

Award of Spectrum in the C-band (3400 – 3700 MHz)

A consultation issued by the
Telecommunications Regulatory Authority

8 December 2020

Ref: SPECT/1220/086

Purpose: to outline proposals for the award of C-band spectrum for the holders of Individual Mobile Telecommunications Licences

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Instructions for submitting a response

The Telecommunications Regulatory Authority ('the Authority') invites comments on this consultation document from all interested parties and, in particular, the holders of Individual Mobile Telecommunications Licences in the Kingdom of Bahrain.

Comments should be submitted no later than 4pm on 07 January 2021.

Responses should be sent to the Authority preferably by email (or by fax or post) to the attention of:

Technical & Operations Director
spectrum@tra.org.bh
Telecommunications Regulatory Authority
P.O. Box 10353, Manama, Kingdom of Bahrain
Fax: +973 1753 2125

Responses should include:

1. the name of the company/institution/association etc.;
2. the name of the principal contact person;
3. full contact details (physical address, telephone number, fax number and e-mail address); and
4. in the case of responses from individuals, name and contact details.

The Authority expects respondents to provide a response to the questions raised throughout this consultation document (the consolidated list of questions can be found in Annex A of this document). The Authority also invites respondents to substantiate their responses, wherever possible by providing factual evidence to support the responses.

The Authority will evaluate a request for confidentiality in line with relevant legal provisions and the Authority's published guidance¹ on the treatment of confidential and non-confidential information.

Respondents are required to mark clearly any information included in their submission that is considered confidential. Where such confidential information is included, respondents are required to provide both a confidential and a non-confidential version of their submission. If a part or a whole submission is marked confidential, reasons should be provided. The Authority may publish or refrain from publishing any document or submission at its sole discretion.

Once the Authority has received and considered responses to this consultative document, it will publish a public consultation report on its website with a general review of the responses received, as well as the Authority's decision and the reasoning thereof.

¹ The Authority, "A Guidance Paper issued by the Telecommunications Regulatory Authority on its treatment of Confidential and Non-confidential Information", Guidance Paper No. 2 of 2007, 10 September 2007, at http://www.tra.bh/en/pdf/Confidentiality_Guidelines_Final.pdf

Glossary of abbreviations and definitions

Term	Definition
5G	Fifth generation mobile technologies
[The] Authority	Telecommunications Regulatory Authority of the Kingdom of Bahrain
Batelco	Bahrain Telecommunications Company
BHD	Bahraini Dinar
FDD	Frequency Division Duplex
FWA	Fixed Wireless Access
IMTL	Individual Mobile Telecommunications Licence
Lot	An item offered in the spectrum award, consisting of a frequency block of a determined bandwidth within a given frequency range
MHz	Megahertz
MNO	Mobile Network Operator
NFL	National Fixed Licence
NFWFL	National Fixed Wireless Frequency Licence
NTP4	Fourth National Telecommunications Plan
NTP5	Fifth National Telecommunications Plan
TDD	Time Division Duplex
Telecommunications Law	Telecommunications Law of the Kingdom of Bahrain, promulgated by Legislative Decree No. 48 of 2002
STC	Saudi Telecommunications Company

1 Introduction

This consultation document sets out, for comment by interested parties, the Authority's proposed approach for the award of spectrum in the C-band to the holders of Individual Mobile Telecommunications Licences in the Kingdom of Bahrain.

The spectrum to be awarded comprises 300 MHz, located between 3400 MHz and 3700 MHz. This spectrum has been internationally identified as key for the rollout of 5G enhanced mobile services, and this award has been designed against the background of a desire to efficiently allocate spectrum to enable MNOs to steadily continue their 5G network developments.

This consultation document is structured as follows.

- Section 2 sets out the background to this spectrum award along with the legal framework for the award.
- Section 3 outlines the Authority's proposed spectrum award design with rationales.
- Section 4 describes the licensing framework proposed for this spectrum award.

In addition:

- Annex A lists all questions posed in this consultation document to facilitate responses.
- Annex B contains the draft frequency licence which would be used for this award.
- Annex C shows the draft application form (Request for Expression of Interest).

2 Background and legal framework

Since 2002, the telecommunications market in the Kingdom of Bahrain has undergone a significant transformation. In October 2002, Legislative Decree No 48 of 2002 promulgated the Telecommunications Law of the Kingdom of Bahrain (the “Telecommunications Law”) which enabled the liberalization of the telecommunications sector and the formation of the TRA. In 2017, the Telecommunications Law was slightly amended to enable the implementation the policies of the Fourth National Telecommunications Plan (“NTP4”). The implementation of new technologies and the regulatory framework surrounding them have been further influenced by the policies of the Fifth National Telecommunications Plan (“NTP5”).

2.1 Legal basis for award

The Telecommunications Law provided for the liberalization of the sector and established the Authority as an independent regulatory body with responsibility for overseeing the sector. In accordance with the provisions of the Telecommunications Law, the Authority has a direct role in promoting competition and administering the grant of Telecommunications Licences and Frequency Licences.

Article 3 of the Telecommunications Law describes the duties and powers of the Authority, including the requirement for the Authority, when carrying out its duties, to do so in a non-discriminatory and transparent manner and in the way best calculated to:

1. protect the interests of subscribers and users;
2. promote effective and fair competition; and
3. ensure, when assessing applications involving provisions of Public Telecommunications Services, that any applicant, or any person who is assigned the responsibility of provisions of such services, will be capable of providing that service.

Article 15 of the Telecommunications Law requires the Minister with responsibility for the Telecommunications sector to publish, periodically, the National Telecommunications Plans approved by the Council of Ministers. Pursuant to this Article, NTP4 was issued on 8 May 2016 and was promulgated as Resolution 29 of 2016 of the Council of Ministers. Further, NTP5 was approved by the Council of Ministers on 26 October 2020.

