CRA do not account for any interference susceptibility of the Radio Equipment. However, as the equipment selection is the prerogative of the Licensee, the CRA recommends the Licensee to evaluate the equipment parameters including interference susceptibility, sensitivity, intermodulation immunity, and spurious/ blocking immunity, in accordance with relevant ITU-R Recommendations.

6. HARMFUL INTERFERENCE CRITERIA AND INTERFERENCE LIMITS

- 6.1. The CRA will consider the following provisions as harmful interference (as defined by ITU and stipulated in 5.1.1):
 - a) In the case of a radio-navigation service (like GPS) or a safety service (police, fire, distress beacons, etc.), harmful interference is anything that “endangers” its functioning. Recommendation ITU-R SM.1535 elaborates the potential interference in safety services, mitigation techniques and permissible interference levels for protection of these services
 - b) In the case of any other licensed radio service, harmful interference is whatever “seriously degrades, obstructs, or repeatedly interrupts” the service. This indicates the interference levels to be characterized for the claims of harmful interference.
- 6.2. Quantification of interference thresholds for the claim of harmful interference by the licensee, seeking protection against harmful interference from other systems, will require a case-by-case interpretation of the complaints in the light of relevant standards/ ITU-R recommendations. A single universal definition or criteria of harmful interference suitable for all applications and technologies is unlikely to be realizable, as an interference level which causes problems for one technology may be inconsequential for another.

- 6.3. Further, for the evaluation of interference harm, receiver sensitivity and C/I ratios recommended for the optimum performance of a radio service are the vital parameters to be considered for comparing with the interfering signal levels. The receiver sensitivity varies for different radio communication services and are defined by relevant applicable international standards, directives and recommendations like 3GPP, ETSI, ITU, EC.
- 6.4. Interference Protection ratio is defined and specified by ITU-R for various radio services, which is the minimum value of the signal-to-interference ratio, such that a specified reception quality of the wanted signal is achieved at the receiver output. The means and criteria for interference protection vary for different radio services, where limits on transmitted in-band power, out-of-band emissions and signal strength within a geographic area are the most common elements.
- 6.5. In case of harmful interference from neighboring countries, the thresholds for harmful interference criteria or spillover limits for specific radio services are usually specified and agreed in the bilateral/ mutual coordination agreements between/ among GCC countries. Other international coordination agreements/ ITU-R Recommendations can also be studied and considered, in absence of bilateral / mutual agreements for any specific service.

7. SUBMISSION OF INTERFERENCE COMPLAINTS TO CRA

- 7.1. Spectrum licensees/ authorized users, eligible for protection from harmful interference, having valid license and operating authorized radio services in accordance with their license conditions, can launch harmful interference complaint to the CRA.
- 7.2. Harmful interference complaints can be submitted on the prescribed format “**Harmful Interference Complaint Form**” available on CRA website (<https://cra.gov.qa/en/document/harmful-interference-complaint-form>), which guides the complainant to provide mandatory information and relevant data for submission of complaint.
- 7.3. The complainant can submit this form to Spectrum Management Department electronically through Email (interference@cra.gov.qa) or Fax: +974 44830630, along with additional relevant information that can assist the CRA to identify the interference source e.g., spectrum plots, affected QoS trends, timings, audio recordings etc.

8. REQUIREMENTS FROM LICENSEE FOR REPORTING HARMFUL INTERFERENCE COMPLAINTS

8.1. The Licensee shall take all reasonable steps to ensure that interference is not from any internal sources, prior to lodging an interference complaint with the CRA. The licensee obligations in this regard are as follows:

- a) The operation of their equipment meets all the conditions of their license.
- b) The frequency license/ authorization under which the frequency(ies) is suffering harmful interference shall be valid on the date of submitting the interference complaint.
- c) The interference is not produced by the infrastructure or equipment which is under the licensee's control or due to malfunctioning equipment within their own systems e.g. due to faulty antenna, poor cable termination, insufficient filtering, etc.
- d) Affected receiver meets the minimum level of receiver performance.
- e) Service providers should also ensure optimized configuration and operation of their network resources, while reporting the interference to be the cause of poor coverage/ quality or degraded services.

