



Oaseirys Çhellinsh
Communications Commission

Future Use of Spectrum

Consultation

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1 Executive Summary

1.1 Background

- 1.1. The Communications Commission (the Commission) is the statutory body responsible for regulating the telecommunications and broadcasting sectors in the Isle of Man. As part of its remit the Commission, in conjunction with Ofcom, is responsible for managing and determining access to the radio spectrum on the Island.
- 1.2. The use of spectrum on the Island is governed by UK legislation that has been extended to the Isle of Man, as well as by international agreements between the UK and other countries on the use of various bands of radio spectrum and the avoidance of interference across borders. The licensing of spectrum, in the UK and in the Isle of Man, is carried out by Ofcom, by virtue of the powers given to it by the Wireless Telegraphy Act 2006 (the WTA) and the Communications Act 2003¹.
- 1.3. For the purposes of the spectrum relevant to this consultation, the respective roles of the Commission and Ofcom in coordinating the award of spectrum licences in the Isle of Man are as follows:
 - a) The Commission ascertains the level and nature of demand for the spectrum in the specified bands. It identifies whether a selection process is needed. Eventually, when the assessment and selection process is completed, it makes a recommendation to Ofcom in relation to issuing licences under the WTA to Isle of Man operators, specifying the spectrum bands and the allocations within these bands that should be included within such licences; and
 - b) Ofcom issues licences for spectrum use under the WTA where it is satisfied the Commission's recommendation is consistent with its own statutory duties.
- 1.4. The WTA states, among other things, that in relation to spectrum licensing Ofcom must *"also have regard, in particular, to the desirability of promoting—*
 - (a) the efficient management and use of the part of the electromagnetic spectrum available for wireless telegraphy;*

¹ As extended to the Isle of Man by the The Communications (Isle of Man) Order 2003 SI 2003/3198 and the Wireless Telegraphy (Isle of Man) Order 2007 SI 2007/278

(b) the economic and other benefits that may arise from the use of wireless telegraphy;

(c) the development of innovative services; and

(d) competition in the provision of electronic communications services."

1.5. In carrying out its duties in relation to determining access to the radio spectrum the Commission must be aware of its own statutory duties, as set in the Telecommunications Act 1984, which state that the Commission must exercise its functions in the manner it considers is best calculated to:

a) *"secure that there are provided throughout the Island, save in so far as the provision thereof is impracticable or not reasonably practicable, such telecommunication services as satisfy all reasonable demands for them"; and,*

b) *"promote the interests of consumers, purchasers and other users of telecommunication services or telecommunication apparatus in the Island (including in particular, those who are disabled or of pensionable age) in respect of the prices charged for, and the quality and variety of, services provided and apparatus supplied."*

1.6. The Commission is of the view that it is in keeping with its statutory obligations, and in the best interests of the Manx consumer and economy to seek to facilitate access to portions of the spectrum (see Section 2.1 for further details) for the provision of telecoms services. This would be carried out in line with international developments that would allow operators, and ultimately consumers, to benefit from economies of scale and allow for the greatest possible range of services and technologies.

1.2 International Developments

1.7. There have been a number of advances in the delivery of fixed and mobile broadband, machine-to-machine communications, and next generation networks over recent years. The most high-profile of these advances has been the development of 5G standards, which the Commission expects will be formally accepted as part of the International Telecommunications Union (ITU) IMT2020 Vision at the end of 2019². The Commission is consulting on the release of key bands that will facilitate the roll

² <https://www.itu.int/en/ITU-R/study-groups/rsg5/rwp5d/imt-2020/Pages/default.aspx>

out of new technologies, as well as providing continuity for current generation services in the intervening period.