Article 3(e) of the Telecommunications Law further requires the Authority in the fulfilment of its duties and the exercise of its power to act “in a manner that is consistent with the objectives of the National Plan for Telecommunications; provided that this shall not be construed to derogate from the independence of the Authority in accordance with the provisions of this Law”.

Finally, Articles 24-37 of the Telecommunications Law set out the framework under which the Authority should grant service licences (whether individual or class licences) and clarify that the operation of a telecommunications networks is prohibited without such a licence. Furthermore, Articles 43-45 set out the requirements to hold frequency licences and the framework for the award of these.

NTP5 has specified policies under which further spectrum must be awarded. In particular, the following paragraphs² apply.

“112. The Government also recognises that further policy measures will need to be taken if it is to meet its vision. These policy measures are set out in the remainder of this Plan and have, at their heart, the following objectives: [...]

² Note that these are only selected paragraphs from each of the sections cited.

b. To ensure that the majority of the Kingdom's population benefit from being able to access mobile 5G networks, with sufficient spectrum having been assigned to the licensed mobile service providers and measures taken to ensure that such advanced mobile networks can be deployed efficiently and effectively in the Kingdom, with network infrastructure being shared where it is economically efficient to do so and with developing a regulatory framework that supports innovation and investment. [...]

d. To ensure that consumers truly benefit from the infrastructure deployed and are able to take informed decisions in relation to offered services, while making sure that consumer groups with special requirements are supported. [...]

f. To ensure that the legal and regulatory framework supports the objectives set out above and is fit for purpose in today's telecommunications sector."

"127. Therefore, Government Policy in [the area of Mobile Competition, Spectrum and 5G] is as follows:

a. During the period of this NTP5, the majority of consumers in the Kingdom should have access to 5G networks and services.

b. In return for a commitment from the mobile network operators to agree roll out obligations at least consistent with the above policy objective, the Government, in consultation with the Authority, shall identify and take forward relevant measures to support and incentivise the required investment, with such measures potentially including incentives relating to Spectrum Usage Right Fees for those spectrum bands assigned for the purposes of MNOs deploying 5G networks. [...]

d. The Authority will produce forecasts of the demand for spectrum for Mobile Telecommunications services for the following five-year period. The Authority will in coordination with the Radiocommunication Authority, and supported by these forecasts, continue to identify and release spectrum to meet this growing demand. In particular, the Authority, in consultation with the Government, shall identify spectrum which can be used to promote innovation in emerging 5G and IoT use cases and shall determine the most appropriate way of making this spectrum available to ensure that innovation can rapidly take place.

e. The Authority shall not issue new individual mobile telecommunications licences during the period of NTP5. However, should there be significant change in the mobile market or extenuating circumstances, then the Government may direct the Authority to review the market to assess whether the existing market structure remains appropriate. Notwithstanding this commitment, the Authority may issue a MVNO licence for the purpose of providing M2M and IoT services or specialised low latency services using 5G networks, if this is deemed in the Kingdom's interest to do so. [...]"

2.2 Current situation

In 2007, Menatelecom (which was acquired by STC in October 2017) and Zain Bahrain were successful in winning the rights for a 15-year term to 90 MHz each in the C-band via auction, for the purposes of providing fixed wireless services. These frequency licenses were coupled with individual licenses for National Fixed Wireless Telecommunications Services. This meant that both licensees were only able to provide fixed wireless services (that is, services with no mobility functions, such as WiMax and fixed 4G-LTE).

The Authority wishes to enable the rollout of 5G services in Bahrain at the earliest possible time. In addition, the potential rollout of a nationwide 5G network was considered an important objective for Bahrain in order to be one of the first countries in the region to have fully commercial 5G networks and their accompanying products and services readily available to consumers. The Authority believes it is opportune to provide equal opportunity for all MNOs to roll-out 5G services, so as to allow for competition at the network, services and products level. This was to be achieved by ensuring that all 3 MNOs have symmetric spectrum holdings allotted to them in the C-band.

To achieve this, in April 2019 the Authority granted temporary frequency licenses in the C-band to enable the early deployment of 5G mobile networks and services. These licenses were given in the following manner:

- With STC and Zain already having frequency licenses for the use of 90 MHz in the C-band for National Fixed Wireless Telecommunications Services, the Authority amended those licenses by allowing them to be used either under the NFWFL or the IMTL.
- Batelco, being the only MNO to not have any allocation in the C-band, was granted a new temporary frequency license, allowing it to use 100 MHz for mobile services.
- To match the spectrum allotments and guarantee an equal playing field for all 3 MNOs, the Authority temporarily awarded an additional 10 MHz to each of STC and Zain, therefore increasing the spectrum holdings to a total of contiguous 100 MHz spectrum in the C-band for each MNO.

The temporary licences (of 100 MHz to Batelco and 10 MHz to STC and Zain) are due to expire at the end of December 2020³, and the Authority is now desirous of awarding the C-band spectrum on a longer-term basis.

2.3 Current and future use of C-band spectrum

As set out above, MNOs have previously used the C-band spectrum to run fixed wireless access (FWA) services.

It is important that the spectrum is awarded in a way that causes minimum disruption to their existing networks. The C-band is used in LTE, LTE-Advanced and 5G networks to provide high bandwidth capacity, generally in urban and suburban areas. The GSMA has carried out studies in the use of C-band spectrum and recommends that a contiguous allocation of at least 80 MHz is required to enable MNOs to offer high quality 5G mobile broadband services⁴.

³ The 90 MHz holdings by STC and Zain are due to expire in January 2022; this is discussed later in this consultation.

⁴ GSMA 2018: 5G Spectrum GSMA Public Policy Position, <https://www.gsma.com/spectrum/wp-content/uploads/2018/12/5G-Spectrum-Positions-1.pdf>

3 Award design

The award for C-band spectrum must reflect the Authority's objectives, while considering the requirements of MNOs. In determining the proposed award, the Authority has examined the demand for spectrum, the need for a competitive award, and how the award should take place.

