



Regulation

on

**Permitting, Installation, Upgrading
and Maintenance
of Public Radiocommunications Stations**

UNOFFICIAL TRANSLATED COPY

2023

CHAPTER ONE DEFINITIONS

Article 1

The terms and expressions herein and in the attached schedules hereto shall have the meanings provided for in the Telecommunications Law, promulgated by Legislative Decree No. 48 of 2002. The following terms and expressions shall have the meanings ascribed to them, unless otherwise required by the context:

Telecommunications Law: The Telecommunications Law promulgated by Legislative Decree No. 48 of 2002.

Building Regulation Law: The Building Regulation Law promulgated by Legislative Decree No. 13 of 1977.

Regulation: The Regulation on Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations.

Order No. 4 of 2009: The order issued by the Public Commission for the Protection of Marine Resources, Environment & Wildlife with respect to the regulation and control of Non-Ionizing radiation arising from electromagnetic fields.

Decision No. 45 of 2015: The Edict issued by the Prime Minister promulgating the Regulation of Public Radiocommunications Stations

Zoning Regulation for Construction: Edict No. 28 of 2009 promulgated by the Prime Minister with regard to the Zoning Regulation for Construction throughout the Kingdom.

Authority: The Telecommunications Regulatory Authority formed under the Telecommunications Law.

Public Radiocommunications Station: Any Radiocommunications Station, which is part of a Public Telecommunications Network.

Sharing Regulation: The regulation on the Wireless Telecommunications Network Facility Sharing issued by virtue of Resolution No. (8) of 2009.

Fast-Track Permit Application Process: The expedited review process the Authority and the Relevant Bodies will undertake to review permit

and/or certificate applications for certain types of Public Radiocommunications Stations as set forth in Schedule 3 of this Regulation.

Final Permit: A permit issued by the Authority for the installation of a Public Radiocommunications Station under powers granted to it under Decision No. 45 of 2015 or under the provisions of Article 7 of this Regulation.

Affected Stations: Legacy Stations to which the provisions of Article 37 of the Regulation apply.

Application Process for the Installation and Upgrading of Public Radiocommunications Stations: The complete review process by the Authority and Relevant Bodies for granting permits, licenses and/or certificates for the installation and upgrading of new Public Radiocommunications Stations subject to Schedule 2 of this Regulation.

No Objection Certificate: a certificate issued by each of the Relevant Bodies, as the case may be, under the provisions of Article 5 of this Regulation.

Annual Compliance Audit: The annual review procedure by the Authority to ensure that all Public Radiocommunications Stations comply with the provisions provided for in the Telecommunications Law, this Regulation, Decision No. 45 of 2015 and in all other relevant orders issued by the Authority and related authorities in the manner set out in Schedule 6 of this Regulation.

Operator: A Public Telecommunications Operator as defined by the Telecommunication Law.

Owning Operator: An operator that owns, manages or leases a Public Radiocommunications Station.

Initiator Operator: An operator who takes the initiative to establish a Public Radiocommunications Station.

Requesting Operator: An operator who applies to an Owner Operator or Initiator operator for sharing in a Public Radiocommunications Station.

Annual Deployment Planning Process: A process carried out by the Authority in coordination with operators and related authorities to set an annual implementation plan as per Schedule 1 of this Regulation.

Public Engagement Process: A process designed to consult with the residents prior to the installation of Public Radiocommunications Stations. Such process is conducted under the provisions of Schedule 4 of this Regulation.

Rectification Application: An application relating to the classification and proposed rectification of each Legacy Public Radiocommunications Station, submitted to the Authority under the requirements, principles and procedures provided for in Schedules 10 and 11 of this Regulation.

Relevant Bodies: All official authorities concerned, except the Authority, whose approval must be secured. They include Municipalities, the Supreme Council for Environment, Civil Aviation Affairs, Urban Planning authorities, security and military authorities, as the case may be.

Municipalities: The Capital's Secretariat and other municipalities concerned.

ICNIRP: The International Commission on Non-Ionizing Radiation Protection.

Electromagnetic Fields: The electromagnetic fields used for the transmitting and receiving signals sent by mobile telephones and Radiocommunications Stations.

Telecommunications Infrastructure Guidelines: The guidelines issued by the Authority in 2008 for the deployment of telecommunications infrastructure.

Site Sharing Process: The process related to the sharing of a Public Radiocommunications Stations provided for in Schedule 5 of this Regulation.

Legacy Stations: Public Radiocommunications Stations installed without a Final Permit issued by the Authority.

Antenna: Any exterior transmitting or receiving device mounted on a Mast, or building or structure and used for communications that radiate or capture electromagnetic waves, digital or analogue signals, radio frequencies (excluding radar signals), wireless Telecommunications signals or any other communication signals.

Building: Any structure that comports with the definition of building or villa under the Building Regulations Law and Zoning Regulation for Construction.

Building Permit: A permit issued by the Municipality as described in Article 5 of this Regulation.

Camouflaged or Stealth Solution: Concealing or disguising Masts to minimise visual impact.

Controlled Access Area: An area within or around a Site, for which an access permit must be issued for the appropriate technical team of the operator or for the persons authorized to act on behalf of the operator or its representatives.

Exclusion Zone: The area around an Antenna in which emissions from electromagnetic fields exceed the levels approved by ICNIRP.

Restricted Access Area: An area within or around a public radiocommunications station Site, which is inaccessible to the public, but accessible to a third party other than Operators after notifying the Authority by the Owning Operator or in the presence by the Authority's representatives thereof for roof maintenance or for other works;

Detailed Design Drawings: Drawings submitted to the Authority at the time of application for a permit and/or certificate in accordance with Article 13 of this Regulation.

Radiocommunications Station Information Management System (RIMS): A system for managing Public Radiocommunications Stations.

Road Occupation Permit: A permit issued by Municipalities as described under the provisions of Article 5 of this Regulation.

Macrocell: A station that provides the largest area of coverage within a wireless network. Its Antennas can be mounted on ground-based, rooftop or other existing Masts, and must be high enough to avoid obstruction. Macrocells provide radio coverage over varying distances, depending on the frequency used, the traffic and the physical terrain.

Small Scale Station: A compact station containing an Antenna that provides a smaller coverage area than a Macrocell. Small Scale Stations include:

1. **Microcell:** a low power Public Radiocommunications Station, extending coverage to a limited area such as a mall, an hotel, or a transportation hub. Coverage is typically considered to be larger than that of a Picocell.

2. Picocell: A low power Public Radiocommunications Station used to extend or enhance wireless coverage in a Building or an outdoor hotspot. Coverage is typically considered to be smaller than that of a Microcell.

3. Femtocell: A low power Public Radiocommunications Station, based on wireless cellular technology, providing wireless voice and broadband services within a limited range inside a home or office environment. Coverage is typically considered to be smaller than that of a Picocell.

Wall Mount: A Mast or Antenna that is mounted on any vertical surface or nearly vertical surface of a Building or other existing structure that is not specifically constructed for the purpose of supporting an Antenna, such that the highest point of the Antenna is at an elevation equal to or lower than the highest point of the surface on which it is mounted. This may include, for example, the exterior walls of a Building, an existing parapet, the side of a water tank, or the side of a freestanding sign.

Temporary Public Radiocommunications Station: A Public Radiocommunications Station that can be located on a truck, trailer or other vehicle, or otherwise designed to be used as a temporary part of a cellular network, to be deployed for special events or emergency situations.

Guyed Mast: Any variety of Mast using wire guys connecting above grade portions of the Mast diagonally with the ground or the structure on which the Mast is placed;

Lattice Tower: A tower which consists of a network of vertical and horizontal supports and crossed metal braces, forming a Mast which is usually triangular or square in cross-section.

Mast: Any wireless communication support structure which can be ground-based deployed on any vertical surface or nearly vertical surface or on rooftops.

Monopole: A Mast consisting of a single pole to support Antennas and connecting appurtenances.

Rooftop Mast: A Mast, which is a) attached or affixed to any structure that is not specifically constructed for the purpose of supporting an Antenna, and b) does not satisfy the definition of Wall Mount or Stub Masts.

Stub Mast: A roof-mounted Mast structure which supports multiple Antennas at heights not exceeding 2 meters measured from the roof of the

Building on which it is installed, and is installed not less than 2 meters from the nearest side of the roof, or camouflaged.

Residents: Individuals and businesses residing in Buildings located within a two hundred (200) metre radius around the locations of a Public Radiocommunications Stations or a Temporary Public Radiocommunications Station.

Equipment Room: A structural annex accommodating the radiocommunications equipment used for operating a Public Radiocommunications Station.

Site: An area where a Public Radiocommunications Station is located or will be located.

Standard Specifications for Construction Works: Standard Specifications for Construction Works, Health and Safety as issued by the Ministry of Works, Municipalities Affairs and Urban Planning.

Streetworks: A short Mast—typically less than 10 meters in height—that is attached to or made to look like a lamppost, utility pole or other street furniture.

Underground Utilities: any underground facilities for electricity, gas, water, waste water, or Telecommunications services or other similar utilities.

Worker: any person who is employed by or on behalf of the Operator and is duly trained to perform works at a Public Radiocommunications Station.

Zoning Map: the map produced by the Authority, which, for the purposes of this Regulation, identifies zones for selecting the preferred designs for public radiocommunications stations, as set forth in Schedule 8 of this Regulation.

Chapter II Objectives and Scope of Application

Article 2

This Regulation aims at achieving the following objectives:

- a) Establishment of a framework for the regulation of Public Radiocommunications Stations, including a permitting and/or certification system that allows for the planning, designing, installing or upgrading and maintaining of Public Radiocommunications Stations, within the powers vested in the Authority by the Telecommunications Law, Decision No. 45 of 2015 and the rules, regulations and technical policies related to health, safety, environment and design issued by the Kingdom's relevant authorities.
- b) Establishment of the necessary rules and regulations under Decision No. 45 of 2015, for the purpose of achieving the following objectives:
 - (1) Ensure adherence to unified policies and procedures to install, upgrade and maintain Public Radiocommunications Stations with the Authority acting as a single point of contact between Operators, the public and the Relevant Bodies with such processes;
 - (2) Provide the best operational practices to ensure compliance with the relevant exposure levels of Electromagnetic Fields to protect the environment and the health and safety of the public;
 - (3) Set forth transparent processes to regulate the selection of the locations for the installation and the preferred types of designs of Public Radiocommunications Stations;
 - (4) Ensure Relevant Bodies and Residents are notified and consulted prior to commencing the installation, upgrading or maintenance of Public Radiocommunications Stations;
 - (5) Identify the types of permits and certificates to be granted by the Relevant Bodies for the installation, upgrading and maintenance of the various types of Public Radiocommunications Stations;
 - (6) Limit unnecessary replication of the current Public Radiocommunications Stations' infrastructure and facilities by encouraging the shared usage of Public Radiocommunications Stations amongst Operators.
 - (7) Promote technological upgrade and innovation in planning, designing, installing and maintaining Public Radiocommunications Stations.

Article 3

This Regulation shall apply to all works of installing, upgrading or maintaining of new Public Radiocommunications Stations, as well as to existing Public Radiocommunications Stations.

Article 4

The provisions of this Regulation do not apply to the stations, networks and telecommunication apparatus specifically allocated for military, national security, emergency medical usages or for civil aviation and radio and television transmission.

Chapter III Permits and Certificates Required

Article 5 Permits and certificates required to install, upgrade or maintain Public Radiocommunications Stations

For the installation, upgrading and maintenance of Public Radiocommunications Stations, the following permits and/or certificates will be required:

1. A Final Permit issued by the Authority upon obtaining the required permits and/or certificates from the Relevant Bodies for the installation, upgrading or maintenance of Public Radiocommunications Stations.
2. A Building Permit issued by the Municipality with jurisdiction in the location where a Public Radiocommunications Station will be installed, permitting the bearer thereof to construct a Building or carry out works or additional works, demolition of a building completely or partially or carrying out any improvement to the Building such as extension, increase of height, outside or inside support or making any change to the ground by excavation or filling in as provided for in the Building Regulation Law.
3. Taking into consideration the Zoning Regulation for Construction, where the installation of a Public Radiocommunications Station does not form a Building subject to the Building Regulation Law, the Municipalities will be consulted for the installation of any telecommunication facility over the roof of any Building to ensure that such facility and the attachments thereto will not extend beyond the limits permitted.

4. A Road Occupation Permit issued by the area Municipality where a Temporary or other Public Radiocommunications Station is being installed in a public road.
5. A No Objection Certificate issued by the Civil Aviation Affairs permitting the installation of a Public Radiocommunications Station that is within the air right easements, is higher than 30 meters above sea level regardless of their location, is in excess of 15 meters in height within an area of 6 kilometres designated as a runway by the Civil Aviation Affairs, or is in other areas where the height of such installations may hamper air navigation, as provided for in the Civil Aviation Law promulgated by Legislative Law No. 14 of 2013 and other regulations applicable in the Kingdom.
6. A No Objection Certificate issued by Bahrain Defence Force permitting the installation of a Public Radiocommunications Station subject to the antenna, masts and telecommunications facilities installation specifications. Exempted from the requirement of this certificate are Stub Masts, Wall Mounts, Temporary Public Radiocommunications Stations, Streetworks and Small Scale Stations.
7. A No Objection Certificate issued by the Supreme Council of Environment permitting the installation of a Public Radiocommunications Station to ensure adherence to the approved limits of non-ionizing emissions from Electromagnetic Fields, as provided for in Order No. 4 of 2009.
8. A No Objection Certificate issued by the General Directorate of Civil Defence permitting the installation of a Public Radiocommunications Station subject to the specifications related to the protection of public safety. Exempted from the requirement of this certificate are Temporary Public Radiocommunications Stations, Streetworks, and Small Scale Stations.
9. A No Objection Certificate issued by the Directorate of Communications at the Ministry of the Interior permitting the installation of a Public Radiocommunications Station subject to the Ministry's security requirements. The Directorate of Communications at the Ministry of the Interior must be notified of the installation of Temporary Public Radiocommunications Stations.

Article 6

Operators are exempted from the requirement of obtaining a Final Permit in respect of Small Scale Stations installed inside Buildings. Provided, that nothing in the foregoing shall be construed to mean that Operators do not require a Type Approval certificate issued by the Authority in respect of radiocommunications equipment used in the operation of such Small Scale Stations. Provided further that operators must notify the Authority of any Small-Scale stations installed inside Buildings, and that such stations must

be registered in the Radiocommunications Information Management System (RIMS), following the payment of the applicable fees.

The fee for the review of applications and for the issuance of the Final Permit for the installation of Small Scale Stations shall be considered as the fee of registration of such type of station. ¹

Article 7 Final Permit

- A. The Authority will issue a Final Permit, which shall be unlimited in duration and shall be subject to Annual Compliance Audit, to the Operator upon the completion of the application process, whereby permit will provide the Authority's approval to install, upgrade or maintain a public radiocommunications station. Such permit will comprise all other permits and certificates required by the Relevant Bodies for the works of a Public Radiocommunications Station as specified in Article 5 of this Regulation.

- B. Without prejudice to the provisions of paragraph (A) of this Article, the operator may, in cases of emergency, submit to the Authority a reasoned request for preliminary approval to install, upgrade or maintain a Public Radiocommunications Station, prior to completing the application process and obtaining the permits and/or certification. The Authority shall consider the application and provide the approval or rejection after consultation with the Relevant Bodies. Any preliminary approval will not be a substitute to completing application process and receiving permits and /or certificates necessary for granting the Final Permits. In case of rejection by any of the Relevant Bodies, the Operators shall comply by correcting the cause of rejection or removing the Public Radiocommunications Station.

Article 8 Temporary Public Radiocommunications Stations

- A. Operators may install Temporary Public Radiocommunications Stations in accordance with the provisions of this Regulation in the following circumstances:

¹ Replaced by virtue of the First Article of Resolution No. (5) of 2023 amending the Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations Regulation issued by Resolution No. (10) of 2018.

1. During emergency situations to ensure non-interruption of service in affected areas and for a period of not more than six (6) months as determined by the Authority under Paragraph (B) of this article.
 2. For special events, the Operator shall apply for a temporary permit for a specified period of time not exceeding 60 days, which period the Authority may extend once or more to a maximum of 6 months from the commencement of usage, in accordance with Clause 3 of Paragraph (B) of this article.
 3. Cancellation or closure of a Public Radiocommunications Station to facilitate the Site upgrading as provided for in Paragraph "D" of this article.
- B. In emergencies, the following actions must be undertaken for the installation of Temporary Public Radiocommunications Stations:
1. Locating as close as possible to the previously existing, but unserviceable Public Radiocommunications Station(s), where operationally practicable;
 2. Not exceeding the height of the previously existing, but unserviceable Public Radiocommunications Station(s);
 3. Removing within a period not exceeding 6 months from commencement of usage or as required, whichever case is the earlier.
- C. In case of special events taking place in areas with limited or insufficient network capacity, Operators may install Temporary Public Radiocommunications Stations to provide connectivity to temporary users. Special events may include, among other things:
1. Outdoor gatherings;
 2. Conferences, seminars or government events;
 3. Festivals and sporting events; or
 4. Construction sites.
- D. For Site upgrading, Temporary Public Radiocommunications Stations may be installed, with the undertaking of the following actions:

1. Locating as close as possible to the existing Public Radiocommunications Station(s) undergoing the upgrading, where operationally practicable;
 2. Not exceeding the height of the existing Public Radiocommunications Station(s) under upgrading; and
 3. Removing within a period of not more than 6 months from commencement.
- E. When installing Temporary Public Radiocommunications Stations, Operators shall take all practicable measures to limit to the lowest possible level the negative effect on visual appearance, surrounding environment, and Residents.
- F. When a Temporary Public Radiocommunications Station is no longer needed or the maximum period of their use has expired, they must be removed by the Operator at its own expense and the land must be restored to its former condition at the Operator's expense. Failure to comply with this obligation shall result in enforcement actions by extraordinary in accordance with Chapter VIII of this Regulation.
- G. Notwithstanding 1 & 2 of Clause A and 3 of Clause B and 3 of Clause D of this article, the Operator may apply to the Authority for an extension of the period of required for the removal of a temporary station beyond six (6) months in extraordinary circumstances. Such extraordinary circumstances are subject to the Authority's discretion.

Article 9

Small Scale Stations deployed inside Buildings

Subject to the provisions of Article 6 of this Regulation, operators of Small Scale Stations installed inside buildings shall:

1. Obtain the Authority's Type Approval on the equipment of such stations.
2. Declare that such stations will comply with the standard set forth in Order No. 4 of 2009.
3. Include such stations within the self-accreditation pack for the Annual Compliance Audit set forth under Schedule 6 of this Regulation.

Chapter IV.

Processes to Issue Permits and Certificates

Article 10
Processes established in this Regulation

This Regulation sets forth the following processes that the Authority, in coordination with the Relevant Bodies, shall undertake:

1. Application Process for the Installation of Public Radiocommunications Stations, pursuant to Schedule 2 of this Regulation;
2. Annual Deployment Planning Process, pursuant to Schedule 1 of this Regulation;
3. Fast-track Permit Application Process, pursuant to Schedule 3 of this Regulation;
4. Public Engagement Process, pursuant to Schedule 4 of this Regulation;
5. Site Sharing Process, pursuant to Schedule 5 of this Regulation; and,
6. Annual Compliance Audit, pursuant to Schedule 6 of this Regulation.