- 1.8. To facilitate this the spectrum will be made available on a service and technology neutral basis. This allows the greatest degree of flexibility for operators to design and plan their networks in a way that best serves the different demand for services on the Island while also allowing for the development of new applications and services. This is in line with the decisions that the EU has adopted in relation to the bands under consideration³ which should provide sufficient certainty to operators as to what coexistence measures would apply.
- 1.9. To facilitate this the Commission will liaise with Ofcom to revoke the WTA licenses that are currently in force in certain bands to allow for access to contiguous blocks of spectrum that are large enough to allow for the provision of high speed broadband services. Current licensees may seek to access the spectrum under the new regime and appropriate transition arrangements will be put in place as part of the award process to ensure continuity of service for consumers – this will be explored in further detail in a subsequent consultation.
- 1.10. To ensure that there is the greatest selection of services and service providers available for Manx consumers the Commission will release all of the spectrum that is available in each band for Fixed, Mobile, and Nomadic services. This should also ensure that the chances of all interested parties to access the spectrum are maximized and that it is awarded in the most efficient way possible.

1.3 Document Structure

- 1.11. The primary purpose of this consultation is to signal the Commission's preliminary views and gather information on the level of demand for the different bands available. This will in turn allow the Commission to design a process for ensuring that access to the spectrum is awarded to parties that will make the most efficient use of it in the interests of the Manx consumer and economy, on a fair and non-discriminatory basis.

- 1.12. In the remainder of this document the Commission outlines its preliminary views on:

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016D0687&qid=1565342823703&from=EN> and <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D0235&from=EN> respectively.

- a) Spectrum bands currently under consideration;
- b) The current and future use of relevant spectrum bands;
- c) High-level consideration of issues affecting the award of the spectrum including award principles, access fees, and milestones and timelines.

2 Potential Spectrum Bands for Release

1.13. There are currently three spectrum bands proposed for release in the Isle of Man for a number of possible use cases. Bearing in mind the need to ensure the efficient use of the spectrum on the Island, and to facilitate the deployment of systems utilising the radio spectrum for the benefit of Manx consumers, the Commission is of the view that it should follow, where practical, decisions and best practices adopted by EU jurisdictions⁴.

1.14. The primary reason for this is to allow Manx operators to benefit from the economies of scale that exist at the EU level. It is likely that equipment manufacturers will produce equipment that adheres to recognised standards and follow spectrum allocations made at regional levels. Indeed there is already an established ecosystem of equipment for Mobile/Fixed Communications Network (MFCN) use in many of the bands in question, and these bands have been identified as key bands for the delivery of 5G services. This is also likely to provide tangible benefits to consumers in relation to choice and availability of high speed broadband services.

2.1 Bands Currently Under Consideration

2.1. There are currently three bands that the Commission is considering releasing in the Isle of Man:

- a) Within the 694 – 790MHz range (the 700MHz Band) there is potential to release up to 80MHz of spectrum;
- b) There is scope to release all of the 3410 – 3800MHz band (the 3.6GHz Band); and,
- c) There is scope to release spectrum within the 24.25 – 27.5 GHz range (the 26GHz Band), although the Commission does not intend to progress the release of this spectrum until rights of use have been decided in the abovementioned bands.

2.2 Current Use of Bands under Consideration

2.2. The following provides consideration of the current and future uses of each of the abovementioned bands:

⁴ While it is currently a member of the EU, it is likely that in the event of Brexit the UK would still broadly follow the EU spectrum allocations and technical specifications.

2.2.1 700MHz Band – Current Use

2.3. The 700MHz Band has been traditionally used for terrestrial television broadcasting, most recently for the provision of Digital Terrestrial Television (DTT). The process of re-farming this spectrum for other uses commenced in late 2014, and it is expected that from 2020 onwards new service can commence deployment within the band.

2.2.2 700MHz Band – Future Use

2.4. The 700MHz Band has been earmarked for mobile communications services across the EU; it has also been identified as a 'Pioneer Band' for 5G services⁵ along with the 3.6GHz and 26GHz Bands.

2.5. In comparison to the other bands that have been identified the 700MHz Band has favourable technical characteristics both in terms of propagation and building penetration. This, coupled with the relatively small amount of spectrum available, means that it is likely that this band will be used predominantly in rural and light-urban areas for coverage rather than for the denser deployments that would likely be seen in other bands.