3.1 Amount of spectrum required

The TRA must balance the demand for spectrum against the supply. In making this decision the TRA has considered the following.

- There is 300 MHz of C-band spectrum available for award, in the range 3400 – 3700 MHz.
- The GSMA has stated (as cited above) that any operator will require at least 80 MHz of contiguous spectrum to run an effective 5G network. The GSMA also recognises there is a smaller benefit gain moving from 100 MHz to 120 MHz than there is moving from 80 MHz to 100 MHz.
- MNOs currently have access to 100 MHz of C-band spectrum each.
- Any increase in spectrum holdings by one MNO will necessarily lead to reductions in spectrum holdings by at least one other MNO. This would be contrary to the Authority's aims to avoid asymmetric holdings of spectrum.
- The TRA has an objective to promote sustainable competition. One way of doing this is to ensure that all MNOs have access to equivalent spectrum holdings in the C-band.

Given these factors, it is intuitive that the default situation would be that each MNO is awarded 100 MHz of C-band spectrum.

3.2 Position of lots in the band

As stated in the introduction to this consultation, MNOs are currently using the 3.5 GHz band to provide mobile services. The TRA proposes to maintain the positions of the current holdings of spectrum so that MNOs can continue to use their existing networks with no required reconfiguration.

These holdings will therefore be as follows.

MNO	Spectrum lot
Zain	3400 – 3500 MHz
STC	3500 – 3600 MHz
Batelco	3600 – 3700 MHz

Q1: Do you agree with the approach of maintaining the existing spectrum positions in the C-band?

Q2: Do you consider any of the three lots to have greater or lesser value than other lots (due to, for example, availability of equipment, susceptibility to interference, or similar issues)? Please justify any differences in value.

3.3 Method of award

The Authority has concluded that the appropriate award mechanism is through a **direct (administrative) award**. The following factors have influenced this choice.

- All MNOs are to be awarded equal spectrum holdings which are capable of providing a good quality 5G service.
- There is to be no competitive element deciding on which MNOs are granted which spectrum bands.
- Coverage obligations have been defined by the Authority's objectives (through NTP5) and are not dependent on proposals from MNOs.
- The Authority does not wish to place unnecessary burdens on MNOs in responding to the award.

Under a direct award, each MNO will be granted a frequency licence for 100 MHz of contiguous C-band spectrum, subject to that MNO accepting the conditions of the licence and the application form (REOI) terms.

Q3: Do you agree with the TRA's proposal for a direct award of 100 MHz of spectrum to each MNO, with MNOs maintaining their current spectrum holdings?

3.4 Logistical factors

The direct award will be carried out by MNOs responding to a Request for an Expression of Interest (REOI). This will ask MNOs to confirm that they will abide by the conditions of the frequency licence, including but not limited to payment of applicable fees, service licensing conditions, and so on.

A draft REOI is included as Annex C to this consultation

3.5 Timing of award

The provisional timetable for this award is as follows:

- 08 December 2020: publication of this consultation document;
- 07 January 2021: deadline for submission of responses to this consultation document;
- 11 March 2021: publication of the Authority's report of the responses received to this consultation document and the Authority's decision and the Invitation for Applications;
- 16 March 2021: start of period for submission of applications;
- 18 March 2021: deadline for submission of applications; and
- 23 March 2021: announcement of award results.

This timetable is indicative only, and subject to change if the Authority considers this appropriate.

Q4: Do you have any comment on the details of the award design?

4 Licensing framework

This spectrum award will be held under the current licensing framework in Bahrain, with separate service and frequency licences. It will be a prerequisite for any bidder to hold both an appropriate individual mobile telecommunications service licence and a service licence that allows for the provision of fixed telecommunications services, and each will be granted a frequency licence relating to its specific holding. A draft example licence is included as Annex B to this consultation, but elements of this licence are subject to change following responses to this consultation.

This section highlights key questions relating to the licensing of C-band spectrum.

4.1 Period of licence

When determining the period of the licence the Authority must ensure that MNOs are provided with sufficient certainty to enable them to make significant investments in network equipment and gain a suitable return on investment.

The Authority has reviewed frequency licence periods in a number of benchmarked countries⁵, and has found that licence terms vary between 8.8 years (tied in with the expiry of the associated Individual Telecommunications Licence) in Qatar and indefinite licences⁶ for the UK. The typical licence period across the countries studied is 15 years. In Europe the new European Electronic Communications Code⁷ specifies a licence duration of at least 15 years plus 5 years right of extension.

Given the foregoing, and in order to encourage investment in 5G networks, the Authority proposes to set the licence term for a period of a minimum of 15 years.

Q5: Do you agree with the proposed licence period? Is there investment that you have planned that you would not carry out if the licence period were set at less than 15 years? If so, please give details.

4.1.1 Implementation alongside existing licences

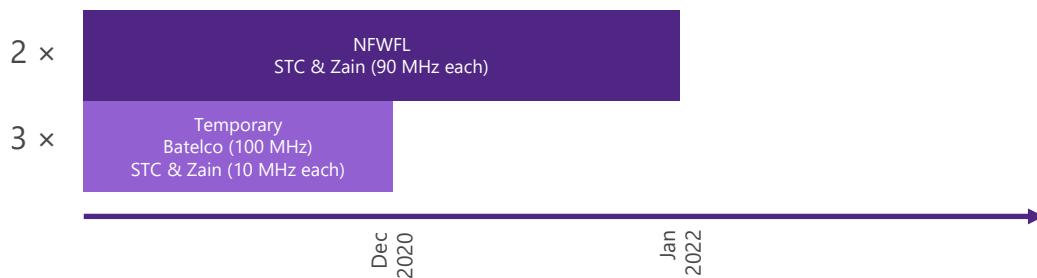
As set out in the background section above, parts of the C-band spectrum are already in use – partially as a legacy of existing national fixed wireless licences, and partially from temporary licences. This has resulted in a situation where different licences have a different expiry date⁸, as shown below.