Article 11
Single point of contact

- A. The Authority shall act as the single point of contact between Operators and Relevant Bodies to effectively facilitate obtaining the necessary permits and certificates for the installation, upgrading and maintenance of the Public Radiocommunications Stations.
- B. The Authority and the Relevant Bodies shall comply with the relevant timeframes for processes identified in Article 10 of this Regulation.
- C. The Authority should enter into separate memoranda of understanding with the authorities concerned to ensure effective implementation of its single point of contact functions and to facilitate compliance with the processes and standards herein.

Article 12
Radiocommunications Station Information Management System

The Authority shall establish a Radiocommunications Station Information Management System (RIMS), which shall allow the

Operators to make applications for obtaining permits and/or certificates for the installation, upgrading and maintaining of Public Radiocommunications Stations, file self-accreditation packs for Public Radiocommunications Stations, submit sharing applications and responses, and complete other tasks on-line as the Authority sees fit.

Article 13

Applications for Permitting Public Radiocommunications Stations

- A. Operators shall submit to the Authority applications for obtaining necessary permits and/or certificates using the RIMS.
- B. Operators shall provide the Authority as part of the necessary permits and/or certificate application for the installation of a Public Radiocommunications Station the following information:
 - 1. A written explanation of the scope of work to be carried out, as required;
 - 2. A declaration that the proposed site conforms to the requirements of Order No. 4 of 2009 and of ICNIRP;
 - 3. Supporting documents proving that sharing existing Public Radiocommunications Stations has been taken into consideration before applying for installation of a new Public Radiocommunications Station;
 - 4. Details of the discussions or consultations with any party;
 - 5. A report on the constructional load referred to in Article 32(A)1 of this Regulation; and
 - 6. Any additional information pursuant to the requirements in Schedule 9 of this Regulation and guidance provided for in any guidelines that may have been issued by the Authority with regard to the permit processes.
- C. As part of the necessary permits and/or certificate application Operators shall submit the set of drawings mentioned below:
 - 1. Site Location Plan (with a scale of 1:2500 as a maximum or any other suitable scale for the Site area), which shall include as a minimum the following:

- 1) General location with the area marked in black colour.
 - 2) Position of the station within 100 meters from the Site.
 - 3) Access and adjacent roads to the Site.
2. Station Layout/Design Plan (with a scale of 1:500 as a maximum), which shall show the following:
- 1) Site boundaries.
 - 2) Intended landscaping.
 - 3) Means of access to the Site.
3. Architectural Drawings (with a scale of 1:100 as a maximum), which shall show the following:
- 1) Floor plans, if any.
 - 2) Front elevations with the external appearance of the equipment and Equipment Rooms with the proposed colours.
 - 3) Cross sections of the station with details of height and level, if any.
 - 4) Structural drawings of the foundations and floors.
 - 5) Electrical, mechanical and water connections drawings with the necessary details.
4. Roof Plans (applying to projects with installation of Rooftop Masts; a scale of 1:100 is suitable), which shall show the following:
- 1) Complete roof of Building.
 - 2) Details of the existing and proposed equipment including Antennas, Equipment Room, access channels and air conditioning equipment.
- D. Operators shall engage highly qualified engineers for the planning and design of Public Radiocommunications Stations. Operators shall also use engineering firms accredited by the COEPP for the preparation of engineering drawings and required structural calculations that must be submitted to obtain the requisite permits and certificates.
- E. If an Operator believes that one or more of the drawings referred to in Clause (c) of this article is not relevant to the Final Permit, the Operator may indicate such with an appropriate explanation in its application. This will be subject to the acceptance of the Authority.

Article 14

Accuracy of information

Operators shall provide accurate information to the Authority and other Relevant Bodies in the Annual Deployment Planning Process and permit applications for the installation, upgrading or maintaining of Public Radiocommunications Stations in order to expedite the permitting and certification processes.

Article 15 **Updating of Information**

- A. In addition to the reporting required as part of the self-accreditation process set out in Schedule 6 of this Regulation, Operators are required to maintain up-to-date information relating to their Public Radiocommunications Stations in the RIMS.
- B. Operators shall report to the Authority within twenty-four (24) hours of the occurrence of any incident related to their Public Radiocommunications Stations that may represent a safety or health hazard to the public. The Authority shall make available to the Operators the contact details of its personnel to be notified in the event of such an incident.

Article 16 **Public Complaints Management**

- A. Operators shall put in place an effective complaint handling system to resolve complaints of the public regarding Public Radiocommunications Stations within a reasonable time, but not more than ten (10) working days from the date of the submission of the complaint.
- B. Operators shall announce such procedures of the system referred to in Paragraph A of this article by a means to be determined by the Authority.
- C. In such cases where a complaint is not resolved within the timeframe set forth in Paragraph A of this Article, the Authority shall resolve the complaint upon request from the complainant utilizing a process consistent with Article 55 of the Telecommunications Law.
- D. Operators shall keep a record of complaints regarding each Public Radiocommunications Station, including the date of the complaint, the nature of the complaint and how the complaint was resolved. These records are to be stored in the RIMS for the period in which such station is in operation.

Chapter V.
Design and Build Specifications

Article 17

Adherence to best engineering practice and international standards

- A. The Operators of Public Radiocommunications Stations shall comply with internationally recognized standards and the best engineering practices and conditions applicable in the Kingdom of Bahrain and the requirements, principles and processes set out in the relevant regulations and in Schedule 9 of this Regulation.

- B. In case an Operator considers that it must deviate from the requirements, principles and processes set out in Schedule 9 of this Regulation for the deployment or upgrading of a Public Radiocommunications Station, the Operator must provide reasoned justification for its decision to the satisfaction of the Authority. At its sole discretion, the Authority may reject such justification and require the Operator to comply with the principles and processes as a condition for a Final Permit. The Authority shall provide sufficient reasoning for the decision and indicate to the Operator alternatives for achieving compliance with the requirements, principles and process set out in Schedule 9 referred to above.

Article 18

Health, Safety and Security Standards

- A. Operators shall ensure that security and safety precautions are taken when installing, upgrading and maintaining all Public Radiocommunications Stations.

- B. Operators and other contracting parties shall ensure safety and security precautions are taken when, installing, upgrading and maintaining all Public Radiocommunications Stations, as follows:
 - 1. Where possible locate equipment in a position that is safe to access, thus avoiding the use of ladders, access systems and or the need to work at height;
 - 2. Place all equipment in close proximity, where such placement is possible and is safer to other alternatives;

3. Consider the prevailing weather conditions when placing Equipment Rooms and equipment to provide maximum protection from weather conditions while working on the Sites;
 4. Avoid the requirement for steps up to Equipment Rooms and, where unavoidable, ensure that there is adequate work space with handrails or fall arrest systems;
 5. Ensure that the rotation of equipment support structure, under the influence of wind loading, is limited to a maximum of 0.5 degrees, unless in unusual circumstances the Operator certifies that safety will not be jeopardized by a larger rotation angle;
 6. As a minimum, ensure that Masts are designed to withstand the local weather conditions under maximum equipment loading conditions as specified by the Operator. It is essential that local topography and in particular the slope of the surrounding terrain is factored into the design support calculations, as required within the most up to date engineering design standards;
 7. Design the foundation for Mast to ensure that the superstructure can be fully utilized;
 8. Design the foundation for Masts for a factor of safety of two against overturning. The applied bearing pressure must not exceed the allowable soil bearing pressure as measured by the relevant soil investigation;
 9. Ensure that the earthing and lightning protection systems on all Sites will comply with the requirements of BS EN 62305: Standard for lightning protection;
 10. Comply with the health, safety and security requirements set forth under this Regulation and other applicable rules and guidelines issued by the Authority;
 11. Adherence to the applicable safety and firefighting standards as issued by the General Directorate of Civil Defence; and
 12. Adherence to the Site security and anti-climbing standards as required by the General Directorate of Civil Defence.
- C. Warning signs visible to the public shall comply with the standards set forth under this Regulation.

- D. Operators shall coordinate with the Directorate of Communications at the Ministry of the Interior for the installation and operation of security cameras and devices at Public Radiocommunications Stations. Operators are required to comply with the provisions of Order No. 51 of 2016 with respect to the regulation and utilization of security cameras and devices.

Article 19

Environmental Standards

- A. Operators shall design their Public Radiocommunications Stations to ensure that the Electromagnetic Fields emitted and the installation procedures employed are within the permissible standards as dictated by Order No. 4 for the 2009, comply with the recommendations determined by the ICNIRP and adhere to the radio frequency exposure compliance requirements set forth under Schedule 9 of this Regulation.
- B. The emissions from all existing and future radiocommunications equipment of all the Operators at the Site where a Public Radiocommunications Station is deployed and the surrounding area shall be taken into account when determining compliance with Order No. 4 of 2009.
- C. Operators shall take the necessary measures to:
1. Immediately repair or remove any telecommunications facility which is not in compliance with the provisions of Order No. 4 of 2009 and the ICNIRP standards pursuant to a determination made by the Authority in consultation with the Supreme Council of the Environment.
 2. Prevent technically unqualified personnel from being within the exclusion zone of a Public Radiocommunications Station emitting electromagnetic fields in accordance with the requirements of Order No. 4 of 2009 and the relevant provisions of Schedule 9 of this Regulation.
 3. Train their technical staff working on Public Radiocommunications Stations and make them aware of all possible safety hazards and precautionary measures.
- D. Operators shall operate their Public Radiocommunications Stations in a manner which ensures that:

1. The radio emissions outputs are kept to the lowest levels possible for effective service; and
2. Radio waves and emissions shall not cause interference to other radiocommunications networks resulting in an unacceptable reduction in the level of service.

Article 20

Civil Aviation Standards

- A. Operators shall design and construct their Public Radiocommunications Stations in accordance with the air navigation safety requirements and specifications applied by the Civil Aviation Affairs and the principles and processes set out in Schedule 9 of this Regulation.
1. Operators shall install in all high-rise support structures used for Public Radiocommunications Stations warning lights or shall paint them to reduce the hazards which may be caused by such facilities to air navigation. These support structures include all ground-based Masts that are 15 meters or more above sea level in height, as per the standards and specifications applied by the Civil Aviation Affairs.
 2. Operators shall use warning lights with a suitable power and intensity to be visible to air navigation during day and night. Such lights shall conform to the specifications applied by Civil Aviation Affairs.
- B. Pursuant to the Annual Compliance Audit detailed in Schedule 6 of this Regulation, Operators shall provide the Authority with as-built measurements of heights and coordinates according to the WGS-84 System for high-rise support structures in all existing and newly constructed Public Radiocommunications Stations to guarantee the accuracy of data which ensures safe air navigation.

Article 21

Traffic Safety Within and Around Stations

Operators shall take into consideration the traffic safety and planning authorities' requirements when designing and constructing a Public Radiocommunications Station and, to that effect, shall comply with the relevant principles and processes set out in Schedule 9 of this Regulation.

Article 22

Structural designs

- A. All structural and civil designs must comply with the following Euro Codes and national related standards that may be adopted from time to time:
- a. I.S.EN1990 Euro Code 0: Basis of structural design;
 - b. I.S.EN1991 Euro Code 1: Actions on structures;
 - c. I.S.EN1992 Euro Code 2: Design of concrete structures;
 - d. I.S.EN1993 Euro Code 3: Design of steel structures;
 - e. I.S.EN1994 Euro Code 4: Design of composite steel and concrete structures;
 - f. I.S.EN1995 Euro Code 5: Design of timber structures;
 - g. I.S.EN1996 Euro Code 6: Design of masonry structures;
 - h. I.S.EN1997 Euro Code 7: Geotechnical design;
 - i. I.S.EN1998 Euro Code 8: Design of structures for earthquake resistance; and
 - j. I.S.EN1999 Euro Code 9: Design of aluminium structures
- B. Operators shall ensure that each Public Radiocommunications Station complies with the most up to date version of the Euro Codes identified in Paragraph A of this Article and shall comply with the relevant requirements, principles and processes set out in Schedule 9 of this Regulation.

Article 23

Identification of Operator and Advertising on Sites

- A. A billboard including the Operator's name and contact details in cases of emergencies shall be installed on all sides of the Public Radiocommunications Stations. The size of the billboard shall not be less than 400 mm x 400 mm.
- B. Signboards or other advertising means may be placed on or inside the Site only with prior approval of the relevant Municipality.

Article 24

Height of Public Radiocommunications Stations

Subject to sharing requirements, the height of Masts should not exceed the height required to satisfy operational requirements and Operators' legal obligations.

Article 25

Site for the installation of Public Radiocommunications Stations

- A. The area and size of the Public Radiocommunications Stations shall meet the Operator's operational requirements and provide a suitable level of safety and security arrangements for the station.
- B. The construction area of the Masts and other telecommunications facilities shall comply with the allowed construction area percentages applicable to the different zoning classifications pursuant to the Zoning Regulation for Construction.
- C. A setback distance shall be maintained from the Site's fencing wall to each of the walls of the Public Radiocommunications Station, Masts and other equipment equal to that specified by the Zoning Regulation for Construction applicable to the land in use. The setback distance shall not be less than two (2) meters.

Article 26

In-building Telecommunications Facilities

- A. The Authority shall coordinate with the Municipalities and other Relevant Bodies to ensure that construction companies and property developers install telecommunications facilities and in-building cables at commercial and residential premises.
- B. In-building facilities shall be shared between Operators to facilitate deployment of Small Scale Stations and ensure internal coverage within Buildings.

CHAPTER VI. SITING AND DESIGN STANDARDS

Article 27

Radiocommunications Stations of appropriate appearance

- A. The designs for new Public Radiocommunications Stations proposed by Operators shall be of appropriate appearance and shall limit the negative effect on visual appearance, surrounding environment, and Residents to the lowest level possible.
- B. Proposed designs shall be deemed of appropriate appearance by the Authority and the Municipalities if they conform to one or more of the preferred design options set forth in Schedule 8 of this Regulation regarding the specific zoning classification of the land where the Public Radiocommunications Station is to be installed.
- C. To assist the Authority and the Municipalities in determining the most suitable design for a particular Site, Operators shall provide in their permit applications at least three (3) alternative designs for the Public Radiocommunications Station in question. All three (3) designs shall comply with the requirements set forth in Schedule 8 of this Regulation.
- D. In the event that, due to limited technical solutions, the Operator is unable to submit designs in accordance with Section C of this Article that comply with at least one of the allowed design options set forth in Schedule 8 of this Regulation:
 - 1. The Operator shall provide the Authority with at least three (3) alternative designs, with a detailed explanation of their first-choice design and appearance and all mitigation measures proposed to limit the impact of the Public Radiocommunications Station on the surrounding environment. Alternate designs necessarily be accompanied with detailed structural drawings and calculations.
 - 2. The Authority and the Municipality shall determine during the permitting and certification process whether to accept or reject the proposed designs.
 - 3. In case of rejection, the Authority shall provide sufficient reasoning for the decision and indicate to the Operator alternatives for the design or siting of the Public Radiocommunications Station.

Article 28

General options for siting and design

- A. When planning the design and siting of a new Public Radiocommunications Station, Operators shall take the following main alternatives into consideration:

1. Sharing Public Radiocommunications Stations;
 2. Using Small Scale Stations or Camouflaged or Stealth Solutions;
 3. Installation of Wall Mounts or Stub Masts;
 4. Erecting new, self-standing ground support structures; and
 5. Erecting Rooftop Masts on roofs of existing Buildings and structures taking into consideration the general scenery and concealing or camouflaging Radiocommunications Equipment wherever possible.
- B. The alternatives described in Paragraph 1 of this Article shall be assessed by Operators in conjunction with the preferred design options for the specific zoning classification of the land where the Public Radiocommunications Station is to be installed as provided in Schedule 8 of this Regulation.

Article 29

Obligation to Minimize Visual Impact on Surrounding Environment

- A. Operators shall minimize the effect of the Public Radiocommunications Stations and their designs on the general scenery of the surrounding environment.
- B. To achieve the objective set forth in Paragraph A of this Article, Operators shall carry out the following:
1. Conceal Radiocommunications Equipment and devices inside Buildings or inside suitable fiberglass or other material covers;
 2. Camouflage public Radiocommunications Equipment and devices with other shapes like trees, road facilities or any other public artwork, in line with the general appearance;
 3. Use fully concealed Antennas and Small Scale Stations whenever possible in inhabited areas;
 4. Use the most suitable preferred design option in accordance with Schedule 8 of this Regulation; and

5. Place new Public Radiocommunications Stations near or between trees or consider the possibility of planting trees or plants within the Site.

Article 30

Colours and Materials

- A. The designs of new Public Radiocommunications Stations as well as the materials and colours used in their construction shall be consistent with the surrounding environment, whenever possible, as follows:
 1. Where Masts are extended upwards, an Operator shall paint them with a suitable non-reflective colour such as pale grey.
 2. Where the Public Radiocommunications Station, including Masts, equipment or Antennas, are set against a background levelled ground or a group of trees, the suitable colour may be coarse beige or dark green.
- B. Outdoor Equipment Rooms shall be compatible with the rest of the facilities of a Public Radiocommunications Station and painted with colours that match its external surroundings in order to minimize colour contrast.
- C. The Operators shall ensure that the colour of any fence or boundary wall erected surrounding the Site matches its geographical surrounding.

Article 31

Siting of Radiocommunications Stations

- A. Operators shall select Public Radiocommunications Station locations in areas that:
 1. Do not raise valid concerns or objections of its Residents; and
 2. Are able to meet their coverage requirements provided for in the relevant Telecommunications Licenses issued by the Authority.
- B. Operators shall provide sufficient and convincing written justifications when selecting Sites that may raise reasonable concerns or objections from Residents as detailed in the process for public engagement set forth in Schedule 4 of this Regulation.

- C. When proposing alternative Sites for deployment of Public Radiocommunications Stations as part of the Annual Deployment Planning Process detailed in Schedule 1 of this Regulation, Operators shall survey all possibly suitable Sites within the search area and shall submit a detailed report to the Authority that shall include:
1. An evaluation of all proposed Site options which may be implemented with recommendations relating to the relative merits of each proposed Site; and
 2. A preferred Site for the construction of the new Public Radiocommunications Station for approval by the Authority in consultation with the Relevant Bodies.
- D. In all cases, when proposing Sites for the installation of Public Radiocommunications Stations Operators shall ensure compliance with the following requirements:
1. Access to the Site shall be convenient through a public road for the purpose of construction, repair and regular maintenance works.
 2. Availability of an appropriate electrical power source close to the Site.
 3. The Site shall be appropriate for meeting the technical requirement for installing a new Public Radiocommunications Station whether for increasing the coverage area, providing additional capacity in a congested area or for strengthening existing poor coverage.
 4. The Site provides a safe working environment for the operation and maintenance staff in accordance with the applicable safety and security standards set forth pursuant to Article 18 of this Regulation.
 5. The Site should avoid locating Masts and accompanying facilities over Underground Utilities.

Article 32

Rooftop Sites

- A. Where Operators intend to install a Public Radiocommunications Station on the rooftop of an existing Building or structure, they shall:
1. Apply for a Final Permit from the Authority and/or certification from the appropriate authorities. An application must be accompanied with a technical report prepared by an engineering office accredited by the

COEPP confirming that the Building or structure is capable of sustaining weights of the new equipment that the Operator intends to add.