2.6. The Commission is of the view that the Isle of Man is not likely to have different demands from other jurisdictions in this regard and intends to release the band for mobile communications services. While there may be other use cases the Commission does not currently have sufficient sight of the demand for such uses and as such cannot consider them further at this point.

2.7. Respondents' views on the Commission's current thinking, both in respect of the current and future uses of the 700MHz Band are welcomed; respondents with alternative use cases are asked to provide details of their proposed use case for further consideration. The Commission asks that respondents provide sufficient evidence to support their views.

2.2.3 3.6GHz Band – Current Use

2.8. The 3.6GHz Band is currently in use for Fixed Wireless Access (FWA) services. For the avoidance of doubt the Commission considers FWA services to be those delivered using a point-to-multipoint system using fixed external antennas, typically for the provision of broadband services.

⁵ <https://ec.europa.eu/digital-single-market/en/news/commission-decides-harmonise-radio-spectrum-future-5g>

2.9. There are currently two licensees in the band, Bluewave and Domicilium; between them they are assigned 180MHz of the band. Approximately 1100 customers are supplied with broadband by the current licensees with the majority being in rural areas that may not have other options to access broadband at present⁶. There are also other customers, including business customers that have opted to either purchase or retain FWA services in areas where other broadband infrastructure exists, as such it can be inferred that demand may exist for at least this amount of spectrum.

2.2.4 3.6GHz Band – Future Use

2.10. When considering the future use of the 3.6GHz Band the Commission must balance both the interests of customers currently served by FWA services in the band, and providing access to spectrum for other use cases, including 5G. With this in mind it is the Commission's view that this balance is best achieved by releasing the 3.6GHz band in its entirety for mobile, fixed, and nomadic use.

2.11. This would be in line with the approach that has been adopted in other jurisdictions, and in line with EU decisions which means more jurisdictions will follow suit in the short to medium term. It also avoids a situation where the Commission creates an artificial shortage of spectrum thus resulting in inflated access fees (see Section 3.1.1 for further details). Based on both the current usage, and the likely future demand for spectrum it is possible that releasing less than the full band could result in access to broadband services being curtailed for Manx consumers, particularly in rural areas.

2.12. Future use of the 3.6GHz Band is likely to consist of a mixture of services and technologies. The imminent rollout of 5G networks is likely to be the core driver of growth in mobile services in the band, and there will in all probability be demand for FWA and Machine-to-Machine (M2M) communications, commonly referred to as the Internet of Things (IoT). It is also anticipated that residual demand for FWA services will remain and that in future providers may seek to use 5G technologies to deliver higher speed FWA services.

2.13. The re-farming of the 3.6GHz Band is also necessitated by the fact that the optimal bandwidth that is likely to be required for 5G services is 100MHz, and as it stands there are no contiguous blocks of 100MHz available in the band. This will require the

⁶ The Commission acknowledges that the National Broadband Plan is currently progressing but it is likely that this will not be fully delivered in the short-term (1-3 years), as such the current FWA service may continue to be the only viable option for broadband in some areas for the medium-term (3-5 years).

Commission, in conjunction with Ofcom, to work towards revoking the current WTA licences and re-issue new licences to any party that successfully obtains access to rights of use in the 3.6GHz Band.

2.14. While the Commission cannot guarantee that any party will be successful in obtaining access to the spectrum, it will ensure that access to rights of use is determined in a fair and transparent manner. Further consultations will provide more detail on the mechanisms that the Commission intends to employ to ensure that the number of access seekers can be maximised whilst facilitating suitable bandwidths.

2.15. Respondents' views on the Commission's current thinking, both in respect of the current and future uses of the 3.6GHz Band are welcomed; the Commission asks that respondents provide sufficient evidence to support their views.

