



**Response to Consultation and Decision on the
licensing of spectrum in the 900 MHz, 1800 MHz,
2100 MHz, 2.6 GHz and 3.4 GHz bands**

16 March 2018

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1. Introduction

1.1 Requests received for additional spectrum assignments

This response to consultation relates to requests received by the Isle of Man Communications Commission (“the Commission”) for additional licensed spectrum from Manx Telecom Trading Limited (“MT”), Sure (Isle of Man) Limited (“Sure”) and BlueWave.

The three operators made the following requests for spectrum:

- **MT** requested that, in the 900 MHz band, the 2 x 1.2 MHz that is currently reserved for it now be formally assigned to it. MT has also expressed interest in acquiring an additional 2 x 20 MHz in the 1800 MHz band, an additional 2 x 20 MHz in the 2100 MHz band and allocations of 2 x 40 MHz (FDD-compatible) and 40 MHz (TDD-compatible) in the 2.6 GHz band;
- **Sure** requested access to an additional assignment of 2 x 15 MHz in the 1800 MHz band and an assignment of 2 x 15 MHz in the 2100 MHz band;
- **BlueWave** requested access to an assignment of 30 MHz of TDD-compatible spectrum in the 3.4 GHz band.

The Commission published a consultation setting out its proposals further to these requests request on 20th December 2017 (the December 2017 consultation).¹ The Commission received eight responses to the consultation from the following:

- Domicilium (IOM) Limited (“Domicilium”);
- Isle of Man Amateur Radio Society (“IOMARS”);
- MT;
- Radio Society of Great Britain (“RSGB”);
- Sure;
- Mr Richard Baker;
- Mr John G Dowling;
- Mr Daniel Wood.

Non-confidential versions of the consultation responses received will be available on the Commission’s website. The Commission thanks all the respondents for their comments, which have been taken into account in this consultation response and which have helped the Commission in reaching its Decision on the various requests for spectrum.

¹ Consultation on the licensing of spectrum in the 900 MHz, 1800 MHz, 2100 MHz, 2.6 GHz and 3.4 GHz bands, Communications Commission, 20th December 2017, available at: <https://consult.gov.im/communications-commission/licensing-of-additional-spectrum-bands/>

1.2 Legal and regulatory background

Legislative background

The Commission is responsible for issuing licences for telecommunications and broadcasting services on the Island. Under the Telecommunications Act 1984 (of Tynwald) its powers include:

- specifying the nature of the telecommunications systems and services which operators are permitted to operate and provide under the licence²; and
- setting conditions on such operation and provision.³

Spectrum management is the responsibility of the UK Office of Communications (Ofcom). Ofcom licenses and regulates the use of radio spectrum in the Island, under the Wireless Telegraphy Act 2006 of Parliament, which is extended to the Isle of Man, with Tynwald's consent, by Order in Council. The Commission works closely with Ofcom to ensure that Isle of Man Government policies are taken into account in licensing decisions.

2.2 UK legislation relevant to spectrum licensing in the Isle of Man

The use of spectrum in the Isle of Man 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 to which various bands of radio spectrum can be put 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 and the Communications Act 2003. Ofcom's principal and secondary duties are in Section 3 of the Communications Act 2003 ('General duties of Ofcom'), which provides that:

- (1) *It shall be the principal duty of OFCOM, in carrying out their functions—*
 - (a) *to further the interests of citizens in relation to communications matters;*
 - and*
 - (b) *to further the interests of consumers in relevant markets, where appropriate by promoting competition.*
- (2) *The things which, by virtue of subsection (1), OFCOM are required to secure in the carrying out of their functions include, in particular, each of the following—*
 - (a) *the optimal use for wireless telegraphy of the electro-magnetic spectrum;*
 - (...)

Moreover, Section 3 of the WTA ('Duties of OFCOM when carrying out functions') further specifies Ofcom's duties as follows:

² See s.5(1) and 5(4)(b) Telecommunications Act 1984.

³ See s.5(5) Telecommunications Act 1984.