2. Ensure that the equipment being deployed has a minimal impact on public scenery.
 3. Minimize the requirement for working at height throughout the life of the Site, from initial build until decommissioning.
- B. Comply with specific requirements on Rooftop Site design established in Article 5 of Schedule 9 of this Regulation.

Article 35

Site sharing

- A. In accordance with the Sharing Regulation, Operators shall make the required efforts to ensure the sharing of existing Public Radiocommunications Stations in order to optimize the use of existing stations, to avoid replication of Public Radiocommunications Stations, and to preserve the general scenery as long as such sharing is the optimal solution.
- B. The following cases are exempted from the provisions of Paragraph A of this article, subject to the discretion of the Authority:
1. If the level of Electromagnetic Fields emitted from the Public Radiocommunications Station is higher than the permitted levels under Order No. 4 of 2009.
 2. If sharing or upgrading the existing Public Radiocommunications Station will have a greater negative effect on the general scenery than increasing the number of such stations.
 3. Existence of technical constraints that prevent the installation of additional radiocommunications equipment, including, but not limited to, harmful interference.
 4. Poor location of existing Public Radiocommunications Stations or when the height of such stations is insufficient for the provision of the required coverage.

5. Inability of the existing Mast structure to safely hold additional equipment.
6. Existing power connections are unable to supply the Requesting Operator's radiocommunications equipment and facilities with the required power supply.
7. Other reasons that, in the opinion of the Operators may prevent the sharing of the Public Radiocommunications Stations. Such reasons shall be subject to the Authority's consent.

Chapter VII. Fees

Article 34

The Operator shall pay the applicable fees due for applications and performance of the Annual Compliance Audits in accordance with the provisions of the Regulation and the schedule of fees issued by the Authority from time to time pursuant to the provisions of Article 18 of the Telecommunications Law.

Chapter VIII. Process of Compliance Verification

Article 35 Enforcement Actions Against Non-Compliance

- A. The Authority may take enforcement actions in case an Operator fails to comply with the provisions of this Regulation. Such enforcement actions shall be taken under the power of authority vested in the Authority as provided for in Articles 35 and 65 of the Telecommunications Law. Such actions may consist of one or more of the following:
 1. Directions to Operators to do or refrain from doing any acts or to rectify a situation.
 2. Directions to Operators to remove non-compliant Public Radiocommunications Station;
 3. Imposing a fine commensurate to the violation to be based on objective justification and the fairness and non-discrimination among Operators.

4. Warning the relevant Operator that its Final Permit will be cancelled if the Operator fails to comply with the obligation specified in the relevant Authority directions or refrains from payment of the fine.
 5. Revocation of license in accordance with Article 35 of the Telecommunications Law.
- B. The fines imposed by the Authority as a result of non-compliance with the provisions of this Regulation shall be subject to the Guidelines for the Setting of the Amount of a Fine for Violations of Articles 35 and/or 65 of the Telecommunications Law issued by the Authority in 16 March 2014.
- C. An operator may appeal to the Authority against any decision or order issued under the provisions of this Regulation. An operator may also challenge such a decision or order in accordance with the provisions provided for in Chapter 16 of the Telecommunications Law.

Article 36

Settlement of Disputes Among Operators

- A. The Authority will examine complaints and settle disputes arising among operators subject to the Dispute Resolution Guidelines issued by the Authority on 25 August 2014 in accordance with the provisions of Chapter 7 of the Telecommunications Law.
- B. Notwithstanding the provisions of Paragraph A of this article, Operators shall endeavour to address any disputes relating to Public Radiocommunications Stations within the Annual Planning Process described in Schedule 1 of this Regulation and the Site Sharing Process described in Schedule 5 of this Regulation.

Chapter IX.

Transitional Provisions

Rectification of non-compliant stations

Article 37

- A. For the purpose of this Regulation, Affected Stations are those Legacy Stations that have:

1. Been installed without obtaining appropriate Building permits and do not comply with the provisions of any of the following legislations:
 - 1) The Building Regulation Law;
 - 2) Order No. 4 of 2009; or
 - 3) The Zoning Regulation for Construction.
 2. Obtained the required permits and/or certificates but been implemented in a manner which is incompatible with the area zoning and with the appropriate design options as set forth in Schedule 11 of this Regulation.
 3. Been installed without obtaining the required permits and/or certificates and comply with the area zoning and appropriate design options set forth in Schedule 11 of this Regulation.
 4. Obtained the required permits, but where the support structure of said Public Radiocommunications Stations is proven unable to sustain the resultant loads, which may be hazardous to public safety and properties. Operators shall submit bearing load certificate when requested.
- B. Rectification works related to the Affected Stations will take place in accordance with the processes as set out in this Regulation and Schedules 10 and 11 hereof.

Article 38

Operators will be responsible for rectifying the status of their Public Radiocommunications Stations, as directed by the Authority in this regard, and in accordance with the following procedures:

1. Providing assistance and all the required information to enable the Authority in cooperation with the Relevant Bodies to carry out their duties efficiently with the intent to survey all Public Radiocommunications Stations to determine those that are non-compliant.
2. Within a reasonable timeframe to be determined by the Authority in consultation with the Relevant Bodies, but in no case exceeding ninety (90) days, to carry out all modifications and corrective works in accordance with this Regulation. In the event the Operator fails to do so, the Authority and the Relevant Bodies shall take the necessary legal measures and procedures.

3. The Authority may, in exceptional cases and for reasons considered appropriate, extend the timeframe provided for in Clause 2 of this Article, once or more, provided that such extensions may not totally exceed ninety (90) days.
4. In coordination with the Relevant Bodies, the Authority shall notify the concerned Operators in writing or by any other suitable means of the violations together with any other details. The notification shall specify the procedures and actions which an Operator shall perform to remove such violations.

Article 39

- A. All Operators shall, within the timescales stipulated and in accordance with the relevant principles and processes set out in Schedules 10 to 11 of this Regulation, verify that all their existing Legacy Stations have been permitted and/or issued with non-objection certificates as Public Radiocommunications Stations in accordance with the objectives of this Regulation and Decision No. 45 of 2015.
- B. In accordance with the relevant requirements, principles and processes set out in Schedules 10 to 11 of this Regulation, Operators shall prepare and submit to the Authority Rectification Applications that allow the Authority to take such steps as are necessary to verify that each of the Operator's Legacy Stations is:
 1. Maintained, managed and operated in accordance with the relevant provisions relating to public health and safety;
 2. Maintained, managed and operated in order to promote sharing and to limit unnecessary duplication of Radiocommunications Stations; and
 3. Maintained, managed and operated with the aim of minimizing negative visual effects on the environment and surrounding Residents.
- C. The Authority shall review each Rectification Application and request additional information and/or clarification if it believes it is necessary to do so in accordance with the relevant requirements, principles and processes.
- D. If, following its review of a Rectification Application, the Authority decides that further action is required by an Operator, the Authority will instruct the Operator to propose what remedial action can be taken in

order to ensure that the Legacy Station in question complies with the terms of the relevant schedules of this Regulation and Decision No. 45 of 2015.

- E. The Authority will liaise with all Relevant Bodies in relation to any requisite approvals and/or certificates (if applicable) that the Operator will need to obtain in order to fulfil its obligations under Paragraphs A and B of this article.
- F. The Operator shall, in accordance with the relevant requirements, principles and processes set out in Schedules 10 to 11 of this Regulation, liaise with the Authority and file such additional applications as are necessary to allow the Authority to issue a Final Permit for the Legacy Station.
- G. Once a Legacy Station has been rectified and/or has been assigned a Final Permit by the Authority, such station shall be subject to:
 - 1. The Site Sharing Process set forth in Schedule 5 of this Regulation; and
 - 2. The Annual Compliance Audit set forth in Schedule 6 of this Regulation.
- H. Should an Operator fail to comply with its obligations under this Article and/or the relevant requirements, principles and processes set out in Schedules 10 and 11 of this Regulation, the Authority shall have the right to exercise its powers conferred upon it under Chapter VIII of this Regulation.
- I. An Operator may, in exceptional circumstances, request the Authority grant partial exemption from certain requirements, principles and processes set forth in Schedules 10 to 11 of this Regulation. The Operator must provide appropriate justification for its request. The Authority will consider granting it such request. If the Authority agrees with such justification, it may grant the operator such exemption and, in which case, the Authority will publish such exemption together with detailed justifications.

CHAPTER X. Concluding Provisions

Article 40

If a deadline stipulated in the Regulation or the Schedules of this Regulation falls within the dates of a holiday or official leave, such deadline shall extend to the first working day thereafter.

Article 41

The Authority will provide the forms for application, appeal, certification and documents provided for herein and review such forms, as necessary, in accordance with the provisions of this Regulation.

Article 42

The Schedules of this Regulation shall be an integral part of this Regulation.

SCHEDULES

SCHEDULE 1

ANNUAL DEPLOYMENT PLANNING PROCESS

First

The Scope and Objectives

- A. This Schedule sets forth the Annual Deployment Planning Process for deploying the Public Radiocommunications Stations, which shall be conducted by the Authority in coordination with the Operators and the Relevant Bodies to develop the Annual Deployment Plan.
- B. The Annual Deployment Planning Process for deploying Public Radiocommunications Stations shall aim for the following:
1. Increase coordination and interactions between the Authority, the Operators and the Relevant Bodies in the process of selecting Sites for the deployment of Public Radiocommunications Stations in order to achieve the goals set forth in Decision No. 45 of 2015;
 2. Optimise the use of existing Public Radiocommunications Stations by promoting sharing, whenever sharing is the optimal solution pursuant to the provisions set forth in Decision No. 45 of 2015, this Regulation and all other related decisions issued by the Authority;
 3. Keep the number of new deployments of Public Radiocommunications Stations to the minimum necessary to ensure the efficient operation of radiocommunications networks and to meet Operators' legal obligations;
 4. Limit the impact of Public Radiocommunications Stations on the surrounding environment, public scenery and interests of Residents in the locations such stations are to be constructed;
 5. Implement a transparent and predictable consultation process with Operators and Relevant Bodies; and
 6. Ensure that all Public Radiocommunications Stations are designed and installed in compliance with the provisions set forth under Decision No. 45 of 2015, this Regulation and all other related orders issued by the Authority and the Relevant Bodies.

- C. The Authority will issue the annual deployment plan, which includes the proposed installation of the Public Radiocommunications Stations within a specified period of time of one year by location, type design, height and sharing status.
- D. In the transitional period between the implementation of the Regulation and the start of the first annual deployment plan for installing the Public Radiocommunications Stations, Operators may deploy Public Radiocommunications Stations that are fully compliant with the Regulation but have not been reviewed as part of the Annual Deployment Planning Process.

**Second
Notification for initial Site planning meetings**

- A. Annually, within the six months preceding the start of the period covered by the annual deployment plan, the Authority shall issue a notification to Operators identifying a date and a place where the initial Site planning meetings will be held between the Authority and the Operators.
- B. Each operator notified in accordance with provisions of Paragraph A of Second of this Schedule shall present to the Authority within a period of 30 days an annual planning package containing the following information:
 - 1. A summary of Public Radiocommunications Stations deployments that have taken place during the previous twelve (12) months.
 - 2. A forecast of deployments of Public Radiocommunications Stations for the twelve (12) month period starting five (5) months after the submission date of such forecast, specifying for each Public Radiocommunications Station the following information:
 - 1) Up to three proposed physical locations for the Public Radiocommunications Station;
 - 2) Design type of the Public Radiocommunications Station per physical location;
 - 3) Height of the Public Radiocommunications Station per physical location;
 - 4) Proposed sharing status of the Public Radiocommunications Station per physical location; and

- 5) A declaration that such Public Radiocommunications Station complies with the standards and requirements set forth in the Regulation.
3. An updated two-year high-level forecast of Public Radiocommunications Station deployments, including types and general areas of deployment. The general areas of deployment shall at least identify the Municipality area and the national address block number where the Operator expects to install the Public Radiocommunications Stations.
- C. Operators shall submit the information described in Paragraph B of Second of this Schedule in the manner specified by the Authority in the notification.

Third
Review of Attachments Submitted by Operators

- A. Within five (5) working days of receiving the attachments submitted by each operator, the Authority shall review the annual planning package.
- B. If the Authority determines that the information submitted in the annual planning package is incomplete, or that further clarification is required, the Authority shall notify the Operator to file supplemental information within five (5) working days. Such direction may request additional information relating to:
 1. Deployments that have taken place during the previous twelve (12) months;
 2. Specific Public Radiocommunications Stations that the Operator plans to deploy during the period of the upcoming annual deployment plan; and
 3. The two-year forecast of Public Radiocommunications Stations deployments.
- C. In the event the Operator does not provide a response within the time granted by the Authority under Paragraph B of Third of this Schedule, or if the Authority determines that the supplemental information is incomplete or does not provide the clarification required, the Authority may:

1. If the supplemental information is a requirement provided for in Clause 1 or 3 of Paragraph B of Third of this Schedule, the Authority shall continue the Annual Deployment Planning Process and provide the Operator an additional five (5) working days to submit supplemental information. Failure to provide complete supplemental information will be deemed a breach of this Regulation and shall result in the Authority taking enforcement action.
 2. If the supplemental information is a requirement provided for in Clause 2 of Paragraph B of Third, the Authority will exclude such stations from the Annual Deployment Planning Process and from the preparation of the draft annual deployment plan.
- D. If the Authority deems that the information in the annual planning package submitted by the Operator is complete, the Authority will proceed with the preparation of the draft annual deployment plan as provided for in Fourth of this Schedule.

Fourth
Draft Annual Deployment Plan

- A. Based on the information received from Operators under Second and Third of this Schedule, the Authority shall:
1. Develop the draft annual deployment plan; and
 2. Create a new file in the RIMS containing the proposed deployments of Public Radiocommunications Stations by Operator for the period of the upcoming annual deployment plan.
- B. To develop the draft annual plan, the Authority will review the deployments proposed by each Operator, to ascertain:
1. Compliance of the proposed Public Radiocommunications Stations with the provisions of this Regulation;
 2. Additional opportunities for consolidation through sharing at existing or proposed Public Radiocommunications Stations; and
 3. Whether the Authority requires additional information to develop the Draft Annual Deployment Plan.

- C. The Authority shall submit to Operators a draft annual deployment plan at least four (4) months before the start of the period covered by the annual deployment plan.

Fifth

Consultation with Operators

- A. The Authority and the Operators shall hold meetings to revise the draft annual deployment plan as needed seeking consensus among the parties.
- B. Upon implementing all modifications, the Authority will produce a revised draft annual deployment plan no later than three (3) months preceding the start of the period covered by the annual deployment plan.

Sixth

Notification for the joint planning meeting

No later than four (4) months preceding the start of the period covered by the Annual Deployment Plan, the Authority shall issue a notification to Operators and Relevant Bodies identifying the expected date and a place for one or more joint planning meetings to be held between the Authority, the Operators and the Relevant Bodies.

Seventh

Review by Relevant Bodies

- A. No later than three (3) months before the start of the period covered by the annual deployment plan, the Authority shall send the revised draft annual deployment plan to the Relevant Bodies, which shall have one month from the date of delivery by the Authority to review such draft plan and submit comments to the Authority.
- B. The Authority shall review any comments received from the Relevant Bodies and make any modifications it deems necessary to the revised draft annual deployment plan.
- C. No later than forty-five (45) calendar days before the start of the period covered by the annual deployment plan, the Authority will send the draft final annual deployment plan to the Relevant Bodies and Operators.

Eighth Annual Deployment Plan

- A. No later than at least one (1) month before the start of the period covered by the annual deployment plan, the Authority shall hold one or more detailed planning meetings with Operators and Relevant Bodies to finalize the draft final annual deployment plan.

- B. The Authority shall address any issues raised during the joint planning meetings, making any modifications it deems necessary to the draft final annual deployment plan.

- C. The Authority will issue the annual deployment plan at least one (1) week before its commencement date.

SCHEDULE 2

APPLICATION PROCESS FOR INSTALLING OR UPGRADING PUBLIC RADIOCOMMUNICATIONS STATIONS

First Scope and objectives

- A. This Schedule sets forth the application processes to install or upgrade Public Radiocommunications Stations supervised by the Authority, in coordination with the Relevant Bodies, to obtain the requisite approvals for Operators to install new Public Radiocommunications Stations in the Kingdom.
- B. In the application of the provisions of this Schedule, the periodic maintenance of the Public Radiocommunications Station shall not be considered as upgrading.
- C. The application processes to install or upgrade Public Radiocommunications Stations shall have the following specific objectives:
 - 1. Establish an efficient single point of contact for the Permit Application Process to install new Public Radiocommunications Stations;
 - 2. Ensure an effective and timely review process of such applications by the Relevant Bodies;
 - 3. Provide a transparent process to elicit the views of Residents of the locations where such Public Radiocommunications Stations are to be constructed; and
 - 4. Facilitate and streamline interactions between Operators and Relevant Bodies.
- D. A chart summarizing the application processes to install Public Radiocommunications Stations is depicted in Figure 2-1 of this Schedule.

Second Operators to submit applications via RIMS

- A. Operators shall submit all applications to install a new Public Radiocommunications Station or upgrade an existing one through the RIMS as directed by the Authority.

- B. The Authority will not accept more than four applications per working day from any one Operator. Applications submitted in excess of this limit will be rolled forward as if submitted on subsequent working days and addressed on a first-in, first-out basis.
- C. The Authority shall issue a notification to Operator specifying the applicable fees and method of payment to Authority.

Third Determination of completeness of application

- A. The Authority shall review all applications for completeness within five (5) working days following the operator's submission of the payment confirmation of the applicable fees.
- B. If the Authority determines that the application submitted is incomplete, or that further clarification is required, the Authority shall direct the Operator to file supplemental information within five (5) working days.
- C. The Authority shall have five (5) working days following the submission of supplemental information by the Operator to determine whether the revised application is complete or not. If the Authority determines the revised application is incomplete or requires further clarification, the Authority may (i) either reject the Application or (ii) direct the Operator to provide additional information or clarifications within five (5) working days.²
- D. Once the Authority determines that the application is complete, the Authority shall:
 - 1. In cases where expedited review is warranted, follow the Fast-track Permit Application Process established in Schedule 3 of this Regulation.
 - 2. In cases where expedited review is not warranted:
 - 1) Submit the appropriate requests to the Relevant Bodies for their review and follow the process described in Fourth and Fifth of this Schedule; and

² Replaced by virtue of the Second Article of Resolution No. (5) of 2023 amending the Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations Regulation issued by Resolution No. (10) of 2018.

- 2) Initiate a Public Engagement Process according to Schedule 4 of this Regulation.

Fourth

Review of Application by The Authority and Relevant Bodies

- A. Relevant Bodies shall have thirty (30) calendar days from the day the Authority submits the request set forth in Sub Clause 1 of Clause 2 of Paragraph D of Third of this Schedule to review and issue decision about approval and/or a no objection certificate.
- B. The Authority shall coordinate with the Relevant Bodies during the review process.
- C. In the event a Municipality does not issue a decision on whether to grant or deny a requisite approval after the lapse of the period provided for in Paragraph A of Fourth of this Schedule, the Authority shall:
 1. Within five (5) calendar days notify the Operator that the Municipality had not issued a decision on its application;
 2. Operator is to inform the Authority about any actions it might have taken under the provisions of Article 7 of the Building Regulations Law, and enclose a copy thereof to the Authority through RIMS.
- D. Any decision by a Relevant Body denying an application shall be reasoned and inclusive of the proposed corrective measures so that the Operator may remove the reasons for rejection. The Operator may submit a new application to the Authority to rectify the reasons for rejection.