8.2. The Licensee shall, at all times, comply with the terms and conditions stated in the license conditions. The Licensees are responsible to ensure that equipment is deployed, operated and maintained to meet the regulations and the terms of the license and to prevent undue interference. This includes limitations on the location of operation, if specified in the license.

8.3. The licensee should endeavor to avoid these common causes of interference:

- a) Electrical Interference: It is a common cause of interference and proper shielding, earthing can safeguard against such interference.
- b) Spurious and Out of band emissions: Appendix 3 of Radio Regulations sets the conditions for the spurious and out of band emissions.
- c) Transmitter Tolerance: Appendix 2 of Radio Regulations sets the tolerance or the deviation allowed for the transmitters from the center frequencies. All transmitters shall conform to these tolerance values.
- d) Authorized Radiated Power: It is important for all users to conform to the authorized radiated power as exceeding the specified power will cause interference to other systems.

- e) Antenna Location/Patterns and Orientation: The CRA performs the sharing analysis while assigning frequencies based on the antenna location/ height, radiation patterns and orientation. Any change in the specified parameters can cause interference to other systems.
- f) Frequency assigned Area licensees need to carefully plan their deployment to minimize the risk of interference, as there may be potential for the interference into and from licensees operating on same channels in the adjacent/ nearby areas.

8.4. There is no radio environment with the absolute absence of potentially interfering signals and it might not always be possible to eliminate interference completely. Hence, the licensee may have to adopt optimized techniques and implement necessary measures to tolerate the minimum acceptable level of interference.

8.5. The licensee shall use good site engineering techniques such as those provided in ETSI ETR 053, and/ or ensure adequate separation distances to minimize the risk of interference.

8.6. The licensee shall also comply at all times, with relevant international/ regional cross-border coordination agreements.

9. INTERNAL COORDINATION FOR MANAGING INTERFERENCE CASES

9.1. Spectrum Monitoring Section in Spectrum Management Department of the CRA is the primary focal unit for managing and responding to the harmful interference complaints.

9.2. In order to manage the interference complaints efficiently, the CRA utilizes all its monitoring and compliance resources in coordinated and effective manner. Spectrum Monitoring Section investigates the harmful interference cases for verification, determination and identification of interference source and further coordinates with following sections for facilitating the mitigation and resolution of the interference issues:

- Spectrum Planning – To verify the validity and technical conditions of the Spectrum license/authorization, and to advise on matters related to frequency sharing between licensed users.
- Spectrum Licensing – To facilitate for matters related to type approval of radio equipment and Technical Inspection.
- Legal Unit – To advise/facilitate legal actions against non-compliant users violating the Regulatory Framework.

10. PROCEDURES FOR MANAGING INTERFERENCE COMPLAINTS

The following comprehensive set of processes (flow chart at Annex-II) are the key elements, to efficiently manage and respond to interference complaints, by deploying its valuable resources effectively:

10.1. Acceptance of Complaints for Investigation

The interference complaints for investigation are assessed each on its merits, based on the information provided by the complainant before accepting the complaint. Factors considered to accept a complaint for further investigation include whether:

- a) the complainant has ensured compliance with the requirements mentioned in Sections 6 and 7, for submission of harmful interference complaints;
- b) necessary information has been provided, in support of the complaint for further investigations.

10.2. Acknowledgement of Complaints for Investigation

Interference complaints received and accepted will be acknowledged electronically through email or through official letter, within 3 working days. If the evaluation of the complaint requires additional information, the complainant will be informed to provide relevant details to facilitate further investigations.

10.3. Interference Complaints Priority

10.3.1. While all the received and accepted harmful interference complaints are carefully considered and managed in order of receipts, the CRA sets prioritization for the complaints to be investigated, based on the risk of harm and seriousness of the interference on the affected radio service, which might need the highest priority and requires immediate actions by the CRA for adequate and timely resolution.