2.2.5 26GHz Band – Current Use

2.16. The 26GHz Band is currently used for point-to-multipoint FWA and fixed links in other jurisdictions, however it is not currently widely used in the Isle of Man. Additionally, due to the amount of spectrum that is potentially available in the band it is unlikely that a situation would arise where new users could not coexist with existing users.

2.2.6 26GHz Band – Future Use

2.17. As outlined in paragraph 2.4 above, this is one of the Pioneer Bands that has been identified for the provision of 5G services in Europe. However, the Commission is of the view that there is unlikely to be demand for access to the 26GHz Band in the medium-term for such uses on the Island. This is because the band is expected to be used to facilitate very dense small cell deployments in urban areas to provide enhanced download speeds, a use case that is not likely to arise in the Isle of Man. Additionally developments in Massive MIMO⁷ technology in lower frequency ranges should allow for less dense networks with the capability of providing the same quality of service as higher density networks.

2.18. As a result of this, the Commission does not intend to deal with access to rights of use in this band as part of this consultation process, however it is acknowledged that there could be demand for access to the band as an alternative to the 3.6GHz spectrum for

⁷ Multiple Input – Multiple Output antenna technology uses multiple antennas to simultaneously serve many customers over extended distances and is expected to be an integral part of 5G standards.

FWA purposes. Should such a situation arise the Commission would work to ensure that access to the band would be an option for users.

2.19. Respondents' views on the Commission's current thinking, both in respect of the current and future uses of the 26GHz Band are welcomed; the Commission asks that respondents provide sufficient evidence to support their views.

3 Award Issues and Timelines

3.1. The Commission is cognisant of the importance of facilitating access to some or all of the bands outlined in Chapter 2 in a timely and efficient manner. Furthermore, it is aware of the need for certainty in this space given the scale and scope of the investment decisions to be made by industry players. To that end this chapter provides the Commission's preliminary view on some of the issues arising in respect of the award including, award principles, access fees, and timelines.

3.1.1 Award Principles

3.2. As previously outlined in this document, the Commission is not in a position to reserve spectrum for any particular user or use case, but must, in conjunction with Ofcom's duties, ensure that the spectrum is used in the most efficient way possible. The Commission currently considers that users utilise as fully as possible the full amount of spectrum at their disposal in a way that provides the most benefit to the Manx consumer and economy to be the most efficient use.

3.3. It is incumbent on the Commission to ensure that the maximum amount of spectrum is made available, on a service and technology neutral basis, in a fair, transparent, and non-discriminatory way. As such the Commission intends to award access to the entirety of the 3.6GHz Band with the exception of 3400 – 3410MHz which is required as a guard-band to protect users in the band below this. Given the fact that there are currently no technical means of overcoming the coexistence issues that exist the Commission does not intend to consult any further on this issue.

3.4. However, the remaining 390MHz of the 3.6GHz Band should be sufficient to cater for the various use cases that currently exist and to allow for the development of 5G services in the future. There is also a significant risk that if the Commission was to only release smaller portions of the Award Spectrum it would artificially constrain supply which would result in an inflated value of the spectrum. This in turn would likely negatively impact on the investment case for 5G ultimately to the detriment of the Manx consumer. Releasing all the spectrum that is available in the band would likely result in access fees being at a level that reflects its true value.

3.5. The Commission does not however have a definitive view on the likely demand for the Award Spectrum and would welcome expressions of interest outlining the quantum of spectrum and desired location in the band. This would be treated as commercially

sensitive information and would not be divulged as part of the consultation process, furthermore the Commission reiterates that this is only an expression of demand and should not be interpreted as a guarantee of gaining access to the Award Spectrum.

- 3.6. The Commission is working to prepare for a competitive award process and further details of this will be consulted on during the course of this process, please see Section 3.1.3 below for further details. Should there be sufficient spectrum to satisfy all bids access would be granted at the reserve price (see 3.1.2 below), the competitive award process would only be triggered in the event of there being excess demand for the Award Spectrum.