- (1) *In carrying out their radio spectrum functions, OFCOM must have regard, in particular, to—*
 - (a) *the extent to which the electromagnetic spectrum is available for use, or further use, for wireless telegraphy;*
 - (b) *the demand for use of the spectrum for wireless telegraphy; and*
 - (c) *the demand that is likely to arise in future for the use of the spectrum for wireless telegraphy.*
- (2) *In carrying out those functions, they 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;*
 - (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.*

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:

- 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 the issuing of 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
- Ofcom issues licences for spectrum use under the WTA where it is satisfied the Commission's recommendation is consistent with its own statutory duties.

2. Requests for additional spectrum

In the consultation, details of the various requests received from the three operators for spectrum assignments in the 900 MHz, 1800 MHz, 2100 MHz, 2.6 GHz and 3.4 GHz bands were outlined and the implications for spectrum usage and availability in these bands were considered. Summaries of responses received to the consultation regarding each of these requests along with the Commission's analysis of the responses received and its decision on each allocation are set out below.

2.1 Request by MT for spectrum in the 900 MHz band

Summary of responses

Only MT and Sure responded on the Commission's provisional proposal that MT be granted access to an additional allocation of 2 x 1.2 MHz of spectrum in the 900 MHz band. Both MT and Sure expressed support for the Commission's proposal.

Commission's analysis

As the Commission noted in the December Consultation, the additional spectrum in the 900 MHz band to which MT has now sought access was already formally reserved for it in a previous spectrum assignment process in 2015. No objections have been raised to allocating this spectrum formally to MT.

Commission's decision

DECISION 1: MT should be granted access to an additional 2 x 1.2 MHz block in the 900 MHz band. The Commission will recommend to Ofcom that MT's Wireless Telegraphy licence granting it access to total spectrum in the 900 MHz band from 945 – 960 MHz (base transmit), paired with 900 – 915 MHz (mobile transmit).

2.2 Requests by MT and Sure for spectrum in the 1800 MHz band

Summary of responses

Only MT and Sure responded on the Commission's provisional proposal that both operators be granted access to additional allocations of 2 x 15 MHz of spectrum in the 1800 MHz band.

MT did not support the Commission's proposal and took the view that spectrum allocations in the 1800 MHz should be equitable and that, as is the case in the 900 MHz band, one 5 MHz block should remain unallocated.

Sure supported the Commission's proposal that both operators be granted access to additional allocations of 2 x 15 MHz of spectrum in the 1800 MHz band.

Commission's analysis

As the Commission noted in the Consultation, during the 4G licensing process it attempted to put in place a process of spectrum equalisation between the two

mobile operators. On that occasion one of the operators was not keen to pursue this option and, in light of this, the Commission decided not to take the issue any further.

In deciding on the allocation of spectrum assignments in the band now, the Commission does not believe it would be equitable to recommend that MT be granted access to an additional 2 x 20 MHz allocation within the band, while Sure is only granted access to a further 2 x 10 MHz. Neither would it make sense to adopt MT's proposal to leave 5 MHz unassigned, given that both operators have expressed interest in acquiring usage rights over all remaining spectrum in the band.

On balance, the Commission remains of the view that the best approach to adopt is for both operators each to be granted access to further allocations of 2 x 15 MHz, which is what the Commission proposes to recommend to Ofcom. While this will mean that Sure will hold more spectrum in the fully assigned 1800 MHz band than MT, there are plenty of other opportunities for MT to acquire additional spectrum in other bands.

Commission's decision

DECISION 2: MT and Sure should each be granted access to an additional 2 x 15 MHz of spectrum in the 1800 MHz band. The Commission will recommend to Ofcom that both operators' Wireless Telegraphy licences be amended to reflect these additional assignments.

2.3 Requests by MT and Sure for spectrum in the 2100 MHz band

Summary of responses

Only MT and Sure responded on the Commission's provisional proposal that both operators be granted access to additional allocation of spectrum in the 2100 MHz band.

MT expressed support for the Commission's proposal. MT stated that it would be in favour of both operators being granted equal additional allocations of 20 MHz of FDD-compatible spectrum in the band, with additional allocations of TDD-compatible spectrum in the future.

Sure also expressed support for the Commission's proposal. Sure confirmed that, as part of the allocation of additional 2100 MHz spectrum to it and MT, it is willing to re-farm its existing holding in the band.