Fifth

Final Consideration and Approval by the Authority

- A. Once the Relevant Bodies have issued the requisite permits and/or certificates or, in cases where the Operator has demonstrated to the Authority that it has properly obtained a Building permit under Article 7 of the Building Regulation Law, the Authority shall have five (5) working days to decide on the application.
- B. Upon its approval of the application, the Authority shall:

1. Notify the Operator of the initial approval of the application; and
 2. Update the application's status to reflect approval in the RIMS.
- C. The Authority shall issue to the Operator Final Permit either in written format or electronically through RIMS. ³
- D. Subsequent to issuing the Final Permit, the Operator shall, with five (5) working days of starting the work, inform the Authority of the starting date of work on the Public Radiocommunications Station.
- E. Subsequent to completion of the Public Radiocommunications Station Site works, the Operator shall submit "as built" documentation for the station to the Authority demonstrating that the implementation of Site works has been carried out according to the Detailed Design Drawings, and submit amended drawings, if any, which confirms compliance with this Regulation for the site works.

³ Replaced by virtue of Resolution No. (5) of 2023 amending the Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations Regulation issued by Resolution No. (10) of 2018.

SCHEDULE 3

FAST-TRACK APPLICATION PROCESS

First Scope and objectives

- A. This Schedule sets forth the Fast-track Application Process, which shall be conducted by the Authority in coordination with the Relevant Bodies to issue the permits and certificates required to:
1. Upgrade existing Public Radiocommunications Stations set out in Paragraph B of First of this Schedule;
 2. Authorise the deployment of Temporary Public Radiocommunications Stations; or
 3. Authorise the deployment of Small Scale Stations.
- B. Upgrade of an existing Public Radiocommunications Station shall be made through the Fast-track application process in the following instances:
1. The Operator proposes to make any structural modification to such Public Radiocommunications Station;
 2. The Operator proposes to make any modification to an existing Public Radiocommunications Station that may affect health and safety of the public or the surrounding environment.
- C. For the purpose of this Regulation, routine maintenance of a Public Radiocommunications Station shall not be considered as an upgrade.
- D. An Operator installing one or more additional Antenna(e) on an existing Public Radiocommunications Station owned by him, need not apply for a Final Permit if none of the provisions of paragraph B of the first section of this Schedule are applicable. Provided that an Operator may only proceed with the installation thereof after obtaining a structural load certificate from an engineering firm accredited by the COEPP confirming that the Public Radiocommunications Station(s) in question can handle the additional Antennae and only after submitting a copy of such certificate to the Authority.

Operators covered by the preceding paragraph are required to provide the Authority on quarterly basis with a register containing all additional Antennae that were installed during the preceding quarter. ⁴

- E. The Fast-track Application Process shall seek to achieve the following specific objectives:
1. Simplify and expedite the Permit Application Process in the cases specifically identified in this Schedule;
 2. Implement an efficient single point of contact for the Fast-track Application Process;
 3. Ensure that service is available to Users during emergency situations and that Public Radiocommunications Stations used to that effect are duly approved; and
 4. Create incentives for Operators to deploy, where technically feasible, Small Scale Stations to limit the impact of Public Radiocommunications Stations on the surrounding environment, public scenery and Residents.

Second Fast-Track Application Process

- A. In cases where it is warranted under Clause 1 of Paragraph D of Third of Schedule 2, the Authority shall, after the Operators submits evidence of applicable payment, notify the Relevant Bodies using a fast-track notification in the RIMS.
- B. The Relevant Bodies shall examine the application and issue a decision on whether to grant or deny the requisite approval within five (5) working days. If a Relevant Body does not issue a decision within this period, it shall be deemed that the application has been approved.
- C. Upon receipt of approval from the Relevant Bodies or if the relevant bodies have not taken any decision, the Authority shall:
1. Notify the Operator of the approval of the application; and
 2. Update the application's status to reflect approval in the RIMS.

⁴ Replaced by virtue of Resolution No. (5) of 2023 amending the Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations Regulation issued by Resolution No. (10) of 2018.

D. The Authority shall, within a period of four (4) working days of receiving permits and/or certification from the Relevant Bodies, issue the Final Permit to the operator either in written format or electronically through RIMS. ⁵

E. Upon receiving the final permit, the operator, may proceed with:

1. Upgrading to the existing Public Radiocommunications Station;
2. Deploying a Temporary Public Radiocommunications Station; or
3. Deploying a Small Scale Station.

**Third
Deployment of Temporary Public Radiocommunications Stations for
emergency situations**

A. In the case of emergency situations in which existing service has been unexpectedly interrupted and can only be restored in the short-term by deployment of a Temporary Public Radiocommunications Station, the Operator shall:

1. Immediately take all actions necessary to deploy a Temporary Public Radiocommunications Station and commence operation of such station to ensure Users have access to the service;
2. Submit an application for installing a temporary public radiocommunications station. Such application is to be submitted within four (4) days of commencement of work on the installation of a Temporary Public Radiocommunications Station.
3. Ensure that the Temporary Public Radiocommunications Station deployed does not affect health and safety of the public or air navigation;
4. If upon review of the application the Authority determines that an emergency situation justifying the deployment of the Temporary Public Radiocommunications Station exists, it shall follow the Fast-track Application Process to grant a Final Permit as established herein.

⁵ Replaced by virtue of Resolution No. (5) of 2023 amending the Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations Regulation issued by Resolution No. (10) of 2018.

- B. If upon review of the application the Authority determines that an emergency situation justifying the deployment of the Temporary Public Radiocommunications Station does not exist, the Authority:
1. Shall order the Operator to immediately cease operations and decommission the Temporary Public Radiocommunications Station in question within three (3) working days; and
 2. May, at its sole discretion, seek the enforcement actions for non-compliance listed under Chapter VIII of this Regulation.
- C. Temporary Public Radiocommunications Stations may be deployed in non-emergency situations if the relevant permit or certification has been obtained in advance of deployment.

SCHEDULE 4

PUBLIC ENGAGEMENT PROCESS

First Scope and objectives

- A. This Schedule sets forth the Public Engagement Process that shall be conducted to consult concerned Residents prior to the installation of Public Radiocommunications Stations.
- B. The Public Engagement Process shall not apply in the case of Public Radiocommunications Stations subject to the Fast-track Permitting Process described in Schedule 3 of this Regulation.
- C. The Public Engagement Process shall ensure that Residents of the areas where Public Radiocommunications Stations subject to this Schedule will be installed are:
 - 1. Provided advance notification of the installation of proposed Public Radiocommunications Stations;
 - 2. Given meaningful information on the exact location, design type, height and technical characteristics of proposed Public Radiocommunications Stations; and
 - 3. Granted opportunity to provide valid comments regarding the installation of proposed Public Radiocommunications Stations.

Second Initiation of Public Engagement Process

- A. Where the Authority determines that an application to install a new Public Radiocommunications Station is complete according to Paragraph D of Third of Schedule 2 of this Regulation and not subject to the Fast-track Permitting Process, the Authority shall initiate a Public Engagement Process by ordering the Operator to:
 - 1. Post a notification at the proposed Site selected for installation of the Public Radiocommunications Station. This notification must be posted on an outer wall, on suitably sized of notice board, with font size of at least 18 mm, and be visible from an adjacent road or public space;

2. Provide the Authority with an electronic version of the notification referred to in Clause 1 of Paragraph A of Second of this Schedule, within 5 days of receiving the order for publication on its website.
- B. The notification must include the following information:
1. Design type;
 2. Station Height;
 3. A simple sketch of the station;
 4. Energy sources to be used;
 5. Accompanying Equipment Rooms or Buildings to be erected, if any;
 6. Deadline for the public to submit valid comments or objections to the Authority, which shall be within two weeks from the day the notification is posted;
 7. Manner to present valid comments or objections to the Authority, which may be in writing through the Authority's website or via email or by telephone. The notification shall provide the electronic addresses and telephone numbers to be used for this purpose;
 8. Reference number of the permit application for the Radiocommunications Station in question issued by the Authority; and
 9. Such other information as the Authority may direct in its related order in this respect.
- C. The Operator shall demonstrate to the Authority that it has properly installed the notification for the residents in accordance with Paragraphs A and B of Second of this Schedule.
- D. If the Authority determines that the notification was not properly given, the Authority shall notify the Operator of the remedial actions required and grant the Operator a period of (5) days to implement them. If the Operator fails to implement such remedial actions or does not implement them to the satisfaction of the Authority, the application shall be deemed void and the review process terminated.
- E. If the Authority determines that the notification was properly given in accordance with Paragraphs A and B of Second of this Schedule, the

Authority shall continue the Public Engagement Process in accordance with Third of this Schedule.

Third
Procedure to Assess Valid Comments and Objections

- A. Comments and objections received from the public before the deadline set forth in Clause 6 of Paragraph B of Second of this Schedule shall be reviewed by the Authority within two weeks of receipt to determine whether they are valid and justify action by the Operator.
- B. A comment or objection will not be deemed valid in the following instances:
 - 1. It relates to aesthetic or visual aspects, and the proposed Public Radiocommunications Station is compliant with zoning and preferred design options for the specific area where it is to be constructed as set forth in Schedule 8 of this Regulation;
 - 2. It relates to concerns associated with non-ionizing radiation and the Public Radiocommunications Station is compliant with the standards set forth in Order No. 4 of 2009;
 - 3. It is deemed disrespectful, ambiguous, incomplete or inconsistent with the law;
 - 4. It relates to other concerns which the Authority determines from time to time that are not valid cause for comment or objection.
- C. Comments or objections that are not deemed valid will be addressed by the Authority, which shall give specific answers to the person or persons that presented the comment or objection. These comments or objections will not be forwarded by the Authority to the Operator for consideration.

Fourth
Procedure to Address Valid Comments or Objections

- A. For valid comments or objections necessitating action from the Operator, the Authority shall coordinate with the Operator and Municipalities to address the concerns raised.
 - 1. If the Authority determines that to resolve the comment or objection a solution can be found that does not substantively change the nature

of the initial application, the Authority shall notify the Operator of the remedial actions required. The Permit Application Process will be suspended until the Authority is satisfied that the Operator has fully implemented such remedial actions.

2. If the Authority determines that to resolve the comment or objection a solution cannot be found that does not substantively change the nature of the initial application, such application will be declared void and the Operator must file a new application implementing the remedial actions identified by the Authority.

B. Valid comments or objections shall be addressed by the Authority within four (4) weeks from the date of submission of a valid comment or objection. Within this timeframe, specific notification shall be given to the person or persons that presented the valid comment or objection on the assessment of such comment or objection and the remedial actions to be implemented by the Operator.

SCHEDULE 5 SITE SHARING PROCESS

First Scope and objectives

- A. This Schedule sets forth the Site Sharing Process for new or existing Public Radiocommunications Stations, which shall be conducted by the Authority in coordination with the Operators and the Relevant Bodies.
- B. Further to the matters referred to in the Regulation, the Site Sharing Process achieves the following objectives:
 - 1. Establishes an efficient single point of contact for the Site Sharing Process; and
 - 2. Optimises the use of new and existing Public Radiocommunications Stations by promoting sharing, whenever sharing is the optimal solution, in accordance with the provisions of Articles 17, 18 and 19 of Decision No. 45 of 2015 and of the Schedules 1 and 2 of this Regulation.

Second Quarterly Assessment of Site Sharing

- A. On the first working day of each quarter of the year, each Operator shall submit a filing to the Authority and other Operators detailing the sharing opportunities on its Public Radiocommunications Stations. These sharing opportunities shall be deemed as an offer to share new and existing stations to every other Operator through the end of the quarter in question.
- B. Operators shall submit their sharing opportunities using the RIMS.
- C. The Authority shall evaluate the filings no later than six (6) working days after the first working day of the quarter to determine:
 - 1. Whether the statement submitted by each operator is consistent with the annual deployment plan developed under Schedule 1 of this Regulation; and
 - 2. Whether Operators have reviewed and express interest in sharing a new or existing Public Radiocommunications Station, as may be appropriate.

D. Where a filing has not been submitted or is inconsistent with this Article, the Authority shall:

1. Order the Operator to comply with this Article; and
2. At its sole discretion, seek the enforcement actions for non-compliance under Chapter VIII of this Regulation.

Third

Monitoring of Site Sharing Negotiations and Relevant Application Process

- A. The Authority shall monitor the sharing process among Operators regarding new or existing Public Radiocommunications Stations in accordance with Schedules 1 and 2 attached to Decision No. 45 of 2015.
- B. Upon reaching agreement on the readiness for sharing of an existing Public Radiocommunications Station with a Requesting Operator, the Owner or Initiator Operator shall utilise the Fast-track Permit Application Process described in Schedule 3 of this Regulation to obtain the relevant permits and/or certificates.
- C. Upon successful negotiation of a sharing agreement for a new Public Radiocommunications Station in accordance with Schedule 2 of Decision No. 45 of 2015, the Owner or Initiator Operator shall utilize the Permit Application Process described in Schedule 2 of this Regulation to obtain the relevant permits and/or certificates.
- D. Operators shall undertake to review and respond to sharing applications for existing and new Public Radiocommunications Stations within a period of time not exceeding five (5) working days from the receipt of sharing applications.

SCHEDULE 6

ANNUAL COMPLIANCE AUDIT

First

Scope and objectives

- A. This Schedule sets forth the Annual Compliance Audit concerning Public Radiocommunications Stations, which shall be conducted by the Authority in coordination with the Operators.
- B. The Annual Compliance Audit shall ensure that all Public Radiocommunications Stations comply with the provisions set forth in the Telecommunications Law, this Regulation, Order No. 45 of 2015 and all other orders issued by the Authority and the relevant authorities.
- C. A chart summarizing the On-going Compliance Review Process is depicted in Figure 6-1 of this Schedule.

Second

Self-Accreditation Pack

- A. Operators shall submit an annual self-accreditation pack for each Public Radiocommunications Station as directed by the Authority within the following timeframe:
 - 1. The initial self-accreditation pack for a Public Radiocommunications Station shall be submitted within a period ranging from 12 months to 24 months upon obtaining the Final Permit for such station; and
 - 2. Subsequent self-accreditation packs for a Public Radio Communications Station shall be submitted within twelve (12) months from the date of submission of the previous self-accreditation pack of such station.
- B. The self-accreditation pack shall demonstrate compliance of the Public Radiocommunications Stations with the provisions set forth In Order No. 45 of 2015, this Regulation and all other related decisions issued by the Authority and the Relevant Bodies.
- C. The requisite information to be submitted by Operators in the self-accreditation pack shall consist, at a minimum, of the following:
 - 1. Site Location;

2. Statement of Compliance with the ICNIRP's levels for Electromagnetic Fields;
 3. Statement of Compliance with Requirements for obtaining a Municipality's Building Permit or Road Occupation Permit, if applicable;
 4. Statement of Compliance with Requirements for the Civil Aviation Authority's No Objection Certificate, if applicable;
 5. Statement of Compliance with Requirements for the Supreme Council for the Environment's No Objection Certificate, if applicable;
 6. Statement of Compliance with Requirements for the Bahrain Defence Forces' No Objection Certificate, if applicable;
 7. Statement of Compliance with Requirements for the General Directorate of Civil Defence's No Objection Certificate, if applicable;
 8. Statement of Compliance with the requirements of Communications Department of the Ministry of Interior, if applicable.
 9. Copy of Valid Electrical and Earthing Test Certificate;
 10. Statement of Compliance with the provisions of this Regulation; and
 11. "As built" photos for the station type as in the Final Permit
- D. Authority shall assign a reference number for each self-accreditation pack submitted by an Operator.

Third Public Radiocommunications Stations Available for Audit

Within five (5) working days from the submission of a self-accreditation pack, the Authority shall evaluate each pack to determine whether it is complete and to determine:

1. If the self-accreditation pack is complete, then the Authority will add the Public Radiocommunications Station associated with the pack to

the database of Public Radiocommunications Stations available for compliance audit within the following twelve (12) months in the RIMS.

2. If the self-accreditation pack is incomplete or requires clarification, then:
 - 1) Shall direct the Operator to file a revised self-accreditation pack that is compliant with this Schedule; and
 - 2) May, at its sole discretion, seek the enforcement the penal actions for non-compliance under Chapter VIII of this Regulation.

Fourth Internal Plan for Annual Compliance Audit

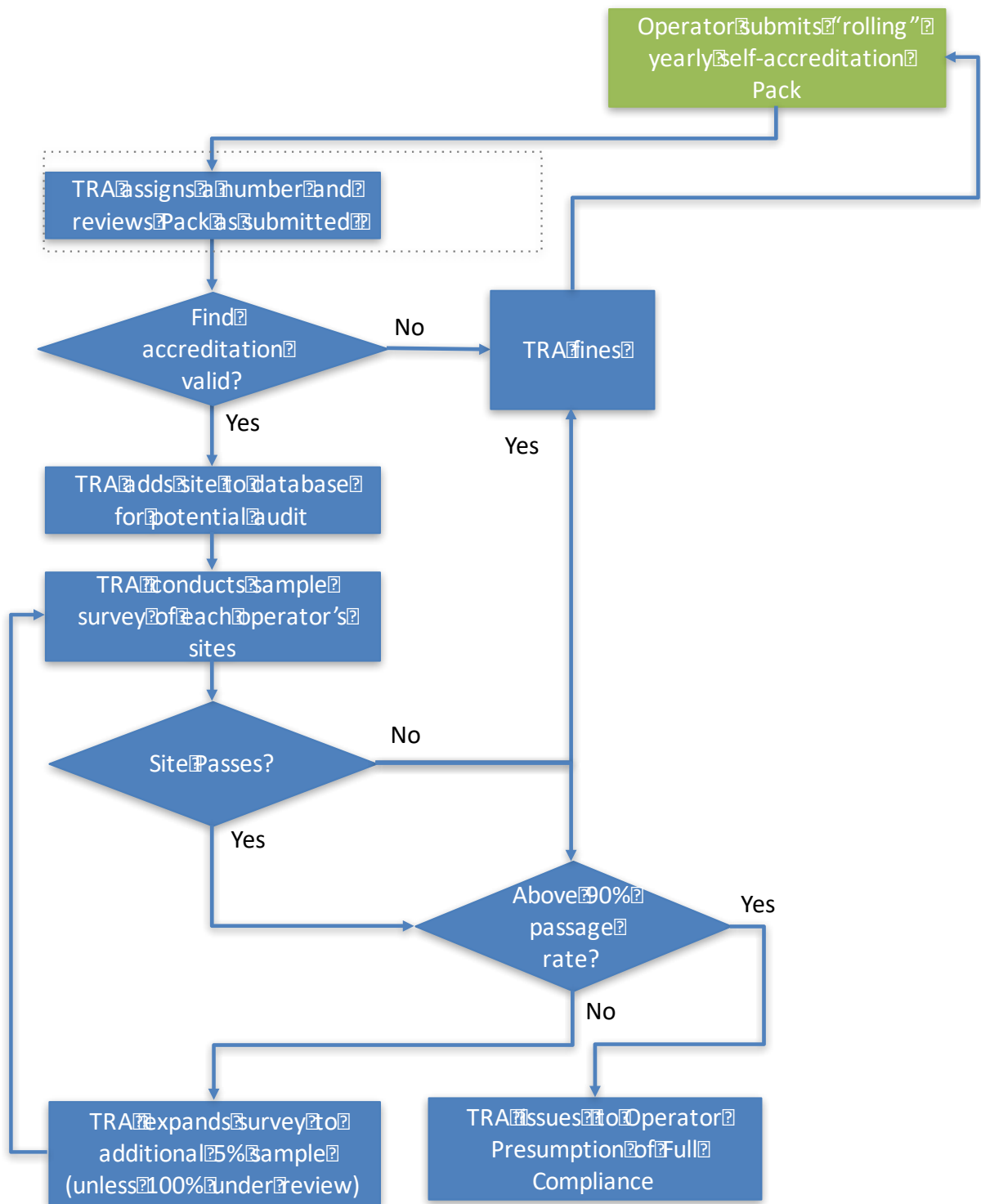
- A. Before the end of August each year, the Authority shall complete an internal plan to audit a sample of Public Radiocommunications Stations of each Operator for compliance with the provisions set forth under Decision No. 45 of 2015, this Regulation and all other related decisions issued by the Authority and the Relevant Bodies.
- B. The compliance audit shall, at a minimum, verify that each Public Radiocommunications Station meets the requirements of Chapters V and VI of this Regulation.