⁵ Comparing against countries which have awarded the C-band spectrum already, including Australia, Austria, Belgium, Finland, France, Germany, Hong Kong, Italy, Latvia, New Zealand, Qatar, Russia, Saudi Arabia, Singapore, South Korea, Spain, Taiwan, the UK and the US.

⁶ In practise, these are subject to regular review and can be terminated with five years' written notice.

⁷ See Article 49, paragraph 2, available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L1972>

⁸ These expiry dates do not include, for the NFWFL, a potential renewal for a ten-year period. This renewal is "subject to such terms and conditions as may be specified by the Authority acting in accordance with the Telecommunications Law in its reasonable discretion".



It is best practice⁹ to align the end date of all spectrum licences in a single band so that future awards will have more flexibility in terms of the packaging of lots.

The Authority notes that the spectrum awarded under the national fixed wireless licences in 2007 has had its usage conditions varied, with the mobility restrictions lifted until the end of the licence period.

To give certainty to the all spectrum holders, to simplify the licencing process, and to ensure that the award for C-band spectrum can proceed in a timely manner, the Authority proposes:

- The existing national fixed wireless frequency licences should be cut short to expire at the same time as the temporary licences.
- The frequency licences underpinning the non-temporary spectrum awarded in the C-band should expire at the same time as the temporary frequency licences and the new frequency licences be issued one day after the date that the temporary licences expire.
- All new frequency licences will run under identical terms and for the same duration of 15 years.

The Authority notes that the current holders of NFWFLs will forfeit some time of use of these frequency licences, between the date of award of the new licences and 8 January 2022. The holders of these licences will be compensated an amount equivalent to a pro-rated amount of the spectrum usage rights fee paid for the frequency licence. This compensation will be deducted from the spectrum usage rights fees for the new licence.

To achieve this, the REoI sent to MNOs who currently hold a NFWFL will contain an agreement that the NFWFL shall be revoked, and this will detail the compensation due to that operator.

Q6: Do you agree with the approach to synchronise the start and end of frequency licences in the C-band? If you do not agree, how will this decision affect your business plans and planned roll-out of services?

Q7: For MNOs with existing NFWFLs only:

- Are you willing to surrender your NFWFL so that the award for C-band spectrum can take place?
- Do you agree with the proposed compensation method?

4.2 Technology and service neutrality

The Authority does not propose to specify which technology should be used on the C-band spectrum, nor which service should be provided using it, as long as the licensee holds the appropriate licence covering the provision of the service and operation of the network. The frequency licences will not impose any constraints that will limit the technology that can be deployed, and the services provided by the licensee beyond those

⁹ See, for example, paragraph 22 of the RSPG BEREC Report on Competition, available at https://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg10_351_transitional_issues.pdf

necessary to minimise the risk of interference. This will ensure that any technology upgrades can be implemented based on changes in market demand and not limited in scope or timing by the licence conditions.

This is consistent with the policy objectives in Bahrain of ensuring efficient use of spectrum and supporting the development of advanced technologies.

4.3 Service obligations

Although the Authority proposes not to specify which technology should be used on the C-band spectrum, the Authority notes that the award of this spectrum is an important step in ensuring the availability of 5G services, and it therefore proposes to place obligations on any MNO that is awarded this spectrum. These obligations do not need to be met using the C-band spectrum (they may be met using any spectrum already licensed to MNOs).

Obligations will be set to meet the Authority's objectives from the award. It is proposed that:

- MNOs will be obliged to cover at least 50% of the population of Bahrain with a 5G service by the end of the period of NTP5.

Q8: Do you agree with the proposed coverage obligation? If not, please provide details.

Q9: In your view, what should be the nature of the measures mentioned in NTP-5 (point 127-b)?

4.4 Spectrum fees

One of the Authority's objectives from this award is that "Bahrain [should] directly benefit financially from any spectrum award, at levels that properly reflect the value of this scarce national resource"¹⁰. As discussed in ITU-D study groups, "spectrum is a scarce resource for which there is no organized market. Charging for it is one way of encouraging operators to use it efficiently"¹¹. By setting a price reflecting the value of spectrum to operators, the Authority aims to ensure that operators will not claim spectrum that will then go unused, meaning that these charges are designed to ensure optimum use¹² of spectrum.

The Authority has analysed the appropriate price for spectrum to be included in this award. As stated above, this price should, in the first instance, reflect the value of spectrum to MNOs.

The Authority has carried out three studies on the value of the C-band in Bahrain: two benchmarking studies (using direct and adjusted benchmarking) and an economic model using an avoided cost methodology. These valuation methodologies have been used by regulators worldwide¹³ when determining an appropriate value of spectrum.

¹⁰ Taken from NTP4, paragraph 31(b), available at https://www.tra.org.bh/Media/images/National%20Telecommunications%20Plans/NTP4_EnglishTranslation_May20161.pdf

¹¹ ITU-D Study Groups Document 1/129-E, 12 July 2000

¹² This is consistent, for example, with EU Directive 97/13/CE which states that " Member States may, where scarce resources are to be used, allow their national regulatory authorities to impose charges which reflect the need to ensure the optimal use of these resources".

¹³ Including, for example, in New Zealand, the UK, Saudi Arabia, Australia, France, Thailand, Mexico, Malaysia, Kosovo, South Africa, Egypt, India, Germany and Taiwan.