10.3.2. In this regard, the below table summarizes the priorities of interference complaints, to be investigated by the CRA:

Priority	Interference complainants / services
Highly Critical	Public safety systems like aircraft flight safety, radio-navigational system frequencies, GMDSS (Global Maritime Distress and Safety System), EPIRB (Emergency Position Indicating Radio Beacon), International disaster and safety systems, security, fire brigade, civil defense, search and rescue systems.

Critical	Strategic Radio communications/ services
High	All other services

10.4. Cooperation and Coordination with the Complainant

- 10.4.1. After acknowledging the interference complaints, the complainant will be informed about the progress of investigation, in due course of time.
- 10.4.2. The complainant will also be expected to provide all the required information for the interference, in timely and efficient manner and extend all possible assistance to Spectrum Monitoring staff for field surveys in the affected areas of their jurisdiction, as well as to facilitate for joint surveys which may include the licensee to switch-off the radio station/ service temporarily (at coordinated time) in order to thoroughly investigate the interference.

10.5. Interference Investigations:

- 10.5.1. The CRA has established state-of-the-art Automated Spectrum Monitoring System in the state of Qatar. The valuable technical resources are employed effectively to perform investigation including field monitoring surveys, technical measurements, and analysis in order to verify the existence and locate the source of external interference.
- 10.5.2. Interference investigation involves measurement and analysis of affected frequency(ies), adopting effective monitoring techniques, utilizing appropriate monitoring tools, collecting and analysis of technical data for verification of interference, followed by the identification of its source.

Based on the investigation, an Interference Investigation Report, specifying the existence, cause and source of harmful interference, will be considered by the CRA, to take further appropriate actions in order to mitigate/ resolve the interference. The report however, may not be shared with the complainant, as per decision by the CRA.

11.COMPLIANCE FOR RESOLUTION

- 11.1. After completing the interference investigation, resulting in identification of the source of interference, CRA will take necessary steps to mitigate and resolve the interference. In this regard, the CRA may, carryout physical Inspection through its authorized Inspector for the identified source of emission causing interference, issue a decision, determination or order as appropriate to the affecting party to resolve the issue. The CRA may also direct the licensee to take such actions as may be necessary to resolve harmful interference.

- 11.2. If in the opinion of CRA, a breach in the terms and conditions of the license has occurred or the use of the radio equipment is causing or contributing to undue interference, a notice issued by the CRA to the licensee, may require the Radio Equipment, or any part of the Radio Equipment, to be modified or restricted in use, or temporarily or permanently removed from use immediately or on expiry of a specified period.
- 11.3. By the user of radio equipment identified by the CRA to be the source of interference, upon informing and issuance of warning by the Inspector. However, if necessary, legal actions will be taken, including the issuance of Notice of Violation or Orders, which upon failure to comply with, will result in the CRA taking escalated enforcement/ legal action against the user, in accordance with the Applicable Regulatory Framework including issuance of Notice of Non-compliance or initiating criminal proceedings in accordance with Articles (66), (67), (68) and (70) of the Telecommunications Law.
- 11.4. Without prejudice to any other enforcement powers of CRA or specific penalties set out in the Applicable Regulatory Framework, the CRA in accordance with Article (17) of the Law, may amend, suspend or revoke any Radio Spectrum License in case of repetition of the violations of the provisions of the law, its Executive By-Law and regulations, decisions and orders relating to it, or any of the conditions of the license or the misuse of licensed radio spectrum.
- 11.5. In case the CRA identifies serious or deliberate violations of the Regulatory Framework or repeated non-compliance to the instructions given by the CRA, escalated legal actions may be taken by the CRA against the user.
- 11.6. Where interference is caused, despite the compliance by both the complainant and the other authorized user (radio equipment identified to be the cause of interference), the CRA may seek the cooperation of the parties involved to determine reasonable option for resolving the interference problem. Considering technical viable options for amendments including change of frequency (in case of inevitable interference) for one of the parties, the CRA will recommend a solution binding on either or both parties.