Fifth Annual Compliance Audit

- A. The Authority or a third party on behalf of the Authority may conduct compliance audit of Operator's certain Public Radiocommunications Stations, to ensure compliance of such stations and to issue a decision whether each station audited has passed or failed the compliance audit.
- B. For each Public Radiocommunications Station that fails the audit, the Authority:
 1. Shall direct the Operator to initiate remedial actions within a specified timeframe to bring the station in question into compliance; and
 2. May, at its sole discretion, seek the enforcement actions for non-compliance as listed under Chapter VIII of this Regulation.
- C. Should less than 90% of the audited Public Radiocommunications Stations of an Operator pass the compliance audit, the Authority shall:

1. Expand the scope of compliance audit to encompass an additional percentage of the Operator's Public Radiocommunications Stations, as many times as is needed, until:
 - 1) 90% of an Operator's audited Public Radiocommunications Stations pass the compliance audit; or
 - 2) 100% of an Operator's Public Radiocommunications Stations are audited.
 2. The Authority shall determine the timeframe to conduct the expanded audits as needed.
- D. Where 90% of an Operator's audited Public Radiocommunications Stations pass the compliance audit, the Authority shall issue a Presumption of Full Compliance Certificate to the Operator.

Figure 6-1: Chart of the Annual Compliance Audit Process



SCHEDULE 7

PERMITTING AND CERTIFICATION REQUIREMENTS BASED ON SUPPORT STRUCTURE

1. The following table summarizes the permits and/or certificates that each Relevant Body must issue for the various types of Public Radiocommunications Stations deployed by Operators in the Kingdom of Bahrain based on their support structure:

No.	Type of Public Radio-communications Station	Authority	Municipalities	CAA	BDF	GDCD	SCE	Communications Department of Ministry of Interior
1	Guyed Mast	Final Permit	Building Permit	NOC	NOC	NOC	NOC	NOC
2	Latticed Mast	Final Permit	Building Permit	NOC	NOC	NOC	NOC	NOC
3	Monopole	Final Permit	Building Permit	NOC	NOC	NOC	NOC	NOC
4	Rooftop Mast	Final Permit	Building Permit	NOC	NOC	NOC	NOC	NOC
5	Stub Mast	Final Permit	Building Permit(*)	N/A	N/A	NOC	NOC	NOC
6	Wall Mount	Final Permit	Building Permit(*)	N/A	N/A	NOC	NOC	NOC
7	Temporary Station	Final Permit	ROP if in public road; N/A otherwise	NOC	N/A	N/A	NOC	N/A, but Notify
8	Streetworks	Final Permit	ROP if in public road; N/A otherwise	N/A	N/A	N/A	NOC	NOC
9	Small Scale Outside Building	Final Permit	ROP if in public road; N/A otherwise	N/A	N/A	N/A	NOC	NOC
10	Small Scale Inside Building	N/A, but notify	N/A	N/A	N/A	N/A	N/A	N/A

NOC= No Objection Certificate

N/A = Not applicable, meaning that no permit or certificate applies provided compliant with Article 38 of the Telecommunications Law and notified to the Authority as per Article 6 of the Regulation

ROP= Road Occupation Permit

() The installation of a Stub Mast or Wall Mount requires a Building Permit if the construction of a roof-top Equipment Room, or any other alteration to the Building as provided for in the Building Regulation Law, is required; otherwise, a Building Permit from the Municipality is not applicable.*

SCHEDULE 8
ALLOWED PUBLIC RADIOCOMMUNICATIONS STATION DESIGN
OPTIONS

First
Permissible Design Options

1. The following table summarizes types of the Public Radiocommunications Stations allowed by zone.
2. The Authority shall publish a map identifying the various zones described in the table below to assist Operators in the process of designing and applying for relevant permits and certificates for Public Radiocommunications Stations. This map shall be made available through the RIMS.

Zone	Type of Station					
	Camouflaged or Stealth Solution	Wall Mounts/ Stub Mast	Small Scale Station / Streetworks	Monopole	Rooftop Mast	Lattice or Guyed Mast
Places of Interest	Allowed	Allowed	Allowed	Not Allowed	Not Allowed	Not Allowed
<200m from Major Roads(*)	Allowed	Allowed	Allowed	Not Allowed	Not Allowed	Not Allowed
Residential Areas	Allowed	Allowed	Allowed	Conditionally Allowed(**)	Not Allowed	Not Allowed
Commercial Districts	Allowed	Allowed	Allowed	Not Allowed	Not Allowed	Not Allowed
Industrial Areas	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed
Rural Locations/Low Populated Area	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed

Note:

(*)“<200 m from Major Road” means less than 200 meters from the centre of a Major Road
(**) “Conditionally Allowed” means the antennas and supporting electrical and mechanical equipment must be camouflaged so as to make the antennas and related equipment as visually concealed as possible.

Second

Additional conditions on preferred design options

The Authority shall follow the additional conditions described below to assess proposed designs unless the Operator provides compelling evidence that alternative design options are best suited for a particular Public Radiocommunications Station based on health and safety, financial, aesthetic or other considerations:

1. For Camouflage or Stealth Solutions, the Authority prefers that such solution be appropriate for the context of its surroundings.
2. For Monopoles, Lattice Masts, Guyed Masts and Rooftop Masts, subject to the provisions of Article 18(e) of Order No. 45 of 2015, the Authority prefers a deployment outside of a 200 meter radius of an existing Mast.
3. Among Monopoles, Lattice Masts and Guyed Masts, the Authority prefers Monopoles over Lattice Masts and Guyed Masts.
4. For Monopoles, Lattice Masts and Guyed Masts, the Authority prefers deployment of Public Radiocommunications Stations where:
 - 1) The mast should be concealed by physical features, vegetation, building or other structures.
 - 2) Masts with low profile Antenna arrays will blend with street furniture or common utility structures;
 - 3) Deployment is out of public view; and
 - 4) The height of the Mast is not higher than 30 meters from the base.
5. For Rooftop Masts, the Authority prefers that, when such a Mast extends above the roof height of a Building on which it is mounted, every effort shall be made to conceal or camouflage the facility within or behind existing or new architectural features to limit its visibility from public ways. Rooftop Masts should be stepped back from the front façade of the Building in order to limit their impact on the Building's silhouette.
6. For Wall Mounts, the Authority prefers such Public Radiocommunications Stations that blend with the existing Building's architecture and where the panels shall be painted or shielded with material consistent with the design features and materials of the Building.

7. For Stub Masts, the Authority prefers that the height of such structures not exceed 2 meters measured from the rooftop and that such Masts stepped back from the front façade of the Building in order to limit their impact on the Building's silhouette.
8. The Authority prefers Small Scale Stations and Streetworks as design option whenever viable.
9. With respect to Equipment Rooms, the Authority prefers Equipment Rooms designed in accordance with one of the following design standards:
 - 1) Equipment Rooms are designed so that they are architecturally consistent, with respect to materials and appearance, with the Buildings in the area surrounding the Public Radiocommunications Station; or
 - 2) Equipment Rooms are camouflaged behind an effective year-round landscape buffer, equal to the height of the proposed Equipment Room, and/or a fence of an opaque material, if other types of camouflage are not feasible; or
 - 3) If installed on a rooftop, the Equipment Rooms is concealed or camouflaged so that the Equipment Room either is, as much as possible, not visible at grade or appears to be a part of the original structure.
10. With regard to associated cabling, the Authority prefers that the cables be routed internally within the existing Building unless the Building construction does not allow internal routing of the cables. In the case that the cabling cannot be routed internally within the existing Building, the cable of the Authority must be concealed or integrated to the extent feasible.

SCHEDULE 9

ADDITIONAL TECHNICAL REQUIREMENTS

First Scope and Application

This Schedule shall apply to all new and existing Public Radiocommunications Stations subject to the Regulation. Operators are required to bring Legacy Stations into full compliance with the provisions of this Regulation, before or within the period specified by the Authority in accordance with Schedule 10 of this Regulation. Irrespective of the timetables provided for in Schedule 10, Operators shall take immediate remedial action in respect of any Public Radiocommunications Station which poses potential health, safety or environmental hazards.

Second Structural Loading Requirements

- A. The designs of Public Radiocommunications Stations must be fully compliant with all relevant and most up to date versions of applicable international standards as identified in Article 22 of this Regulation, the Standard Specifications for Construction Works and any other applicable legislation and regulation.
- B. Any proposed Mast shall be designed structurally, electrically, and in all other respects, to accommodate both the Owning or Initiator Operator's Antennas and comparable Antennas for at least two additional Operators if the structure is over 30 m in height, or for at least one additional Operator if the structure is 18 m to 30 m in height.
- C. Any proposed Mast must be designed to allow for the future rearrangement of Antennas upon the Mast and to accept Antennas mounted at varying heights. Operators are required to allow additional Antennas owned and/or operated by other Operators on their Masts.
- D. Operators must carry out a specific design assessment for the selection of the type of Mast and requirement for foundations for the Mast to be installed on Site. Where equipment is to be added to an existing Mast or support structure, and such additions may increase structural loading, a specific structural design assessment related to the additional loads must be carried out as part of the design works.

- E. Any base of a structure that is at a height that warrants edge protection shall have safety barriers, handrails or other suitable forms of fall protection in place. The base of the structure must be of sufficient strength and be suitable for such edge protection.
- F. Due allowance is to be taken of all wind, static, dynamic and live loading conditions. The design must make due allowance for the access, durability, service continuity, operating life and the operation and maintenance requirements of the Public Radiocommunications Station.
- G. All architectural and structural designs shall be certified by an engineering firm accredited by the COEPP in accordance with Article 13(D) of this Regulation.

Third Equipment Requirements

In the deployment of a Public Radiocommunications Station, the Operator shall use the most up to date and relevant manufacturer's equipment specifications in the preparation of the design, taking due notice of physical properties, handling guidelines and the operation and maintenance requirements of the equipment.

Fourth Greenfield Site Investigation and Initial Technical Survey

- A. Greenfield Sites require that a geotechnical investigation be undertaken by a competent contractor. This investigation should include the following requirements:
 - 1. Bore hole log;
 - 2. Soil tests;
 - 3. Results noting in particular the soil bearing pressure at appropriate intervals that exceed planned foundation formation level;
 - 4. Conclusions;
 - 5. Recommendations; and
 - 6. Plan drawing of Site with location of bore holes clearly marked.

- B. A complete building survey of the construction area will be undertaken along with a risk assessment for all third-party Sites. This will establish the on-site risks, hazards and working criteria for the design.

Fifth

Additional Guidance Specific to Rooftop Sites

- A. To minimize the requirement for working at height for the installation, upgrading and maintenance of Rooftop Stations, the maintenance-free life of equipment and ancillary equipment should be as long as possible.
- B. The hazards associated with operational and maintenance work required on Rooftop Stations must be identified and risk assessed. If the risks cannot be eliminated the control measures to minimize the risk must be recorded. During operational and maintenance work the possibility of fire must also be considered.
- C. Roof surface penetration should be avoided where possible. Any roof surface penetration is to be immediately made good to avoid any risk of water ingress.

Sixth

Quality of Material used in Site Construction

A. General quality of materials

1. Building construction material and methods shall be in accordance to the Standard Specifications for Construction Works.
2. All building materials must be fit for purpose and also suitable to the environmental conditions in which they are to be used.
3. Building materials must be handled, stored, prepared, used and installed in accordance with the manufacturer's current written recommendations. The general quality of workmanship shall meet, at a minimum, the requirements set out in the most current version of BS 8000 Workmanship on Building Sites.

B. Weight of Materials

1. The weight of materials shall be limited to the amount that the roofing material and structural supports can safely carry. Materials shall not be placed, on either a temporary or permanent basis, in a location that cannot support them.

2. The materials and permanent loads shall not be placed directly on roofing in a manner that through punching or tearing that risks leading to water ingress.
3. Heavy loads shall be cantered over structurally suitable load bearing walls, concrete lift housing and stairwells, structural columns and structural beams.
4. Structural beams must be checked for structural load capacity and for deflection limits, appropriate to the Building's functions, to ensure that sagging does not lead to damage to the roofing material, ceiling and services available.

C. Working on Existing and Third-Party Property

1. The Operator and associated contractors shall plan and execute the works in such a manner as to cause the minimum of disruption and/or damage to existing and third party property. All existing Buildings are to be maintained as weather tight and waterproof throughout the period of construction and during operational and maintenance life.
2. The contractors shall document the build process with photographs. Any damage caused to the existing features during the works shall be immediately recorded by clear photographs and provided to the construction engineer.
3. All damage shall be made good to the Site provider's satisfaction prior to the responsible contractor leaving the Site, where reasonably practicable, in the same conditions as before the build process commenced.

Seventh Lighting

- A. No lighting of buildings, equipment and other structures on the Site, either from ground-mounted or mounting on the structures themselves, shall be allowed unless required by the Authority or by the Civil Aviation Affairs.
- B. Lighting of buildings, equipment and other structures on the Site may be permitted if it is of low intensity, directed inward and downward and is limited to within the Site boundary.

- C. Appropriate lighting must be fitted to all Buildings where persons are to carry out work and on the approaches to such Buildings to ensure that there is sufficient artificial light present to allow them to carry out their work in safety. Emergency lighting must be installed and certified to the requirements of General Directorate of Civil Defence and I.S. 3217: Emergency Lighting.
- D. When incorporated into the approved design of the Mast, lighting shall be designed and arranged so that it does not glare onto adjacent property or roadways.

Eighth Cautionary Signage

- A. Suitable warning signs shall be installed using standard safety pictograms, words and colours addressing the following:
 - 1. Electrical hazards;
 - 2. Access routes;
 - 3. The requirement to wear safety harness, wherever fall arrest and work restraining systems are necessary;
 - 4. Trip hazards / unprotected edges; and
 - 5. Emitted electromagnetic wave hazards.
- B. As a minimum requirement for Sites, suitable cautionary signage shall be installed at the following locations:
 - 1. Final access onto a roof at eye level;
 - 2. Prominently on any physical barrier installed to prevent access into a non-compliance area;
 - 3. Adjacent to an Antenna at eye level; and
 - 4. For non-ionizing radiation warning signs, at the point(s) of controlled access and on the Antennas themselves as an added precaution.
- C. If there are known underground cables they shall be shown on the record drawings of the Site.

D. The following additional warning signs shall be utilised in connection with the Mast or Site, as applicable:

1. If high voltage is necessary for the operation of the Mast or any backhaul network or associated equipment, "HIGH VOLTAGE — DANGER" warning signs shall be permanently attached to the fence or wall surrounding the structure and spaced no more than 6 meters apart; and
2. "NO TRESPASSING" warning signs:
 - 1) shall be permanently attached to the fence or wall surrounding the structure and spaced no more than 12 meters;
 - 2) shall be written with the height of the lettering at least 0.3 meters and installed at least 1.5 meters above the finished grade; and,
 - 3) may be attached to free standing poles if the content of the sign may otherwise be obstructed by landscaping.

E. The Site shall contain a sign of dimensions 40 cm x 40 cm in order to provide adequate notification to persons in the immediate area of the presence of an Antenna that has transmission capabilities and shall contain the name(s) of the owner(s) and Operator(s) of the Antenna(s) as well as emergency phone number(s). The sign shall be on the Equipment Room of the Operator and be visible from the access point to the Site and must identify the equipment owner of the Equipment Room. For Public Radiocommunications Stations that do not have an Equipment Room, the sign must be on a readily visible surface.

Ninth Equipment Accommodation

A. General

1. Equipment accommodation must be designed in compliance with, at a minimum, all sections of this Schedule and other applicable safety, health and welfare-at-work laws and regulations and labour safety.
2. All structural designs must comply with the most up to date Eurocodes, I.S.EN 1990-1999, Standard Specifications for Construction Works, Bahraini environmental, health and safety legislation and guidelines and other applicable rules and codes applicable in the Kingdom.

3. Equipment shall be accommodated in the safest, most efficient manner on a Site-specific basis.
4. Equipment accommodation shall follow Detailed Design Drawings that ensure a sufficient space is available.
5. With regards to equipment rooms, the walls, floor, and ceiling shall have a fire resistance suitable for the Building or environment in which it is built and in accordance with GDCD requirements.
6. The design of the equipment accommodation must ensure that the noise levels emitted from the Equipment Room, including air conditioning, do not exceed the limits defined by relevant standards and legislation. Noise levels for air conditioning units shall be determined from manufacturer's product information.
7. The design of the equipment accommodation must minimize the transmission of vibrations to surrounding premises.
8. Equipment accommodation comes in two types:
 - 1) Outdoor Equipment Rooms; and
 - 2) In-premise rooms.

B. Outdoor Equipment Rooms

1. All outdoor Equipment Rooms and structure accessories accommodating equipment shall be architecturally designed to blend in with the surrounding environment and shall meet the minimum setback requirements of the relevant zoning district.
2. Ground-mounted equipment shall be screened from view by suitable vegetation, except where a design of non-vegetative screening better reflects and complements the architectural character of the surrounding neighbourhood.
3. The Equipment Room shall contain one or more carbon dioxide extinguishers in accordance with GDCD requirements.
4. The fabric of the Equipment Room shall be designed to be:
 - 1) Watertight;

- 2) Weather proof;
 - 3) Temperature and fire controlled;
 - 4) Acoustically insulated against sound from the equipment;
 - 5) Protected against solar gain;
 - 6) Secure from unauthorized access; and
 - 7) Structurally suitable to withstand loads from internal fixings and supporting equipment.
5. Where possible, the outdoor Equipment Room shall be located at ground level on a standard concrete base in order to allow safe ease of access for personnel.
 6. Where it is necessary to locate outdoor Equipment Rooms at roof level:
 - 1) A structural support frame shall be used to transfer the loads onto the structural elements of the Building;
 - 2) Anchor bolts are to be used to secure the units to the base;
 - 3) The base onto which the units are to sit must be level +/- 2.5 mm over 1600 mm span, true to the horizontal plane;
 - 4) When two or more plinths are mounted adjacent to each other the top face of the plinths must be levelled within +/- 0.5 mm of each other to a true horizontal plane; and
 - 5) Roof repair work and new works shall be compatible with existing roofing systems and products.