- Direct benchmarking examines the prices paid at auctions¹⁴ around the world for C-band spectrum, and uses these values to derive a range of results. Further analysis is carried out by restricting the exercise to subsets of countries with similar characteristics to Bahrain, or geographic proximity. Outliers are removed to give a fair estimated value.
- Adjusted benchmarking considers the ratio in value between the 2.6 GHz band and the 3.5 GHz band in a number of countries; this ratio is then applied to Bahrain using the values obtained in the 2.6 GHz award. This allows us to capture Bahrain-specific factors but relies on a reduced size of dataset.
- Avoided cost modelling creates an economic model of the investment decisions of MNOs when deciding between additional spectrum or additional infrastructure investment. To meet demand, MNOs must dimension their networks for a certain capacity, and this can be attained through either additional equipment or new spectrum. The value of the spectrum is the cost saved – or avoided – in infrastructure investment.

Combining these methods, the Authority has calculated an appropriate value of spectrum. Based on this analysis, the Authority proposes that the spectrum usage rights fee will be set at BHD 2,030,640.75 per 100 MHz. This is in addition to annual fees chargeable on this spectrum.

Q10: Do you agree with the proposed price for spectrum? If not, please provide detailed evidence showing your valuation of the spectrum.

4.5 Other conditions

There are a number of other conditions which are imposed on the frequency licence. A draft frequency licence is included alongside this consultation document.

Q11: Do you have any other comments over the contents of the draft frequency licence?

Q12: Do you have any other comments over the contents of this consultation document?

¹⁴ Auctions are used as these reveal the market price of spectrum, rather than reflecting regulatory objectives in direct awards.

Annex A: List of consultation questions

Q1: Do you agree with the approach of maintaining the existing spectrum positions in the C-band?

Q2: Do you consider any of the three lots to have greater or lesser value than other lots (due to, for example, availability of equipment, susceptibility to interference, or similar issues)? Please justify any differences in value.

Q3: Do you agree with the TRA's proposal for a direct award of 100 MHz of spectrum to each MNO, with MNOs maintaining their current spectrum holdings?

Q4: Do you have any other comments on the details of the award design?

Q5: Do you agree with the proposed licence period? Is there investment that you have planned that you would not carry out if the licence period were set at less than 15 years? If so, please give details. Q6: Do you agree with the approach to synchronise the start and end of frequency licences in the C-band? If you do not agree, how will this decision affect your business plans and planned roll-out of services?

Q7: For MNOs with existing NFWFLs only:

- Is it correct that you no longer provide FWA service in the C-band?
- Are you willing to surrender your NFWFL so that the award for C-band spectrum can take place?
- Do you agree with the proposed compensation method?

Q8: Do you agree with the proposed coverage obligation? If not, please provide details.

Q9: In your view, what should be the nature of the measures mentioned in NTP-5 (point 127-b)?

Q10: Do you accept the proposed price for spectrum? If not, please provide detailed evidence showing your valuation of the spectrum.

Q11: Do you have any other comments over the contents of the draft frequency licence?

Q12: Do you have any other comments over the contents of this consultation document?

Annex B: Proposed frequency licence

Frequency Licence granted to

XYZ

**by the Telecommunications Regulatory Authority under articles 25,
29, 39(b)(1) and 44 of Legislative Decree No. 48 of 2002
promulgating the Telecommunications Law**

Document Number:

Date of issue of this Licence:

Approved by the General Director:

1. GRANT OF LICENCE

- 1.1 The Telecommunications Authority (the "Authority") hereby grants this Frequency Licence pursuant to Article 44 of the Telecommunications Law promulgated by Legislative Decree No. 48 of 2002 (the "Telecommunications Law"), by which the Authority assigns, without creating a precedent and without prejudice to future applications, to [...], Commercial Registration No. [...] (the "Licensee") the radio frequency spectrum described in Schedule A (the "Assigned Radio Frequency Spectrum").
- 1.2 The Licensee shall not use the Assigned Radio Frequency Spectrum unless the Licensee holds a valid and current Telecommunications Licence issued pursuant to Article 29 of the Telecommunications Law and such licence authorises the provision of the telecommunications services for which the Assigned Radio Frequency Spectrum may lawfully be used. Provided that in the event that the Telecommunications Licence authorising the Licensee to provide the telecommunications services is for any reason whatsoever revoked or expired, then this Frequency Licence shall be revoked ipso facto with or without notice by the Authority; the assignment of the radio frequency spectrum made under Clause 1.1 is withdrawn; and the Licensee is no longer authorised to use the Assigned Radio Frequency Spectrum.
- 1.3 This licence shall be subject to the provisions herein stated, the Telecommunications Law, any applicable legal instruments issued thereunder and the terms and conditions of the Telecommunications Licences held by the Licensee.

2. DEFINITIONS

- 2.1 For the purposes of this Frequency Licence:

A meaning or definition provided for any word, phrase or expression under the Telecommunications Law shall also be applicable to such word, phrase or expression in this Frequency Licence; unless the context requires otherwise;

The following terms and expressions shall have the following meanings unless the context requires otherwise:

"Affiliate" means, as used with respect to any person, any other person directly or indirectly controlling, controlled by, or under common control with, that person. In the case where one person owns, directly or indirectly, 50% or more of the share capital, voting rights, securities or other ownership interest of another person, both such persons shall be deemed an affiliate;

"Applicable legal instrument" means a legal instrument that is promulgated by the Authority in accordance with Article 3 subsection (c) and (f) of the Telecommunications Law, including any amendments that may be adopted by the Authority from time to time;

"Control" means, as applied to any person, the possession, directly or indirectly, of the power to direct or cause the direction of the management of that person, whether through ownership, voting or other ownership interest, whether by control or otherwise and **"controlling"** and **"controlled"** shall be construed accordingly;

"Effective date" means the date referred to in Section 11.1;

"Force majeure" means any event beyond the reasonable control of the Licensee, including but not limited to fire, storm, earthquake, flood or other extreme weather conditions, acts of God, failure or shortage of power supplies, lightning, war, military operations, civil unrest, acts of terrorism or riot;