3.1.2 Access Fees

- 3.7. As part of this consultation the Commission intends to provide a high-level overview of how it intends to deal with fees for accessing spectrum rights of use, it also sets out the principles that it will use to guide it in setting fees. This consultation will not deal with the specifics of fees, nor the level at which they will be set.
- 3.8. The radio spectrum is a finite natural resource, as such it must be managed in such a way that the users that most value it gain access to it on a fair and reasonable basis. This ensures that the Manx consumer and economy derive the maximum benefit from the radio spectrum.
- 3.9. The Commission is of the view that the fairest and most transparent way to determine the true value of the spectrum is to use a combination of benchmarking to ensure a reserve fee is set at an appropriate level, and a market based mechanism, such as an auction, to determine any value above and beyond this. In essence both mechanisms reflect the value that the telecoms industry has placed on the spectrum, not an arbitrary value determined by the Commission.
- 3.10. In relation to the benchmarking exercise, the Commission is of the view that the value of the spectrum on the Island is inherently the same as in other jurisdictions and that the main factor affecting the final fees paid, other than supply constraints, is the scale and scope of the market. The Commission would take the appropriate steps to ensure that values are corrected in such a way that they can be directly applied in the Isle of Man, and that any outliers are not factored into its thinking.

3.1.3 Milestones and Timelines

3.11. This document represents the first steps in the process of awarding rights of use in the 3.6GHz Band, the remainder of the process is outlined below. The Commission has designed this process to align as closely as possible with the international expectation that 5G deployments may commence in early to mid-2020. At the same time the Commission is aware that any investment decisions in relation to 5G are commercial in nature and ultimately must be made by network operators.

3.12. Following this consultation, the Commission intends to publish a Response to Consultation and Further Consultation in Q4 2019 – it is expected that this will focus on the more technical aspects of the access to the Award Spectrum and the mechanisms that may be employed to determine the same.

3.13. The final stage of the process will be the Response to the Further Consultation and publication of details of the award process including the application procedure. It is anticipated that this will be published in Q1 2020. It is uncertain as to how long the award process itself would take as there are many variables that could effect this, the Commission will however endeavour to have it completed in the shortest time possible.

3.14. Respondents' views on the Commission's current thinking in relation to the award issues identified and proposed timelines are welcomed. The Commission asks that respondents provide sufficient evidence to support their views.

4 Next Steps

- 4.1. The Commission is inviting responses by 23 October 2019.
- 4.2. When submitting any views please indicate if you are responding on behalf of an organisation. To ensure that the process is open and transparent, responses can only be accepted if you provide your name with your response. Unless specifically requested otherwise, any response received may be published either in part or in its entirety. Please mark your response clearly to confirm if you wish your response and name to be kept confidential. Confidential responses will be included in any statistical summary and numbers of comments received.
- 4.3. If you think your response should be kept confidential, please specify which part(s) this applies to and explain why. Please clearly mark any confidential sections. If asked to keep part or all of a response confidential, the Commission will treat this request seriously and try to respect it. However, sometimes the Commission may be required to make publically available all responses, including those that are marked as confidential, in order to meet legal obligations.
- 4.4. All information in responses, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2015 and the Data Protection Act 2018).
- 4.5. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding.
- 4.6. The purpose of this consultation is not to be a referendum, but an exercise to gather sufficient evidence with which to make the most informed decision possible. In any consultation exercise the responses received do not guarantee changes will be made to the Commission's proposals. Responses will be fully considered before the Commission publishes any Decision(s). As such it is important for respondees to ensure they have included sufficient rationale, objective justification, and/or evidence in their responses.
- 4.7. If you wish to discuss the issues and questions raised in this consultation, or simply seek clarification, please contact the Commission.
- 4.8. This consultation can be viewed on the Government Consultation Hub <https://consult.gov.im> or through the Commission's web page www.iomcc.im.

4.9. Following the closing date all responses will be considered. The Commission will prepare and publish a summary of the responses and its consideration of the responses received, and any further consultation and/or decision(s).

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