C. In-premises Rooms

1. In-premise rooms shall be designed taking into account all relevant Building regulations and national codes of practice.
2. The walls, floors and ceilings shall have a fire resistance suitable for the Building type in which the in-premises room is located.

3. The in-premise room shall be resistant to external environmental conditions, such as moisture and temperature variations, that may affect the operation of the enclosed equipment.
4. The in-premises room shall be designed so as to prevent any unauthorized access to the equipment.
5. The equipment must be fixed in position within the in-premise room as specified on the equipment layout drawing of the Detail Design Drawings.
6. The equipment must be bolted to the ground using an anchor suitable to the floor type. The units must also be bolted to the rear wall as required by manufacturer's unit installation specifications.
7. Doors shall be, at a minimum, single doors with a certified fire resistance that is suitable for the Building type that houses the room. The door is to be stamped or labelled with the fire rating. Doors shall be selected to provide a minimum clear door opening of 800 mm, and a minimum clear door height of 1970 mm.
8. Equipment room doors shall be equipped with internal and external handles and a restraint arm to avoid the door closing accidentally.
9. The floor finish shall be 2 mm thick PVC sheet flooring secured to a suitable surface with adhesive and finished to a horizontal surface with a tolerance of 6 mm x 3000 mm in a straight line in any direction. The flooring system shall incorporate edge trims and skirting. Floor coverings shall have appropriate anti-static properties, of a neutral colour and of non-slip qualities.
10. The walls and ceiling shall be covered or painted to create a clean, dust free, environment. The walls and ceiling must be structurally suitable to support the wall and ceiling mounted equipment and fittings and their associated fixings.
11. In situations where independent ceilings are required to enclose the room, a metal stud support frame shall be used. A 12.5 mm fire line wall board is to be installed to the underside of the frame with all joints taped and sealed with two coats of white emulsion paint.

D. Electrical Services

1. Operator Sites, at a minimum, require that all electrical installations are designed and installed in accordance with Bahrain's Electricity & Water Authority (EWA) standards. In addition, all electrical installations should reflect the following:
 - 1) All Operators' electrical installations shall be clearly labelled on the inside of the doors of electricity meters;
 - 2) The Operator's electrical enclosures shall be in proper working order (i.e. not damaged); and
 - 3) All electrical enclosures shall be securely closed and free of any visible damage.
2. The power supplies to the installed equipment shall be provided through on-load local isolating switches or switched fuse connection units. The installation of all electrical services shall include cabling, trunking, cable marking, etc. The Operator must ensure all electrical wiring is in compliance with applicable standards in the Kingdom of Bahrain.
3. An indoor air conditioning (AC) cabinet shall be provided to enclose the distribution board. The cabinet shall be mounted at a maximum height of 1400 mm (to the underside of the cabinet) above finished floor level and should be fitted with a schedule installed inside a protection cover, specifying the use of each circuit breaker. An external generator socket will be outside the door.
4. One twin 1200 mm fluorescent light fitting must be provided at maximum for every 3 x 2 m area. Emergency lighting shall be provided by a combined luminary/non-maintained luminary.
5. The normal lighting shall be controlled from a light switch located on the inside of the equipment housing by the door. Wiring to the fittings shall be carried out using PVC (1.5 mm²) type cable as a minimum, with 6A miniature circuit breaker protection.
6. External lighting, preferably automatic, shall be provided over doors, and shall preferably switch itself on using a proximity circuit.
7. Socket outlets shall be located as shown on the Detail Design Drawings, beside a drop-down table. Wiring to the socket outlets shall be carried out using PVC (2.5 mm²) type cable as a minimum in the perimeter

trunking, with 6A miniature circuit breaker protection, dropping to the outlet positions in PVC conduit.

8. The internal room shall be equipped with an external alarm, which will be wired to an external alarm box located on the Detail Design Drawings.
9. An indoor earthing bar shall be provided and installed adjacent to an indoor electrical cabinet. This shall be the general terminal to which all metalwork and equipment inside the equipment housing shall be bonded. Sites require a 23-way master earth bar for the electrical supply at the distribution box and for the dedicated earth for all equipment installed.
10. The AC power supply shall be derived from a dedicated metered supply or from the distribution network within the existing Building's supply.
11. The source of the mains feed is to be clearly identified on the Detailed Design Drawings and As Built Drawings. The source of the mains feed is to be labelled inside the cabin/ room build with details of floor, room, and panel.
12. An AC power supply cable shall be routed from the above meter position/cabinet and terminate into the indoor electrical cabinet located within the equipment room.
13. Where the power cable may be exposed to damage the cable shall be covered. The power cable must enter the equipment room at a different location different from the feeder cables, i.e., a separate power cable entry point should be provided.
14. It is preferred that the power cable shall enter the room directly below the position of the AC cabinet.

E. Air Conditioning

1. All equipment rooms will have cooling units installed. The design of the equipment housing shall maintain an operational temperature of +20°C to +37°C. The ambient room temperature is to be set to 30° C.
2. Cooling units shall be provided with a high temperature alarm set to 38°C, connected to a krone block. Ventilation units should not encroach on the internal clear dims of the enclosure. The system must be

securely wall mounted externally and capable of nominal cooling capacity of up to 12 KW.

F. Co-Axial Cable Management

1. Where feeder cables have to be carried across a flat roof, a route should be determined which provides the most direct route between the Antenna location and the equipment room that will carry the cables within the specified bending radius.
2. The choice of route shall take into account Site safety and follow a design that locates cable runs a safe working distance from exposed roof edges, avoids trip hazards, fragile roof space, roof light and other on-site hazards where reasonably practicable.
3. The existing roof weathering membrane must be taken into account in the design of the method of attaching the system to the flat roof. Whilst the installation of the cable run is being carried out, particular attention must be paid to the roof at all times so as to ensure that no penetrations are made that may lead to water ingress into the Building.
4. General requirements for horizontal cable runs include:
 - 1) The runs are to be supported with a heavy duty return flange hot-dip galvanized perforated cable tray.
 - 2) Screw fixed to concrete paving slabs with the use of galvanized hangers on polystyrene blocks at 2-meter centres.
 - 3) The width of the cable tray shall be appropriate to the number and size of cables required and their arrangement on the tray.
 - 4) Reducers shall be used when a change in the width is necessary.
 - 5) Where cable runs have to cross rooftop walkways, the cable shall be covered with heavy duty cover and painted black and amber to distinguish hazard.
 - 6) Where cable trays need to be cut, all sharp edges are to be removed or protected in order to avoid any health and safety risks and damage to feeder cables. When a tray needs to be cut, two coats of galvanized paint should be applied immediately on cutting.

5. Where cables are carried across walls, either internally or externally:
 - 1) a cable tray must be used and fixed to the wall at 600 mm centres with the use of galvanized bracket / hangers screws fixed to wall.
 - 2) The width of the cable tray must be appropriate to the number and size of the cables required and their arrangement in the tray.
 - 3) If the cable tray requires a cover to be fitted, the cables must be tie wrapped flat or clamped side by side onto the tray, otherwise the cables shall be stacked on the tray with the use of rem clamps at 600 mm centres.
6. Cantilever arms must be used to carry cables horizontally across suitable walls.
7. All internal cableways must be incombustible and protected against fire in compliance with applicable building regulations.
8. Cable entry points through the outer wall must be made watertight against vertical and horizontal precipitation. The carrying of cables through the roof shall be avoided if at all possible to avoid the risk of water ingress into the Building.
9. Where cables must be carried through fire rated walls the integrity of the fire barrier must be maintained with the use of permanent fire sealing. Metal trays and ladders shall be separated on either side of the fire barrier.

Tenth Access

A. Access for Personnel

1. All structures and Sites must be designed to reduce the risk from accessing elements of the Site to the lowest level that is reasonably practicable, taking into account the characteristics of the Site elements, the likely frequency of access, the tools, equipment and competence available to personnel who may be required to access an element of the Site.
2. The design must provide for the safe access of personnel, plant and equipment during the construction, and subsequent operation and maintenance of the Public Radiocommunications Stations installation.

3. Only suitably qualified personnel are to access the cabling and Antenna.
4. Where permanent access is required, safe access routes shall be indicated on the Detailed Design Drawings.
5. Appropriate measures to prevent unauthorized access to Site or Site equipment must be put in place at time of Site design, construction or modification.

B. Anti-climb Barriers, Boundary Walls, Fences and Gates

1. All Sites that can be accessed by ladder system or by climbing the structure itself shall, where feasible, be provided with an anti-climb barrier specific to the Site.
2. Boundary walls must be of the type and height set out under GDCD requirements.
3. The extent of the fence and position and size of gates must be shown on the Detailed Design Drawings of each Greenfield Site.
4. Any alterations must not compromise the security of the Site.
5. Palisade steelwork must be grade S275 and the fencing must comply with all relevant standards and regulations.
6. When required, a temporary fence must be erected for protection of the general public, animals and property during the construction process. The fence must be erected at all times to protect the construction working area in accordance with all relevant standards and regulations.
7. The Operator must install a secure Site-specific gate type taking account of the location, layout and access constraints of the Site. Gates shall have operable locking mechanisms.
8. The fencing system must be bonded to the Site earth grid. Earth braids shall be used to connect the gates to the main body of the fencing.
9. For Greenfield Sites the fencing of concrete, block work, palisade or other suitable material must be used. For rooftop sites a secure gate, door or hatch shall be locked to prevent unauthorized access to the equipment.

10. The doors and windows to the Building shall be fitted sufficiently to ensure against unauthorized entry with due regard to location.
11. There shall be an intruder alarm system or other means of intruder detection installed in the Site. The intruder detection system shall be linked to the appropriate network monitoring centre.

C. Roof-top Access

1. In addition to the actions required for minimizing work at height set out in Fifth of this Schedule, at the design stage for a rooftop Site consideration must be given to safety signage, designated walkways, lighting, permanent fixed handrail or forms of fall arrest.
2. All access routes for Workers shall be clearly indicated on the roof with both signage and painted borders to indicate safe access routes.
3. Routes for maintenance purposes across roofs shall be designated in the Detailed Design Drawings. The design of routes must ensure that there is:
 - 1) Continuity of edge protection where necessary;
 - 2) Provision of appropriate fall arrest systems, where it is not possible to install necessary permanent edge protection;
 - 3) Unobstructed access, including the provision of bridge-ways for crossing ducts, pipes and other obstructions;
 - 4) Non-slip surfaces;
 - 5) Provision of appropriate fall arrest systems; and
 - 6) Adequate lighting where access at night is required.
4. Existing lighting must be sufficient to enable safe access for the Workers during permitted working hours. Access routes where appropriate shall also incorporate emergency lighting to the standard IS 3217 – Emergency Lighting.
5. Where access routes to equipment or locations where persons are required to work are within two (2) meters of an unprotected edge or

where there is a risk of falling, permanent edge protection must be incorporated into the design and installed during construction.

6. Appropriate measures to prevent unauthorized access to rooftop Sites or Site equipment shall be implemented.

D. Ladder Access

1. Ladders through skylights or openings must be designed to ensure that they provide safe access, including adequate provision for the ladder to extend at least one (1) meter above the landing point or some other adequate handhold and that the ladders do not create a hazard for Building users, block emergency exits or access routes.
2. Where work is required off a ladder, appropriate measures must be put in place to allow the Worker to maintain the points of contact.
3. For fixed ladders the following health and safety requirements must be observed, as a minimum:
 - 1) Where appropriate, fixed ladders shall be installed with a fall arrest system.
 - 2) All fixed ladders shall be in good condition and fixed in accordance with the most up to date version of BS 4211:2005 Specification for Permanently Fixed Ladders.
 - 3) Fixed ladders shall have an anti-climb device in place.
4. Access to rooftops or upper areas of roof using portable ladders shall be avoided where possible and shall only be used when justified following design risk assessment.
5. Where access is designed using portable ladders an adequate safety zone shall be available to ensure that a fall from the ladder will not result in the user falling from the top of the structure. The following minimum safety distances must be available in all directions where personnel could fall from a structure at the footing point for portable ladders:
 - 1) The base of a portable ladder which is less than four (4) meters high must not be placed closer than three (3) meters plus the height of the ladder of any roof edge, e.g., a three and a half (3.5) meter ladder

must be at least six and a half (6.5) meters (3.5+3) from the roof edge); and

- 2) The base of a portable ladders which is more than four (4) meters high must be at least one and a half (1.5) times the height of the top point plus one (1) meter from any roof edge, e.g., a six (6) meter ladder must be at least ten (10) meters (6 x 1.5)+1) from the roof edge.

E. Rope Access and Anchors

1. Sites requiring rope access or abseiling as the only practicable access to build and maintain equipment must be avoided when there is an alternative solution. Rope access and anchor systems shall only be installed as a fall arrest measure where it is difficult to use other more suitable fall arrest measures are not feasible.
2. Wherever construction projects are carried out on Sites which have pre-existing rope access or anchor-based fall arrest systems, the Site design shall be reviewed and, where possible, alternate fall arrest systems must be installed.
3. Where anchor points are required, all fixings shall be applied vertically for roof, and horizontally for wall anchors.
4. Anchorages shall be installed and tested by suitably qualified personnel with a relevant up to date test certification. No anchor bolts are to be used without prior examination within (6) months of the day of use by a competent professional.

F. Road Access

1. All roads and footpaths within and adjacent to the Site must be adequately maintained and kept clear of debris and hazards. Any damage to roads and footpaths caused by Site traffic or otherwise must be made good to the satisfaction of the Ministry of Works, Municipalities Affairs and Urban Planning or other owner.
2. The access road will be set out in the Detailed Design Drawings. The excavation of the access track will describe the formation, which will be compacted, sealed and covered before weather conditions allow deterioration of the ground. Access track shall have sufficient drainage to avoid any debris and rain water washing on to the public roads.

3. Site warning signs shall be placed where appropriate as required under this Regulation and other applicable laws and regulations.
4. Site drawings must show the extent of any new roads, for which planning permission must be obtained.
5. Access roads are to be designed for construction traffic, e.g., concrete delivery trucks and mobile cranes, whilst also providing access for maintenance purposes. Any access track to a Site shall be able to accommodate a mobile crane capable of lifting the relevant Mast into place. The access track shall be a minimum of 3 m wide and 300 mm deep.
6. The road make-up must consist of compacted crushed stone on a sub-base of compacted hard-core, with drain trenches, if required finished with a compacted road base.
7. Where the access track ends in a cul de sac, an adequate turning circle shall be provided to facilitate construction and maintenance traffic.
8. Any extra access/wayleaves required for the construction of the Site shall be organized by the Operator, who will be responsible for the cost, construction and making good of such accesses.

Eleventh Fall Arrest Systems

- A. Fall arrest or fall prevention systems shall only be used when all other forms of collective protective measures (e.g. handrails) have been deemed to be impracticable. The fall arrest components must be suitable for the individual who shall be trained to fit and use them.
- B. Fall arrest systems must be designed with enough clear space below the work position to allow the fall to be arrested safely.
- C. There must also be an effective system in place to rescue anyone whose fall has been arrested by the fall arrest system. This will include a safe system of work to retrieve the casualty as soon as possible to prevent injury from suspension trauma.
- D. The Operator will follow I.S.EN 365:2004 – Personal Protective Equipment Against Falls from a Height – General Requirements for Instructions for Use, Maintenance, Periodic Examination, Repair, Marking

and Packaging – for specific guidance on the use of fall arrest equipment, including instructions for use, maintenance, inspection and repair.

Twelfth Earthworks

- A. The Operator shall indicate the extent of all excavations, indicating the formation level in the Detailed Design Drawings. Soft areas of formation unsuitable for construction shall be removed and filled.
- B. The Operator will indicate the extent of all required excavations in the Detailed Design Drawings. All excavation including, but not limited to, the foundations, drainage and trenches necessary for laying of ducts for electrical supply, fibre cables, lightning protection systems and coaxial cables are to be specified on the Detailed Design Drawings with final location accurately recorded on the As Built Drawings.
- C. Anyone in an excavation deeper than 1.25 meters must be protected from dislodgement of the sides of the excavation. This protection may be in the form of shoring (support for the excavation), battering (slope the excavation) or other suitable means. Notwithstanding this, all excavations (including those shallower than 1.25 meters) and the area in the vicinity of an excavation must, when people have access to them, be as far as is reasonably practicable safe and without risk to health.

Thirteenth Foundations

- A. The size of excavation for the foundations must be kept to the minimum required for the construction of the foundation, allowing for the installation of formwork and support where required. The base of the excavations must be dry and well compacted. The formation level must be protected with concrete blinding. After construction of the foundation, the excavation must be backfilled, compacted and brought up to the levels indicated in the Detailed Design Drawings.
- B. The foundation must be designed to suit the agreed structural service and loading criteria, with due consideration given to the geotechnical and survey details recorded for the particular Site.
- C. The foundation shall be designed to ensure that the structure it carries can be fully utilized in a manner that fully complies with the structures

design specification, the applicable design codes of practice and relevant regulations.

- D. Foundations must not be greater than 1 meter in depth where practicable.
- E. The Detailed Design Drawings must provide the following details of foundation excavation:
 - 1. The concrete grade;
 - 2. Reinforcement steel grade;
 - 3. Base dimensions;
 - 4. All necessary setting out details;
 - 5. Re-bar schedule;
 - 6. Template orientation; and
 - 7. Holding down bolt arrangement for main structure.
- F. Where the findings of the Site survey are such that a shallow foundation is unsuitable, the Operator may consider the use of piled foundations.
- G. When a piling solution is specified, a suitably qualified specialist piling contractor is to be given responsibility for the pile design and installation.
- H. Break out old foundations, beds, drains, etc. must be shown in the Detailed Design Drawings to allow installation of new foundations, sealing off drain ends and removing contaminated earths specified.
- I. Any imported fill material shall be free from contaminants and shall be fit for purpose.
- J. Suitable imported granular material for use as fill under roads and structures shall be natural crushed rock.

Fourteenth Concrete

A. Structural Concrete

1. The Operator is responsible to ensure that all concrete structural elements are designed and built in accordance with the Standard Specifications for Construction Works in the Kingdom and latest version of the relevant Eurocodes as provided for herein.
2. All civil and/or structural engineers employed in the design of concrete structural elements must be accredited by the COEPP with the competence required to deliver telecommunications specific designs.
3. The concrete shall be thoroughly worked around the formwork and reinforcement and shall be thoroughly compacted using mechanical vibration.
4. The concrete shall be protected after placing and cured in accordance with industry standards. Thermal insulation blankets shall be utilized as required to reduce thermal gradients and minimize the risk of heat shrinkage cracking.
5. A blinding layer of concrete must be specified to seal the formation and to provide a clean working area. The concrete blinding must be applied on a compact, level, dry and clean formation.
6. Before the completion of the reinforced concrete works, the surface of the blinding must be thoroughly cleaned.