"Harmful interference" means the effect of unwanted energy due to one or a combination of emissions, radiations inductions, conductions or another electromagnetic effect which endangers the functioning of a radionavigation service or other safety services or seriously degrades, obstructs or repeatedly interrupts any radiocommunication service operating in accordance with applicable regulations, licences or determinations of any frequency licensing authority within the Kingdom or in any other jurisdiction;

"Licensed area" means the territory of the Kingdom of Bahrain;

"Spectrum Usage Rights Fee" means a non-recurring fee imposed by the Authority for the right to use assigned frequencies which may be paid by the assignee in a single lump sum or in instalments, as determined by the Authority, and including the fee set out in Schedule B to this Frequency Licence;

"Type approved" means telecommunications equipment which is compliant with the type approval process; and

"Type approval" means the process for establishing that telecommunications equipment complies with the technical standards issued by Authority, or by international standard setting bodies designated from time to time by the Authority, in accordance with article 38 of the Telecommunications Law.

3 EXERCISE OF RIGHTS; SUBCONTRACTING

Without prejudice to Articles 50.1 and 50.2 of the Telecommunications Law and subject to Section 7 of this Frequency Licence, the Licensee may, with the prior written approval of the Authority, exercise its rights under this Frequency Licence through an Affiliate or sub-contract to another person; provided, however, that the Licensee shall remain the effective user of the Assigned Radio Frequency Spectrum and shall continue to be fully liable for any obligation arising in relation to the provision of any such licensed activity. The Authority may revoke its approval at any time by providing reasonable advance notice to the Licensee in writing. The prior written approval of the Authority shall not be required if such Affiliate is and remains wholly-owned by the Licensee, provided always that the Authority shall be notified of such arrangement.

4 USE OF RADIO FREQUENCY SPECTRUM

- 4.1 Without derogating from Article 49 of the Telecommunications Law, the Licensee shall comply with any requirements, conditions or safeguards that may be established by the Authority in any applicable legal instruments to prevent harmful interference, promote interoperability or ensure the safe operation of the network. The Licensee shall also take all necessary steps to ensure that the use of the Assigned Radio Frequency Spectrum shall not cause damage or harmful interference to existing radiocommunications stations and telecommunications networks lawfully operating in the same geographical area and/or radio frequency band and in other geographical areas and/or radio frequency bands.
- 4.2 The Licensee shall take all appropriate measures to ensure that the radiocommunications stations and equipment it operates are adequately protected from harmful interference that may be caused by radiocommunications stations and telecommunications networks lawfully operating in the same geographical area and/or radio frequency band and in other geographical areas and/or radio frequency bands.
- 4.3 The Licensee shall ensure that non-ionising radiation emissions from each radio installation which it operates under its licence(s) are within the limits set by the International Commission for Non-Ionising Radiation Protection (ICNIRP) and shall ensure that it complies with any future radiation emission standards which may be set by the ICNIRP, or have been or will be adopted in the Kingdom of Bahrain.
- 4.4 The Licensee shall at all times ensure that the Assigned Radio Frequency Spectrum is used efficiently and in accordance with the requirements of any Applicable legal instruments. If the Authority considers that the spectrum, the rights of use of which is awarded by virtue of this Licence, is not being utilised efficiently, it will communicate its view in writing to the Licensee and the Licensee will, within such periods as the Authority may consider appropriate in the circumstances, take all necessary remedial steps and follow the Authority's directions to address the Authority's concerns. In the event that in the Authority's sole view, the Licensee fails to take the required remedial action, the Authority will consider this as a material breach of this Licence.
- 4.5 Where required for the efficient use of radio frequency spectrum in the licensed area, the Licensee shall comply with any Applicable legal instrument issued by the Authority pertaining to migration from one band of frequencies to another or within the same band.
- 4.6 The Licensee shall co-operate with the Authority for the purposes of assisting the Authority in coordinating and managing the efficient use of radio frequencies in relation to neighbouring countries, including but not limited to the provision of information to the Authority, and the reduction of emission levels of radiocommunications stations.
- 4.7 Without derogating from the Licensee's ultimate rights under Section 14 of this Frequency Licence, the Licensee shall take all reasonably necessary steps to ensure that any harmful interference is resolved amicably between the Licensee and the other party or parties within a reasonable time of the date on which the harmful interference is detected and brought to the relevant party's or parties' attention. In any event resolution should occur in:
 - (a) no more than ten (10) days if the party or parties are located within the Kingdom; or
 - (b) no more than fifteen (15) days if the party or one of the parties is located outside the Kingdom. However, if the timetable for resolution of harmful interference specified in an international agreement to which the Kingdom is a party is less than fifteen (15) days, then the number of days specified in the international agreement shall prevail.

The Licensee shall notify the Authority in writing as soon as practicable after it becomes aware of any harmful interference problems and shall keep the Authority informed of any steps taken to resolve such interference and the results obtained thereafter.

- 4.8 Where harmful interference problems have not been resolved between the Licensee and the other party or parties as detailed in Section 4.7 above, the Licensee or the interfered with party or parties may refer the matter to the Authority in writing.
- 4.9 Without prejudice to Article 72 of the Telecommunications Law, the Authority shall investigate the matter and issue a decision, determination or order with respect thereto.

- 4.10 The Authority may direct the Licensee to take such actions as may be necessary to resolve any harmful interference, and the Licensee shall take the directed actions without delay.
- 4.11 The Licensee shall not permit or suffer any person to use its radiocommunications equipment comprising any of its radiocommunications stations unless the person is under the Control of, and is authorised by, the Licensee.