Sure also stated that it had reviewed its requirements for additional 2100 MHz spectrum and now felt that it would be prudent for it to request access to the remaining 5 MHz block at the top of the band, i.e. 2165 – 2170 MHz (base transmit), as well as the 2 x 15 MHz it had already requested.

In addition, Sure pointed to a typographical error in the Consultation Document (Section 4.3, page 12) where it was stated that, following the assignment to it of the requested additional allocation of 2 x 15 MHz of spectrum in the band, its total 2100 MHz holding would be 2 x 20 MHz, when in fact it would be 2 x 25 MHz. This error was also carried through to Figure 6.

Commission's analysis

The Commission notes MT's comments about future TDD assignments in the band but would point out that only 10 MHz of TDD-compatible spectrum currently remains unassigned, not 20 MHz as MT had stated. Neither operator has asked for additional TDD spectrum in the 2100 MHz band at this time.

The Commission notes Sure's request for 5 MHz spectrum over and above that which it had originally requested and which the Commission has consulted on. In order to ensure that the assignment of spectrum usage rights is open, transparent and non-discriminatory the Commission needs to elicit views on it. Absent any objections, the Commission is minded to accede to Sure's request for access to the additional 5 MHz block at the top of the band (i.e. 2165 – 2170 MHz, paired with 1975 – 1980 MHz) but will consider responses from interested parties to this request up until **13 April 2018**.

As regards the date on which re-farming of current 2100 MHz spectrum assignments will be completed so that both operators have access to the new, larger assignments (and noting the point above regarding possible responses from interested parties relating to Sure's request for access to an additional 5 MHz block of 2100 MHz spectrum), the Commission notes that Sure has since confirmed to it that it will be in a position to vacate its current holding in the band no later than fifteen working days following the publication of the Commission's final Decision on the revised spectrum assignments.

The Commission acknowledges the error contained in the Consultation Document, which was pointed out by Sure in its response. As Sure outlined, the Consultation Document (Section 4.3 and Figure 6) should have stated that, following the allocation to it of the additional 2 x 15 MHz, Sure's total holding would be 2 x 25 MHz. The Commission apologises for this error.

Commission's decision

DECISION 3: MT should be granted access to an additional 2 x 20 MHz of spectrum in the 2100 MHz band. Sure should be granted to an additional 2 x 15 MHz of spectrum in the 2100 and, subject to no objections being raised by any interested parties, to a further 2 x 5 MHz block at the top of the band (i.e. 2165 – 2170 MHz, paired with 1975 – 1980 MHz). The date for access to the new 2100 MHz assignments for both operators will be confirmed once the deadline has passed for submissions on Sure's request for a further 2 x 5 MHz block of 2100 MHz spectrum. The Commission will recommend to Ofcom that both operators' Wireless Telegraphy licences be amended to reflect these additional assignments.

2.4 Request by MT for spectrum in the 2.6 GHz band

Summary of responses

Only MT and Sure responded on the Commission's provisional proposal that MT's enquiry about a possible spectrum allocation in the 2.6 GHz band be dealt with as a separate exercise, which would consider the issue of assigning usage rights to large contiguous spectrum blocks in order to enhance the quality of mobile broadband services.

Both MT and Sure supported the Commission's proposal that this issue be dealt with as a separate exercise.

Commission's analysis

The Commission welcomes both respondents' agreement that this issue should be dealt with separately. The Commission has already begun to engage with the operators and with Ofcom on how best – including in what bands – usage rights should be granted to large contiguous spectrum blocks.

The Commission now believes that this exercise might best be widened also to include the assignment of spectrum usage rights in the 700 MHz band and how best to deal with possible 5G assignments in the 3.4 – 3.8 GHz band. It is anticipated that a consultation on this issue will be published in Q2 2018.

Commission's decision

DECISION 4: The Commission will consult separately on the issue of assigning usage rights to large contiguous spectrum blocks to support the further development of mobile broadband services, including 4G Advanced and, in time, 5G.

2.5 Request by BlueWave for spectrum in the 3.4 GHz band

Summary of responses

All of the respondents provided comments on the Commission's proposal to recommend that BlueWave be granted access to an allocation of 30 MHz TDD-compatible spectrum in the 3.4 GHz band.