B. Concrete Grade

1. Concrete grades that are to be used on Site shall be specified on a Site by Site basis. These grades will be shown clearly in the Detailed Design Drawings.
2. All concrete must comply with the Standard Specifications for Construction Works and I.S. EN 206-1: 2002, Concrete – Part 1: Specification, performance, production and conformity.
3. The surface shall be free from voids, honeycombing or other large blemishes. Visible surface of concrete shall be fair faced and visible foundation edges rounded off. Foundation surfaces shall be finished with a 1:40 gradient to allow sufficient water drainage and prevent ponding.

C. Formwork

1. All formwork shall be constructed of timber, sheet metal or other approved material capable of containing, supporting and forming the wet concrete, to the class of finish required, until it has sufficient strength to be self-supporting.
2. The formwork shall be firmly supported, adequately strutted, braced and tied sufficiently to support the weight of the wet concrete and pressure from placing and compacting the concrete.
3. The formwork is to be sufficiently rigid to prevent any undue deflection of the forms out of true line and level and be sufficiently tight to prevent excessive loss of water from the concrete.
4. The size and arrangement of the units of formwork must permit ease of handling, erection and striking (dismantling) on the concrete has sufficiently set.
5. Formwork must be reasonably watertight to prevent leaks that can lead to honeycombing.
6. In order to facilitate the removal of formwork and avoid damage to the concrete as the formwork is struck, the surface of the formwork that must be in contact with the concrete is to be coated with a release agent that prevents the wet concrete strongly adhering to the forms.
7. On formwork to external concrete which will be permanently exposed, all horizontal and vertical joints and formwork ties shall be so arranged that joint lines and formwork tie lines will form a uniform pattern on the face of the concrete.
8. Faces of formwork that will be in contact with concrete shall be free from adhering foreign matters, projecting rails, splits and other defects. All formwork shall be clean and free from standing water, dirt, shavings and other foreign matter.
9. All visible concrete must be placed in smooth formwork.
10. All smooth surfaces must have levelled corners such as tilting fillets generally 50 mm x 50 mm.

The finish must be formed using a smooth finish of uniform texture and appearance.

11. Forms placed against existing concrete must be tight to prevent formation of steps.

12. Care must be taken to ensure forms are struck without disturbing, damaging or overloading the concrete.
13. Before placing concrete, care must be taken to ensure all holding down bolts, pipes or conduits or any other fixtures which are to be built in shall be fixed in their correct positions, and cores and other devices for forming holes shall be held fast by fixing to the formwork or otherwise.

D. Steel Reinforcement

1. A steel reinforcement bar schedule must be provided in the Detailed Design Drawings.
2. All reinforcing steel bars shall be free from loose rust, mill scale, oil or other coating that is liable to weaken the bond between concrete and steel.
3. To ensure that there is correct concrete cover around the reinforcement to protect the steel from corrosion and to provide adequate fire protection, it is necessary to fix spacing to reinforcement bars between the bars and formwork, or face of concrete.
4. The spacers must be securely fixed to avoid displacement during placement and compacting of concrete and must be strong enough to maintain the required cover of concrete.
5. Systems of steel chairs must be used to support the top reinforcement that is cast into pad foundations. The chairs must be substantial enough to support the weight of those spreading and compacting the concrete.
6. Where required, all reinforcement steel must be safely stored in separate stacks clear of ground and labelled for positive identification.
7. Where requested to do so, the Operator will supply to the Authority copies of test certificates confirming that all steel complies with the relevant standard.

Fifteenth Steelwork Specification

A. General

1. The steelwork specification for Masts and associated steelwork structures must be designed to the requirements set out in the most up to date versions of the Standard Specifications for Construction Works and I.S. EN1993 Eurocode 3: Design of steel structures and I.S. EN1994 Eurocode 4: Design of composite steel and concrete structures.
2. Operators must specify steel products that meet European Conformity (CE rated) and comply with other applicable international and national standards.
3. In addition to this, Operators must specify products that are fit for purpose with considerations given to project design requirements, design life, maintenance requirements, manual handling, transport, build and operational access and cost.
4. All steelwork must be designed to suit the on-site environmental conditions. All exposed steelwork shall be galvanized. Where time is a limiting factor, stainless steel may be used but under no circumstance should stainless steel be put into contact with galvanized surfaces.
5. Hollow section steelwork shall be designed to be free draining or capped with a fully welded end plate to prevent the ingress of moisture. Vent holes that do not compromise the structural integrity of a steel section must be included to allow moisture drainage.
6. Vent holes shall be located such as to prevent the ingress and for accumulation of moisture when the member is in the permanent works.
7. Water tightness of the parent structure during erection shall be ensured.
8. All steelwork support details must be designed so as to avoid excessive rotation of Antenna and in particular transmission dishes. All designs must comply with the industrial design limit for rotation of transmission dishes of 0.5 degrees.
9. The cutting of galvanized steelwork on site shall be avoided where practicable. Any cut steelwork must receive two coats of galvanized paint immediately after cutting in accordance with manufacturer's recommendations. Any cut steel work must be noted in the As Built Drawings.

B. Fabrication and Storage

1. Steelwork joint interfaces where plane surfaces are to be mounted together shall be cleaned; zinc drops, pins and protruding unevenness must be removed properly and treated adequately. All bolt connection end plates must be welded flush to structural members. A gap of 0.5 mm maximum, when the bolts are tightened, at the perimeter of the plate only is permissible provided that it is sealed against the ingress of moisture during erection with a suitable material, e.g., clear silicone sealant. The gap must not influence the verticality of the structure.
2. Traces of flame cutting shall be ground away prior to galvanizing. Narrow cavities between steel parts must not be left open. They shall be closed by welding as specified on the Detailed Design Drawings.
3. All steelwork shall be labelled in accordance with the marking system shown on the fabrication drawings.
4. Unless noted otherwise, the steelwork shall be stored off Site prior to inclusion in the permanent works. Steelwork shall be stored to ensure that dirt, water or other deleterious materials do not contaminate it and that it will not be subject to distortion or damage.

C. Erection

1. Steel structures must be erected in accordance with the supplier's guidelines and the Detailed Design Drawings.
2. A layer of non-shrink grout shall be used to seal connections between steel endplates and concrete. The grout shall be applied between the top face of the concrete and the underside of the steelwork.
3. Where touch up is required on Site, zinc rich paint shall be applied in accordance with the manufacturer's instructions.
4. Any safety systems involved in erection must be installed, tested and certified in accordance with the manufacturer's instruction and regulations.

D. Dissimilar Metals

1. Stainless steel connections to copper are acceptable in terms of galvanic corrosion.
2. Direct connections between copper and galvanized steelwork and stainless steel and galvanized steelwork are unacceptable, as galvanic corrosion will occur in the presence of an electrolyte.
3. Brass to copper connections is acceptable provided that an appropriate corrosion inhibitor is applied to the joint. The inhibitor shall be reapplied annually when the connection inspected.
4. Anodized aluminium to galvanized steelwork connections is, in general, acceptable; however, care must be taken during transportation, fitting and use to ensure that the anodized layer is not damaged.
5. Anodized aluminium should not be used in salt bearing environments, e.g., a marine climate to avoid electrolytic coupling, galvanized steel requires a good ventilated area.
6. The installation shall be so designed as to ensure that water will not be retained in any of the steelwork members.

E. Fitting of Antenna Support Steelwork

1. The integrity of the wall fabric shall determine the type of fixing selected. A full survey of the wall must be carried out where there is any doubt as to the makeup of the wall fabric in order that the correct fixing can be specified.
2. Mounting brackets fixed to an existing Building must be designed so as to ensure that no damage will be caused to the fabric of the Building or to its weather protection. It is the responsibility of the Operator to ensure that the Building is structurally capable of carrying the necessary fixings.
3. All fixings must be designed to avoid any risk of water ingress, degradation of Building fabric and waterproofing membranes. Any damage to waterproofing membranes must be immediately protected against immediate water ingress and made good.
4. Where the Antenna is to be attached directly to the wall, wall mounting swivel brackets shall be used in order to correctly align the Antenna.

5. If not attached directly to the wall, the Antenna can be attached to a pole, which is attached to existing steel supports with the use of clamps or welded onto existing steelwork internally.
6. Only structurally suitable structures approved by a competent certified or chartered structural engineer are to be used to fix equipment.

F. Ballast Poles

1. A ballast pole can be used for supporting an Antenna where it is not possible to fix directly to the structure. This consists of a braced pole supported on a counter-weighted steel platform. Concrete paving slabs can be used to act as the ballast. It is the responsibility of the Operator to ensure the structural capacity of the existing roof is safe to carry the ballast pole.
2. Should the Operator utilize a ballast pole, it must ensure that the ballast pole rests on a bed of high density insulation in order to avoid any risks of damage to the roofing fabric.

Sixteenth Ducting

A. General

1. The installation of ducting and associated works must be carried in accordance to the Telecommunications Infrastructure Deployment Guidelines. The duct laying will normally include the excavation, laying in a sand surround and back filling, together with the supply of temporary stop ends and draw-wires.
2. Where ducting is retro-fitted in the compound, the new route shall be treated for vegetation. Additional anti-weed cloth shall be placed over the new duct route, before finally covering to the original finish standard (e.g. gravel, stone, asphalt, etc.)
3. Ducting is to be 100 mm, 125 mm or 150 mm plastic duct pipe with bed and surround of 100 mm of sand.
4. For ducting under roadways or trafficked areas lean mix concrete must be used. Minimum cover must be 600 mm or 900 mm under roads or car park.
5. Backfill to trench in roadway or trafficked area must be laid in compacted layers of no greater than 300 mm.
6. Backfill to grassed margin must be as dug, and to be reinstated as before.
7. Shoring to open trenches must be provided where necessary. Expansion foam and /or duct caps must be installed to prevent rodent entry.
8. All ducts must be recorded in As Built Drawings.

B. Underground Ducts

1. Every effort must be made to coordinate with the Relevant Bodies and written confirmation of approval of works must be obtained in accordance to the Telecommunications Infrastructure Guidelines. The health and safety of the members of the general public must be paramount in such cases.

2. The ducts must be positioned as shown in the Detailed Design Drawings, which may be modified by the designer and/or contractor as Site conditions dictate. Any changes must be recorded on the As Built Drawings.
3. Inspection chambers are required, located at changes in direction. Where electrical cables are to be laid directly in the ground they must be laid in the same trench with a minimum clearance of 500 mm from any duct and be protected by a sand layer.
4. Warning tapes must be attached directly on the duct or laid 250 mm above the cables showing the nature of the duct / cable. Tapes are to be continuous; colour coded with gauge polythene and must be located below the surface along the route of incoming electrical supply.
5. Trenches must be as small as practicable with vertical sides. Mud, rock, projections, boulders and hard spots must be removed from trench bottom.
6. The trench will be filled and compacted after the laying of ducts and cables. Where the trenches are situated in arable land, the top 250 mm will be topsoil. All excavations on highway or paved surfaces must be reinstated. No visible setting on the finished surface is acceptable.
7. All ducts must have one number draw cord installed. The ends of the ducts must be sealed. The positions of the ends of the ducts shall be clearly marked, using a coloured maker peg or similar method, at ground level.
8. The ducts must be of smooth 110 mm diameter PVC. The ducts shall meet industry acceptance requirements. If the ducts are placed under the road, the minimum depth is 1100 mm.

C. Concrete Cable Troughs

The Operator may specify prefabricated concrete cable troughs with reinforced lids fit for purpose. The Detailed Design Drawings must specify the size and type of lid. The bottom of the trench must be level and well compacted. The prefabricated elements must be installed to the manufacturer's recommendations.

D. Inspection Chambers / Draw Pits

1. The Operator must specify inspection and/or access chambers constructed on a reinforced concrete base slab. When constructed in brickwork the chambers must be rendered and coated with a waterproofing emulsion both internally and externally.
2. Depending on the location of the chambers the cover must either be galvanized steel or, when located in areas likely to be trafficked by heavy vehicles, cast iron cover must be used in accordance with all relevant standards and laws and regulations.
3. When required, earth pits must be either concrete or plastic set into slab or at ground level. They shall have a secure cover and shall allow access for the testing and inspection of the lightning protective / earthing network. The inspection chambers must be free draining.

E. Drainage

1. Where the Site investigation report and survey information indicates grounds water problems, or where existing land drainage is present, the Operator shall provide a suitable drainage. The design information provided in the Detailed Design Drawings shall include invert levels, gradients, out fall, and soak away locations.
2. All drains must be laid in accordance with the related specifications of the Ministry of Works, Municipalities Affairs and Urban Planning and manufacturers' recommendations. The Operator will require the Site provider's approval prior to detailing a soak-away pit. The pit shall be constructed inside the Site boundary. The pit shall be of sufficient size to accommodate the drainage requirements.

Seventeenth Underground Utilities

- A. All design and build works that involve ground excavations require ground investigation surveys to avoid dangers to and from Underground Utilities.
- B. Structures such as Masts, Equipment Rooms and other associated outdoor units shall not be erected over Underground Utilities because this may be associated with additional risks for construction workers and could prevent future access to those services.

- C. If it is not possible to avoid erecting a structure over an Underground Utility, arrangements must be made with the relevant utility/service provider to relocate the service if this is practicable.
- D. Any request for the relocation of Underground Utilities must allow for sufficient time for the relevant utility/service providers to evaluate such proposals and carry out their work.
- E. Other options to relocating the Underground Utilities may, after consultation with the concerned utility, include:
 - 1. Repositioning structures or parts of structures to ensure that contact with Underground Utilities is avoided whilst the work is being carried out.
 - 2. Arranging for the supply contained within the Underground Utilities to be disconnected during the work.
 - 3. If neither of these options is practicable, then choosing methods to avoid contact, such as using ground beams to protect the service(s).

Eighteenth Site Maintenance

A. Site Perimeter and Compound

- 1. Boundary walls shall be reasonably maintained and secured from unauthorized entry. Access gates must be in proper working order (i.e. latches, locks, gate receivers, hinges, etc.) to comply with BS 1722: Fences.
- 2. Warning signs visible to members of the general public must be installed indicating that the enclosed area is a restricted area.
- 3. Equipment mechanical noise and vibration that causes nuisance to host Buildings and the surrounding environment must to comply with the noise level interfering with ordinary comfort or amenity: BS 8233:1999 – Sound insulation and noise reduction for buildings.
- 4. Objects that may cause a slip, trip or injury must not to be left on the Site.

5. No rubbish or waste materials should be left on the Site or its surroundings.
6. The compound surface of a Site shall be level and compacted so as to avoid any trip hazards. There should be no protruding steelwork that could cause a potential hazard. Any overhead steelwork shall not protrude below 2.1 meters, and there shall be no steelwork protruding from the ground as this could cause a potential trip hazard.
7. Earth pit covers must be secure, in the proper position and unlikely to be damaged by vehicles to comply with BS 6651: Lightning Protection of Structures.

B. Bunding and Containment of Stored Hydrocarbons

- A. In order to prevent accidental spills of oils into the environment, all fuel or oil storage must be contained in appropriate impermeable secondary containment (bund). The volume of the bund should be 110% of the maximum storage capacity of the largest tank or 25% of the total tank volume, whichever is greater.
- B. The secondary containment must contain all fuel storage, filling or dispensing points and fuel lines and must be an enclosed bund.
- C. Where it is necessary to run fuel lines outside the bund, the fuel lines must be protected from damage, and there must be appropriate secondary containment to contain spills. An appropriate drip tray must be formed beneath the pipe work and associated equipment. It must be capable of containing the contents of the fuel in the pipe work from the non-return valve and associated equipment and if necessary, covered to prevent the ingress of rain and unwanted matter.
- D. Sufficient access must be provided to permit any liquid contained in the drip tray to be extracted safely and in a manner so as to prevent liquid being lost to the environment. Joints in pipe work must be kept to a minimum. Consideration must be given to installation of bund alarms where justified based on risk assessment.

C. Landscaping

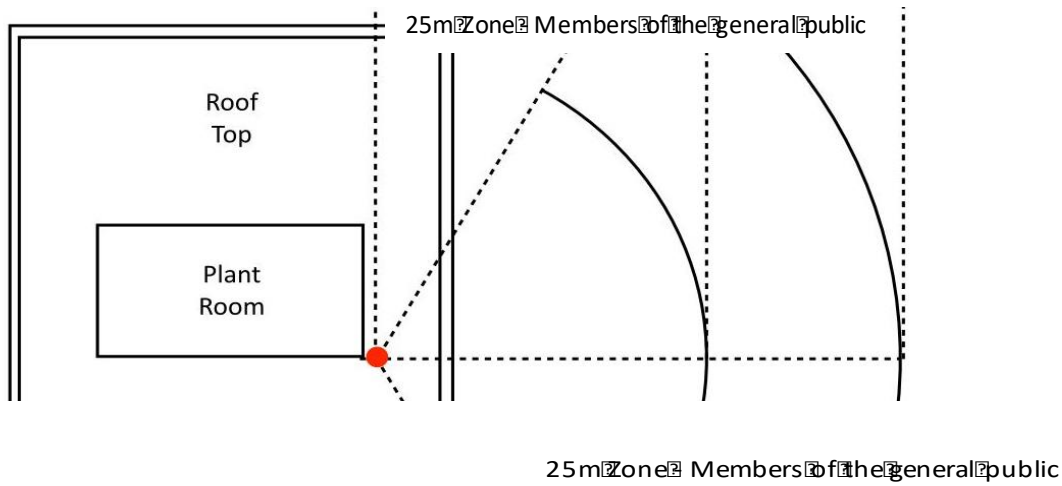
1. The landscaping area is to be defined in the Detailed Design Drawings.

2. Provision must be made for the repair of the damage caused to grass areas and/or vegetation during the execution of the works, or the storage of materials.
3. The Detailed Design Drawings must detail the requirements for tree planting inside and outside the fenced area. The scope of works shall be agreed with the Site provider and Site acquisition. These agreed details must be made available for the purpose of permit application.
4. No organic material may appear on finished surfaces and the entire area should be weed free.
5. Operators will keep the Site area clear of shrubbery, plants, trees, and other vegetation that is not a part of planned landscaping. All cleared material will be taken from Site and disposed of at an approved location.
6. All existing landscape and neighbouring landscapes are to be adequately protected and preserved during the entire build process. Care should be taken not to damage or remove protected trees and landscapes.
7. Where there is a requirement to temporarily change a landscape it shall be done only with Site provider approval. The landscape is to be returned to a state agreed to the Site provider's satisfaction. A planting schedule will be provided if re-instatement works are required.

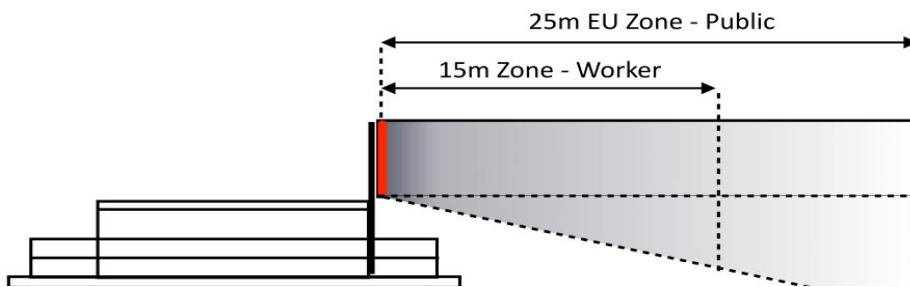
Nineteenth ICNIRP Compliance

A. Antenna Placement

1. With respect to radio frequency exposure limitations, Operators must endeavour to establish "safe-by-design" restriction distances between all transmitting Antennas and expected presence of Workers and members of the general public.
2. In particular, Antenna placement must preserve a minimum distances 15 meter zone for Workers and 25 meter zone for members of the general public, as indicated in the diagrams below.