5. COVERAGE REQUIREMENTS.

- 5.1 The Licensee shall ensure the provision of mobile radiocommunications services using 5G technologies to over 50% of the population of Bahrain within 3 years of licence issue. In addition to the spectrum covered by this licence, other frequency bands licensed to the Licensee can be used to meet these coverage requirements.

6 INTEROPERABILITY AND TECHNICAL STANDARDS

The Licensee shall comply with any Applicable legal instrument and technical specifications issued by the Authority in order to ensure interoperability of the licensed services (as defined in the operating licence) and its telecommunications facilities with telecommunications services and telecommunications networks provided by other licensees to the extent that it is technically feasible.

7 RADIOCOMMUNICATIONS EQUIPMENT

- 7.1 The Licensee shall ensure that the radiocommunications equipment comprising any of its radiocommunications stations:
- (a) is type approved by the Authority and at all times complies with all applicable emission standards and technical specifications or requirements specified by the Authority, from time to time, in relation thereto; and
 - (b) is designed and constructed, used and maintained so as not to cause any harmful interference even when in use in compliance with the Telecommunications Law any applicable legal instruments.
- 7.2 Where applicable, the Licensee shall ensure that the operating licences and the radiocommunications stations and equipment comprised therein that are operated within the Assigned Radio Frequency Spectrum are not used for unlawful purposes or misused in any way where the Licensee has knowledge or should reasonably have knowledge of such use or misuse.
- 7.3 The Licensee shall ensure that all persons using its radiocommunications equipment comprised in any of its radiocommunications stations are made aware of the relevant terms of this Frequency Licence together with any other relevant licence and comply with such terms.

8 RADIO FREQUENCY SPECTRUM TRADING

The Licensee shall not, except with the prior written approval of the Authority, assign, transfer, trade, sell, lease, pool or otherwise dispose of the whole or any part of the rights, privileges, duties and/or obligations under this Frequency Licence to any person or persons.

9 RADIO FREQUENCY SPECTRUM SHARING

The Licensee shall not, except with the prior written approval of the Authority or in accordance with Section 3 of this Frequency Licence, authorise any person or persons to operate a radiocommunications station and/or telecommunications network within the Assigned Radio Frequency Spectrum.

10 REQUIREMENT TO PROVIDE INFORMATION AND INSPECTION

- 10.1 Without derogating from Articles 53 and 77 of the Telecommunications Law, the Licensee is required to maintain such information as will enable the Authority to carry out its functions under the Telecommunications Law in such manner as the Authority may from time to time request. The Authority shall have the right to request the Licensee to submit periodic reports, statistics and other data as well as request additional information in order to effectively supervise and enforce the terms of this Frequency Licence.
- 10.2 Without derogating from Article 77 of the Telecommunications Law, the Licensee shall permit a person authorised by the Authority to have access to any of its radiocommunications stations and to inspect or test its radiocommunications equipment at a reasonable time, for the purposes of verifying compliance with the terms of the licence or for the purpose of investigating sources of harmful radiocommunications interference.

11 FREQUENCY LICENCE FEES

- 11.1 The annual fee for the frequencies listed under Schedule A of this Frequency Licence shall be calculated according to the Schedule of Fees Regulation approved by the Board of the Authority.
- 11.2 The applicable Spectrum Usage Rights Fee shall be paid in accordance with Schedule B of this Frequency Licence.

12 DURATION AND RENEWAL

- 12.1 The effective date of this Frequency Licence is [...], and it shall, subject to Section 1.2 above, be valid for a term of fifteen (15) years.
- 12.2 Irrespective of whether the Licensee is still using the Assigned Radio Frequency Spectrum, the Authority shall, at any time prior to the expiry of this Frequency Licence, have the right to commence any procedure necessary for the re-assignment of the right of use of the Assigned Frequency Spectrum upon the expiry of this Frequency Licence.

13 MODIFICATION, REVOCATION AND TERMINATION

- 13.1 Without derogating from Article 51 of the Telecommunications Law, this Frequency Licence may be modified in any of the following ways at any time:
- (a) by written agreement between the Authority and the Licensee; or
 - (b) by the Authority if the Authority determines that such modification is necessary to make the conditions of the licence consistent with conditions being imposed generally in respect of all licences issued in the same category, for the purpose of ensuring fair competition between licensees in that category or to the extent necessitated by technological development, provided that the Authority shall have consulted with the Licensee and shall have provided reasonable notice of the proposed modification.
- 13.2 The Authority may revoke this Frequency Licence in accordance with Article 51 of the Telecommunications Law.
- 13.3 This Frequency Licence shall terminate automatically upon the expiry of its term.

14 FORCE MAJEURE

- 14.1 If the Licensee is prevented from performing any of its obligations under this Frequency Licence because of force majeure the Licensee shall notify the Authority of the obligations it is prevented from performing as soon as practicable after it becomes aware or reasonably should become aware of such force majeure.
- 14.2 The Authority shall suspend those obligations referenced to under Section 14.1 above and the Licensee will not be liable to perform those obligations, for so long as the force majeure continues. only if and to the extent that the inability to perform could not have been prevented by taking steps specifically required under the law or this Frequency Licence or other reasonable precautions and the inability cannot reasonably be circumvented by the Licensee at its expense through the use of alternate sources, work-around plans or other means.

15 DISPUTE RESOLUTION

- 15.1 All disputes between the Licensee and the Authority arising out of this Frequency Licence shall be resolved in accordance with the provisions of Chapter XVI of the Telecommunications Law.
- 15.2 The courts of the Kingdom of Bahrain shall have jurisdiction over disputes between the Licensee and other parties licensed by the Authority in connection with telecommunications activities which they are licensed to conduct, provided, however, that a party to such dispute may require the dispute to be referred to arbitration, in which case, unless the parties agree otherwise and provided that such agreement is not contrary to Chapter VII of the Civil and Commercial Procedural Law of 1971, the provisions of Articles 67 to 71 of the Telecommunications Law shall apply mutatis mutandis.