MT noted the Commission's statement in the Consultation about the possible future use of the band and the potential need to clear or re-configure the band for re-assignment for 5G services. MT stated that, with this caveat, it was supportive of assignments in the 3.4 GHz band.

Sure expressed no views on the specific proposal by the Commission that BlueWave be granted access to spectrum in the 3.4 GHz band. Sure did, however, welcome the Commission's statement in the Consultation that the proposed assignment of spectrum to BlueWave in the band was without prejudice to future moves the

Commission may have to make to clear or re-configure the band for re-assignment in a 5G licensing process.

Domicilium stated that it had no objections to the proposal to allocate spectrum to BlueWave in the 3.4 GHz band as long as a suitable guard band was in place to protect its existing licensed frequencies in the band.

The RSGB, IOMARS, Mr Baker, Mr Dowling and Mr Wood all made similar points regarding the implications for amateur radio users on the Island of the Commission's proposal to recommend to Ofcom that BlueWave be granted access to the 3410 – 3440 MHz block in the 3.4 GHz band. All of these respondents expressed concern that such an allocation would result in interference being experienced by amateur radio users operating as secondary users in the 3400 – 3410 MHz block.

The RSGB stated that because there was no proposed guard band between the amateur radio block and BlueWave's proposed assignment, out of band emissions from systems operating in the proposed BlueWave spectrum would spill over into the amateur spectrum.

Mr Baker, Mr Dowling and Mr Wood in addition all pointed to the likely different power levels that would be in operation in the two adjacent blocks, which would be likely to result in interference in both directions.

The IOMARS also stated that the primary user in the 3400 – 3410 MHz block (MoD) often use high powered equipment, which, separately to amateur radio usage, could cause issues for Bluewave equipment using 3410 – 3440 MHz block.

The IOMARS, Mr Baker, Mr Dowling and Mr Wood all proposed that, instead of allocating the 3410 – 3440 MHz block to BlueWave, it should instead be granted access to the 3510 -3510 MHz block. Such an approach would, according to the respondents, mitigate potential interference problems with amateur users and the primary user in the 3400 – 3410 MHz block.

Commission's analysis

The Commission has liaised with Ofcom on this issue and it has drawn Ofcom's attention to the concerns raised by amateur radio users on the Island about possible interference issues arising from the proposed spectrum assignment in the 3.4 GHz band. Ofcom has not yet completed its examinations on this issue and so, in order to avoid further delay in relation to finalising the other proposed assignments included in this consultation, the Commission feels that it would be best to come to a definitive conclusion on the proposed 3.4 GHz band assignment for BlueWave at a later date, once the position has been clarified relating to possible interference issues in the band.

Commission's decision

DECISION 5: Once it has received advice from Ofcom relating to possible interference issues in the 3.4 GHz band, the Commission will publish its Decision setting out its proposed recommendation to Ofcom in relation to BlueWave's application for an allocation of 30 MHz TDD-compatible spectrum in the 3.4 GHz band.

3. Next steps

The Commission will now proceed to recommend to Ofcom that:

- MT be granted access to the additional 2 x 1.2 MHz of spectrum it has requested in the 900 MHz band;
- MT and Sure each be granted access to an additional 2 x 15 MHz of spectrum in the 1800 MHz band;
- MT and Sure be granted access to 2 x 20 MHz of additional spectrum in the 2100 MHz band, in Sure's case subject to no objections being raised to its supplementary request, made in its consultation response, for access to the 2 x 5 MHz block 2165 – 2170 MHz paired with 1975 – 1980 MHz.

If you have any views on the Commission's proposal to grant access to Sure to the spectrum block 2165 – 2170 MHz paired with 1975 – 1980 MHz please respond in writing by 17.00 on 13 April 2018 to:

Katy Collister
Regulatory Manager
Communications Commission
Ground Floor, Murray House
Mount Havelock, Douglas
Isle of Man
IM1 2SF

cc@iomcc.im

As outlined in Section 2.4 above, the Commission will, once it has received advice from Ofcom relating to possible interference issues in the 3.4 GHz band, publish its Decision setting out its proposed recommendation to Ofcom in relation to BlueWave's application for an allocation of 30 MHz TDD-compatible spectrum in the 3.4 GHz band.