Pictorial Representation of ICNIRF



3. These restriction distances, may be superseded with a Site specific test, on-site with the final equipment by a properly certified engineer, to confirm that the radio frequency radiation is in compliance with ICNIRP guidelines.

B. Exclusion Zones

1. Sites shall be designed so that entry of persons into any Exclusion Zone is prevented. Preferably this shall be by keeping Antennas at specific heights (approximately two meters and twenty centimetres (2.2 meters) above level of walkway) above adjacent roofs or, where this is not possible by providing physical barriers or signage to warn against access into the Exclusion Zone. Roof markings alone, should not be relied upon to denote Exclusion Zones.

2. Under no circumstances shall an Exclusion Zone be created on a general access area. A general access area is an area to which it is possible to gain access, either by foot or by unsecured ladder.
3. Care shall be taken to avoid placing equipment into other Operator's Exclusion Zones, or creating Exclusion Zones around other Operator's equipment
4. Hazard warning safety signs detailing the extent of the Exclusion Zones shall be clearly displayed at all operational Sites which include Antenna installations as required under Paragraphs (D), (E) and (F) of Nineteenth of this Schedule.

C. Access Areas

The Operator will delimit areas within and surrounding the Site to identify whether the area should meet the ICNIRP exposure limitations for Workers and members of the general public. There are three typical types of access areas defined: Controlled Access Areas; Restricted Access Areas; and general public access areas.

D. ICNIRP compliance obligations for Controlled Access Areas include the following:

1. Inside the Controlled Access Area, ICNIRP exposure limitations for Workers must be observed. Outside the Controlled Access Area, ICNIRP exposure limitations for members of the general public must be observed.
2. All Antennas must be positioned so that the Exclusion Zone does not block or extend onto the major access routes of the structure. In the case of Lattice Masts, the access route within the Mast must meet ICNIRP exposure limitations for Workers.
3. All Workers will use electromagnetic field strength monitors and/or established safe working practices whilst gaining access to Antennas.
4. There is no requirement for posted Exclusion Zones if the Site meets the "safe-by-design" distances for Antenna placement. However, non-ionizing radiation warning signs will be required at the point(s) of entry into the Controlled Access Area.

5. Operators must certify that all existing Operators present on the Site meet the ICNIRP guidelines for exposure limitations for members of the general public.

E. ICNIRP compliance obligations for Restricted Access Areas include the following:

1. Inside the Restricted Access Area, ICNIRP exposure limitations for Workers must be observed. Outside the Restricted Access Area, ICNIRP exposure limitations for members of the general public must be observed.
2. All Antennas must be positioned so that the Exclusion Zone does not block or extend onto the major access routes of the structure.
3. The Antennas should be installed whenever practical as to maintain “safe-by-design” distances. For Sites where the ‘safe-by-design’ criteria is not practical or possible one needs to separate the Exclusion Zone with painted lines or a physical barrier.
4. Warning signage must be placed at the boundary edge of the Site.
5. All Restricted Access Areas must be individually assessed for potential risks to ensure adequate access control measures are in place.
6. Site providers, their employees and outside contractors, who in the likelihood of their work may enter Exclusion Zones, are to be provided with the adequate safety information, containing, the Site drawings, restricted areas, compliance boundaries, the signage explanation and the outage procedures. This information shall be made available to their employees and outside contractors who in the likelihood of their work may enter Exclusion Zones.

F. ICNIRP compliance obligations for general public access areas include the following:

1. The Antennas should be installed whenever practical as per “safe-by-design” distances.
2. For Sites where the “safe-by-design” criteria are not practical or possible a suitable physical barrier with appropriate signage must be erected to prevent inadvertent access by members of the general public into an Exclusion Zone. If neither is possible, then the Antenna

will require a permanent and/or mechanical means of limiting the output power to a level where the ICNIRP exposure limitations for members of the general public will be achievable at the closest accessible point.

3. Site providers, their employees and outside contractors, who in the likelihood of their work may enter Exclusion Zones, are to be provided with the adequate safety information, containing, the Site drawings, restricted areas, compliance boundaries, the signage explanation and the outage procedures. This information shall be made available to their employees and outside contractors who in the likelihood of their work may enter Exclusion Zones.

Twentieth Fire Safety

- A. All installations and structures must be designed to reduce the risk of fire outbreak, control the propagation of fire in the event of an outbreak of fire, not impede the exit of persons in the event of a fire and be completely compliant with the requirements of Bahrain's GDCD.
- B. All installations in existing, larger Buildings shall be designed and constructed to ensure that the installation meets the requirements of any existing building fire safety design or certification and the requirements of this Regulation, as a minimum.
- C. Installations shall not be installed in any location in a Building which would impede or put at risk the safe exit of persons from the Building. Installations shall not be installed in protected corridors or stairwells unless adequate compartmentation or equivalent fire engineering provisions is put in place to maintain the protection of these corridors or stairwells.
- D. Rooftop installations shall be designed and installed to ensure that an outbreak of fire in the installation will not put the Building or roof coverings at risk of fire propagation.
- E. Provision shall be made at design stage to ensure that there is method to alert rooftop Workers and adequate means of escape to a place of safety outside the Building, from the roof in case of fire in the Building.
- F. All electrical installations shall be installed in accordance with the requirements set out in Paragraph (D) of Ninth of this Schedule.

- G. Internal linings of Equipment Rooms and rooms in larger Buildings must be constructed of materials which restrict the propagation of fire by having a low rate of surface spread of flame, a low rate of heat release or a rate of fire growth and a resistance to ignition. Internal linings shall be at least Class B – s3, d2 as defined in I.S. EN 13501-1:2002, Fire classification of construction products and building elements, Part 1- Classification using data from reaction to fire tests of higher. Where required, part of the surface of a wall in a room, not to exceed half the floor area of the room, may be of a class lower than Class B – s3, d2, but cannot be lower than Class D – s3, d2.
- H. All walls, floors and ceilings of standalone cabins which personnel may enter shall be designed and constructed to have at least 15 minutes resistance to fire in terms of load bearing capacity, structural integrity, and insulation.
- I. All rooms in which equipment is to be installed in existing larger Buildings shall be designed and constructed as a fire separated compartment with all walls, doors, floors and ceilings having at least sixty (60) minutes resistance to fire in terms of load bearing capacity, structural integrity, and insulation. Where installations are being installed in existing rooms the compartmentation shall be assessed to ensure it meets these requirements.
- J. All installations and Sites shall be designed and constructed to ensure that the spread of fire from the installation to neighbouring property is prevented by appropriate separation or fire resisting construction or by placing barriers or firebreaks between the combustible areas of installation and neighbouring property.
- K. Installations shall be designed and constructed so that there is adequate provision for access for fire appliances and for such other facilities as may be reasonably required to assist the fire service.

SCHEDULE 10

PRINCIPLES AND PROCESSES OF THE RECTIFICATION

First Purpose and Scope

The rectification process is intended to reasonably address the requirements and concerns of the various stakeholders in the telecommunications sector, including those of Residents, Relevant Bodies and Operators, to ensure that the proposed solutions and outcomes of the process balance the needs and expectations of all relevant parties involved.

Second Principles

- A. The rectification process will be implemented by the Authority under the framework of Order No. 45 of 2015 and this Schedule.
- B. The rectification process is based upon the following principles:
1. Transparency: The Authority will implement the rectification process in a manner that ensures:
 - 1) Coordination with Relevant Bodies;
 - 2) Operators are able to actively and effectively participate in the rectification process;
 - 3) Timeframes for compliance are reasonable and sufficient to achieve the objectives of the rectification process; and
 - 4) Stakeholders are regularly informed of the state of progress of the rectification process.
 2. Predictability: The Authority will implement the rectification process to ensure that orders and instructions issued by it are consistent with this Regulation.
 3. Protection of public health and safety: The Authority will conduct the rectification process in the manner it determines is best calculated to ensure that Public Radiocommunications Stations:

- 1) Do not create health and safety risks for persons or property;
 - 2) Do not exceed the Non-Ionizing Emissions Limits produced by Electromagnetic Fields (hereinafter referred to as the “EMF emissions limits”) as set forth in Order No. 4 of 2009;
 - 3) Are structurally sound and adhere to technical, health and safety standards defined by the Authority in this Regulation and other applicable guidelines; and
 - 4) Are deployed such that their support structures, including rooftops and other Buildings or structures, are capable of supporting the relevant load.
4. Limiting unnecessary duplication of stations and promotion of sharing: The Authority will conduct the rectification process and issue decisions and instructions to Operators, following coordination with other Relevant Bodies, to rectify the current status of Public Radiocommunications Stations deployments and to increase the shared use of such stations, especially those within close proximity to each other; and
5. Limiting negative visual effects: The Authority will implement the rectification process to ensure that the designs of Legacy Stations comport with the preferred design options by zone as detailed in Schedule 11 of this Regulation in order to limit the negative effect on visual appearance, surrounding environment, and Residents to the lowest level possible.

Third Timeline for the Rectification Process

- A. The Authority, in coordination with the Relevant Bodies, shall issue a decision establishing the timeline for conducting the rectification process which shall include, at minimum, the following elements:
1. Divide the process into as many phases as the Authority considers necessary to successfully rectify Legacy Stations in accordance with the provisions of this Regulation;
 2. The number or percentage of Legacy Stations that shall be rectified in each phase of the process;
 3. The timeline for the completion of each Stage of each phase of the rectification process as defined in Paragraph C of Third of this Schedule;

4. The compliance thresholds for each phase of the process as a percentage of Affected Stations identified for a specific phase.
- B. The Authority, in coordination with the Relevant Bodies, may amend the provisions of the decision promulgated under Paragraph A of Third of this Schedule if it deems justifiable to better achieve the objectives of the rectification process.
 - C. Each phase of the rectification process will be conducted in the following stages:
 1. Stage 1: Submission of Rectification Application, in which the Operators submit applications for those Legacy Stations identified by the Authority for the relevant phase;
 2. Stage 2: Review of Rectification Applications, in which the Authority confirms the classification by the Operator of the Legacy Station in question and determines if remedial action is warranted;
 3. Stage 3: Propose Remedial Actions, in which the Operator shall propose remedial action(s) to enable the Affected Station to become compliant with the requirements set forth in Order No. 45 of 2015 and this Regulation; and
 4. Stage 4: Review of Revised Rectification, in which the Authority and other Relevant Bodies will review the proposed remedial actions and, if warranted, issue the relevant permits and certificates in accordance with the Application Process for the Installation and Upgrading of Public Radiocommunications Stations described in Schedule 2 of this Regulation.

Fourth Classification of Legacy Stations

- A. Operators must classify each of the Legacy Stations during Stage 1 of the rectification process to determine which are to be considered as an Affected Station and thus subject to the rectification process as set forth in Order No. 45 of 2015 and in this Regulation.
- B. To determine which Legacy Stations will be considered Affected Stations, a two-step review process to classify stations will be used as described in Paragraphs C and D of Fourth of this Schedule.
- C. First, Legacy Stations are to be classified into the following categories:

Category	Scenario	Review process
1	Legacy Stations used for (i) military, (ii) national security, (iii) emergency and (iv) medical purposes.	Not an Affected Station
2	Legacy Stations used for services other than Telecommunications (e.g., Broadcasting).	Not an Affected Station
3	Legacy Stations in restricted Sites, including in premises controlled by the Royal Court and other potentially sensitive areas.	An Affected Station, but subject to an <i>Ad hoc</i> review process as determined by the Authority.
4	Legacy Stations under ongoing litigation processes or which are subject to judicial rulings.	An Affected Station, but subject to <i>Ad hoc</i> review process as determined by the Authority.
5	All other Legacy Stations that are not Categorised in 1- 4.	An Affected Station subject to the Application Process for the Installation and Upgrading of Public Radiocommunications Stations set forth under this Regulation.

D. Second, Category 5 stations identified in Paragraph C of Fourth of this Schedule, shall be further subdivided into the following classification:

Category	Description	Review process
5-A	Affected Stations for which a building permit had not been issued and are inconsistent with the provisions of the Building Law, or not in compliance with zone classification requirements or the electromagnetic emission limits.	Application Process for the Installation and Upgrading of Public Radiocommunications Stations Required
5-B	Affected Stations that (i) have been issued a Building Permit and (ii) the structure is proven unable to sustain resulting loads and poses risks for health and safety and property.	Application Process for the Installation and Upgrading of Public Radiocommunications Stations Required
5-C	Affected stations that (i) have been issued a Building Permit and all other relevant certificates, but (ii) do not comport with zoning requirements in Schedule 11.	Application Process for the Installation and Upgrading of Public Radiocommunications Stations Required
5-D	Affected Stations that (i) do not have a Building Permit, but (ii) comply with Building Law, Zoning Regulations, EMF emissions limits and (iii) comport with zoning requirements in Schedule 11.	Application Process for the Installation and Upgrading of Public Radiocommunications Stations Required

5-E	Affected stations that (i) have been issued a Building Permit and all other relevant certificates, and (ii) comport with zoning requirements in Schedule 11.	Authority shall issue Final Permit within five (5) days of concluding Stage 2 review
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Fifth

Applications of Fees and Fines to Rectification Application

- A. The Authority will seek to ensure that no additional fees will be payable by an Operator for the filing of a Rectification Application, where it can be demonstrated that the Operator has already paid the required fees to all Relevant Bodies for such permits and/or certificates in the past.
- B. Notwithstanding the provisions of Article 23 of the Building Regulation Law, the Authority will collaborate with the Relevant Bodies to decide whether any applicable fines associated with the deployment of an Affected Station may be subject to waiver in cases where:
1. The Operator, or a group of Operators, that owns or operates the Affected Station has fully complied with all requirements set forth under this Regulation to the satisfaction of the Authority and the Relevant Bodies;
 2. The Affected Station or associated support structure must be decommissioned as a consequence of remedial action undertaken in the rectification process; or
 3. Other cases where the Relevant Bodies and the Authority may deem a waiver is warranted.

Sixth

Implementation of the Rectification Process

A. Stage 1: Submission of Rectification Applications

1. The Authority will identify the Legacy Stations subject to review under each phase of the rectification process at least two weeks prior to the date of commencement of Stage 1 of the phase in question.
2. Operators shall file complete Rectification Applications for the Legacy Stations identified for each of the phases established pursuant to this Schedule via the RIMS.

3. Rectification Applications shall include the detailed information specified by the Authority.
4. Operators shall each file no more than four (4) Rectification Applications per day.
5. If an Operator fails to file rectification applications for any of its respective Legacy Stations identified for a given phase of the rectification process within the specified timeframe, the Authority may take enforcement actions under the provisions of Chapter VIII of this Regulation.

B. Stage 2: Review of Rectification Applications

1. The Authority, after providing payment confirmation of applicable fees, will review each Rectification Application submitted to ensure that it is compliant with the provisions of this Schedule and that it includes all information specified by the Authority.
2. If the Authority determines that a Rectification Application is incomplete, or that further clarification is required, the Authority will direct the Operator to file supplemental information within five (5) working days.
3. If the Authority determines that the Rectification Application for an Affected Station is complete, the Authority will verify whether such station has been properly classified by the Operator in accordance with the provisions of Paragraphs C and D of Sixth of this Schedule. If the Authority deems that the Operator has misclassified the Affected Station, the Authority will direct the Operator to provide clarification within five (5) working days.
4. The Authority will determine on a case-by-case basis the review process until all stations, designed according to Categories 3 and 4 and to the provisions of Fourth of this Schedule, are rectified.
5. For Affected Stations confirmed as Category 5A, 5B, 5C and 5D, the Authority will inform the Operator that it must propose appropriate remedial actions in accordance with Clause 1 of Paragraph C of Sixth of this Schedule.
6. For Affected Stations confirmed as Category 5E no remedial actions will be required, and the Authority will issue the Final Permit within five (5) days of making such classification.

C. Stage 3: Proposed Remedial Actions

1. In cases where the Authority determines remedial action is necessary, the Operator must propose remedial actions consistent with Schedule 11 of this Regulation. Remedial actions may include Site sharing with other Operators, modifying the Affected Station or engaging in any other actions to achieve compliance with this Regulation.
2. Once an Operator has identified the proposed remedial action for an Affected Station, it must submit a revised Rectification Application to the Authority. The revised Rectification Application must be filed within the timeframe set out pursuant to Schedule 10 of this Regulation and include all the relevant information specified by the Authority. An Operator may not submit more than four (4) Rectification Applications in any one day.

D. Stage 4: Review of Revised Rectification

1. The Authority will review the revised Rectification Application in accordance with the Application Process for the Installation and Upgrading of Public Radiocommunications Stations Process as described in Schedule 2 of this Regulation.
2. In particular, the Authority will ensure that the remedial actions proposed in the revised Rectification Application comply with the preferred design options set forth in Schedule 11 of this Regulation.

E. Status Reports

To ensure transparency of the rectification process, the Authority will publish quarterly status reports that will provide information on the following issues:

- 1) Assessment of compliance with the proposed rectification process timeline;
- 2) Aggregate number of Public Radiocommunications Stations being processed; and
- 3) Aggregate number of Public Radiocommunications Stations that have been rectified per Municipality.

SCHEDULE 11

PREFERRED PUBLIC RADIOCOMMUNICATIONS STATION DESIGN OPTIONS FOR THE RECTIFICATION PROCESS

- A. The following table summarizes the preferred design options for Public Radiocommunications Stations, categorized by zones for each type of station applicable under this Regulation.
- B. The Authority shall publish a Zoning Map identifying the various zones described in the table below to assist Operators on the process of submitting Rectification Applications for Affected Stations. This Zoning Map shall be made available through the RIMS.

Zone	Type of Station					
	Camouflaged or Stealth Solution	Wall Mounts / Stub Mast	Small Scale Station / Street-works	Mono-pole	Rooftop Mast	Lattice or Guyed Mast
Places of special nature	Allowed	Allowed	Allowed	Conditionally allowed	Conditionally allowed	Not Allowed
<200m from Major Roads	Allowed	Allowed	Allowed	Conditionally allowed	Conditionally allowed	Not Allowed
Residential Areas	Allowed	Allowed	Allowed	Conditionally allowed	Conditionally allowed	Conditionally allowed
Commercial Districts	Allowed	Allowed	Allowed	Conditionally allowed	Conditionally allowed	Not Allowed
Industrial Areas	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed
Rural Locations/ Low Populated Area	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed

Note: “<200 m from Major Road” means less than 200 meters from the centre of a Major Road.

C. The types of Stations that may be conditionally allowed shall not fall within the areas specified by the Authority in the RIMS or any other method determined by the Authority. This is to ensure consistency of these Stations with the public scenery.⁶

⁶ Replaced by virtue of Resolution No. (5) of 2023 amending the Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations Regulation issued by Resolution No. (10) of 2018.