16 NOTICES

- 16.1 All notices from the Licensee to the Authority and vice versa shall be in writing and shall be sent by email with acknowledgement of receipt to the following addresses:

If sent to the Authority: [-].

If sent to the Licensee: [...].

- 16.2 Either party may change its above address by notifying the other party in writing at least fifteen (15) days before such a change of address takes effect.

Accepted by : [Licensed Operator's Name]

Name :

Designation :

Date :

SCHEDULE A
ASSIGNMENT OF RADIO FREQUENCY SPECTRUM
(MOBILE)

The Assigned Radio Frequency Spectrum means, unless otherwise specified below, the radio frequency band(s) which comprise a range of radio frequencies between the upper and lower frequency limits of the radio frequency bands specified in the table below:

Frequency band (MHz)	Frequency range (MHz)
C-band 3500	3X00 – 3X00

The frequency ranges are to be used in accordance with Time Division Duplexing (TDD).

SCHEDULE B
SPECTRUM USAGE RIGHTS FEE PAYMENT SCHEDULE

The Licensee shall pay the following instalments of the Spectrum Usage Rights Fee:

Fee Amount

Payment Date

[these amounts will vary depending on compensation due from
revocation of NFWFL frequencies]

In consideration of the Licensee's obligation to pay the Spectrum Usage Rights Fee in accordance with this Schedule B, the Licensee has submitted post-dated cheques bearing cheque numbers [] drawn on [name of bank] bank account number []. The Licensee shall ensure that as at the Payment Date, it maintains sufficient funds in the afore-mentioned bank account that is equal to the value of the outstanding Spectrum Usage Rights Fee which will reduce over time as each instalment is paid. The Licensee acknowledges that failure to comply with this Schedule B will constitute a material breach of the Telecommunications Law and of the provisions of this Licence.

Annex C: Proposed application form

Award of Spectrum in the C-band (3400 – 3700 MHz)

Request for Expression of Interest

[... 2021]

Instructions for response

This Application Form must be completed and delivered by the eligible bidder as electronic files on a removable data storage device, along with a printed and signed copy, between 08:00 and 16:00 (Bahraini local time), by [...] 2021] at the latest, to:

Telecommunications Regulatory Authority
P.O. Box 10353, Manama, Kingdom of Bahrain

A scanned copy should be delivered on the same date to spectrum@tra.org.bh.

Applicant Details

Name of Applicant: _____

Please complete the Applicant Information Sheet contained in Annex 1 to this Application.

Application

The Applicant hereby applies for the grant of a Frequency Licence pursuant to Article 44 of the Telecommunications Law of the Kingdom of Bahrain promulgated by Legislative Decree No. 48 in October 2002, in accordance with the application form for Frequency Licences in the 3.5 GHz band issued by the Telecommunications Regulatory Authority (the "Authority").

Undertakings

The Applicant accepts and commits to the following undertakings as a condition of its participation in this Award Process:

1. The Applicant hereby accepts to comply with, and not challenge, the award rules and procedures, based on the Authority's objective of achieving equal and sufficient spectrum holdings amongst the three existing IMTL holders.
2. If the Applicant is awarded a Frequency Licence by the Authority in relation to this Application, the Applicant shall:
 - a. agree to and accept the terms and conditions of the Frequency Licence;
 - b. exercise its spectrum usage rights in accordance with the Frequency Licence; and
 - c. make timely payment in full of all applicable fees stipulated in the Frequency Licence.
3. By executing and submitting this Application, the Applicant irrevocably and unconditionally agrees not to commence, or assist or encourage any third party to commence, any claim, action or proceedings against the Authority, its employees, agents, officers or advisors in relation to the legality of this Award Process, including any claim, action or proceedings which are designed (or have the effect of), in whole or in part, to hinder, prevent, delay, interrupt, postpone, cancel, overrule, change or vary the form of this Award Process.

4. [for operators with NFWFLs only] The Applicant agrees that the Authority shall revoke its existing licence for C-band spectrum awarded under National Fixed Wireless Licences, that compensation shall be paid as a reduction in the Spectrum Usage Rights Fee as defined below, and that no other compensation shall be due.

Acceptance of Basic Spectrum Portfolio

Please indicate if you wish to acquire 100 MHz of spectrum in the 3.5 GHz band, at a price (for the Spectrum Usage Right Fees) of BHD 2,030,650 which will be paid as:

- One (1) payment of BHD [...] ¹⁵, due on 1 January of the first year of the licence.
- Four (4) payments of BHD 406,130, due on 1 January of second, third, fourth and fifth years of the licence.

☐ Yes

☐ No

Attestation and Signature

The undersigned* hereby attests that:

1. the information provided in this application is true and complete;
2. the Applicant accepts and commits to each and every undertaking set out in Section 3 of this Application Form; and
3. the Applicant has included with its Application Form a confirmation that the undersigned is duly authorised by the Board of the Applicant to execute and submit this Application Form to the Authority on the Applicant's behalf.

¹⁵ For operators with NFWFLs, this will be calculated as BHD 406,130 minus a pro-rated amount of the total paid at auction for the C-band spectrum in 2007, calculated as a ratio of fifteen years for the original licence, and the time between the date of the new licences and 8 January 2022. For operator without NFWFLs, these two bullet points will be replaced with one stating there will be five payments of BHD 406,130 each.

_____	_____
Name and Title	Date

[Affix relevant company stamp/seal below]	

* Application must be signed by the Applicant’s Chief Executive Officer or a senior executive of the Applicant.

Annex 1: applicant information sheet

Full Legal Name of Applicant	
Applicant C.R. number	
Name and title of person (Authorised Person) authorised to sign Application on behalf of Applicant	
Name and title of contact person within Applicant	
Telephone number of contact person	
Office address of contact person for hard copy delivery	
Email address of contact person	