12.SPILLOVER / CROSS BORDER INTERFERENCE CASES

- 12.1. In accordance with ITU Radio Regulations¹ Article 15, the CRA has the obligation to respond to the harmful interference complaints received from GCC Telecom Bureau or from Administration of neighboring countries or from ITU, in order to detect and eliminate the harmful interference.
- 12.2. In case of harmful interference originating from other countries, affecting the authorized/licensed frequency users in Qatar, the CRA, in the light of applicable bilateral / mutual agreements or relevant ITU recommendations, will take appropriate actions to report the matter to GCC Telecom Bureau or directly to the concerned Administration or to escalate the matter to ITU, in order to resolve the matter.
- 12.3. The CRA recognizes that in some cases, due to propagation conditions in the region, the interference may not be possible to eliminate altogether in which case necessary measures have to be taken to lessen if not totally eliminate the interference, and the licensee may have to adopt appropriate optimization to manage their radio communication services in an effective manner.
- 12.4. In case of harmful interference complaint received from other Administrations, CRA will evaluate the complaint in the light of applicable bilateral/mutual agreements or relevant ITU recommendations. The concerned spectrum licensee will be informed of all the details of interference complaint and will be advised to take necessary mitigation measures and to submit the compliance report to CRA, within a specified period.
- 12.5. Harmful Interference on frequency(ies) related to public safety, radio navigation, maritime distress and safety requires absolute international protection and elimination of harmful interference to such frequencies is imperative. In such cases of interference, originating from other country, the concerned Administration may be communicated directly by the CRA, in order to expedite the elimination of interference.

¹ ITU Radio Regulation Article 15 outlines the procedure in case of harmful interference between the Member States. It is essential that Member States exercise the utmost goodwill and mutual assistance in the application of the provisions of Article 45 of the Constitution to the settlement of problems of harmful interference. Administrations shall cooperate in the detection and elimination of harmful interference and full particulars relating to harmful interference shall be given in the form indicated in Appendix 10.

ANNEXURE I: HARMFUL INTERFERENCE COMPLAINT FORM

HARMFUL INTERFERENCE COMPLAINT FORM_{M-01}

Pre-requisites:

1. Harmful Interference complaint Form to be submitted by Authorized/ Licensed Spectrum user, hereby referred as Complainant.
2. Preliminary investigation for the interference should be performed to ensure that interference is from any external source
3. The complainant should also ensure that the equipment is operating as per licensed parameters,

without any technical fault. COMPLAINANT INFORMATION

1.1 Name:	1.2 Date of Complaint:
1.3 License Details:	1.4 Contact Person:
1.5 Phone / Fax No:	1.6 Email:

DETAILS OF INTERFERED STATION

2.1 Frequency & Bandwidth:	2.3 Coordinates:
2.2 Location of Station:	
2.4 Location(s) at which interference is experienced:	
2.5 Impact of Interference:	
2.6 Radio service affected:	Fixed Wireless Cellular Other service:
<input type="checkbox"/> FM/TV Broadcast	<input type="checkbox"/> Aeronautical <input type="checkbox"/> Maritime <input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

DETAILS OF INTERFERENCE / SOURCE

3.1 Interference Frequency (if known):	3.2 Identity of Interference (if known):
3.3 Nature of Interference:	Interruption
<input type="checkbox"/> Voice <input type="checkbox"/> Noise <input type="checkbox"/> Cross talk <input type="checkbox"/> Jamming <input type="checkbox"/>	
3.4 Date, Time & Duration of Interference:	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.5 Occurrence / repetition of Interference:	Very Occasional
<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent <input type="checkbox"/> Day / Night	
3.6 Suspected source of Interference:	
3.7 Any other information helpful for investigation:	

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

Spectrum Plot statistics	Audio content Other	Interference
--------------------------	---------------------	--------------

Please send completed form alongwith preliminary investigation results/report by fax or email to: **Spectrum Management Department**

Communications Regulatory Authority (CRA)

Email (interference@cra.gov.qa) , Fax (+974-44830630)

Signature & Stamp:

Date:

ANNEXURE II: INTERFERENCE INVESTIGATION AND RESOLUTION PROCESS FLOWCHART

