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# **Award of the 700 MHz and 3.6-3.8 GHz spectrum bands**

Information Memorandum Update

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# Important Notice

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This update (the “Update”) is supplemental to and should be read in conjunction with, the Information Memorandum dated 13 March 2020 (the “Memorandum”) (the Update and the Memorandum together the “Updated Memorandum”) has been prepared by Ofcom in connection with the proposed award of licences in the 700 MHz and 3.6-3.8 GHz spectrum bands by auction. Terms and expressions used in this Update are as defined in annex 7 of the Memorandum unless expressly defined in the Update.

The award process will be conducted in accordance with regulations made by Ofcom on 3 November 2020 (the “Regulations”). At the end of the award process, Ofcom may grant licences in accordance with the procedure set out the Regulations.

Recipients of the Memorandum and/or the Update should note that only the Regulations will have statutory effect. Accordingly, in the event of any difference between the Updated Memorandum and the provisions of the Regulations, the Regulations are definitive and will prevail.

This Updated Memorandum has been prepared solely in connection with the proposed award of licences in the 700 MHz and 3.6-3.8 GHz spectrum bands, and has been made available for information purposes only. This Updated Memorandum does not constitute an offer or invitation to participate in the award process, nor does it constitute the basis for any part of any contract which may be concluded in relation to the award process or in respect of any award of licences. This Updated Memorandum (or any part of it) shall not, nor the fact of its distribution form the basis of, or be relied upon in connection with, or act as any inducement to enter into, any decision or commitment in respect of any award of licences. The whole of this Updated Memorandum should be read. This Updated Memorandum is not intended to form any part of the basis of any investment decision or other evaluation or any decision to participate in the award process, and should not be considered as a recommendation by Ofcom or its advisers to any recipient of the Memorandum and/or the Update to participate in the award process. Each recipient of this Memorandum and/or the Update is advised to seek its own advice from independent advisors and must make its own independent assessment of the potential value of a licence after making such investigation as it may deem necessary in order to determine whether to participate in the award process.

All information contained in this Updated Memorandum is subject to updating, revision and/or amendment. The publication and availability of this Updated Memorandum (or any part of it) does not create any implication that there has been no change to the information contained herein or that the information is correct at any time subsequent to the date of this Updated Memorandum. Ofcom is under no obligation to publish any supplementary information memorandum containing updated information, and assumes no obligation to publish additional information.

While the information contained in this Updated Memorandum is believed to be accurate as at the time of publication, Ofcom, Ofcom's advisers, relevant Government departments, and their respective directors, partners, officers or employees do not make any undertaking, representation,

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This Updated Memorandum contains or incorporates by reference "forward-looking statements" regarding the belief or current expectations of Ofcom and other Government or regulatory agencies about the licences, the subject of the licences and the award process described in the Updated Memorandum.

These forward-looking statements are not a guarantee of future performance or events. Rather, they are based on current views and assumptions and involve known and unknown risks, uncertainties and other factors, many of which are outside the control of Ofcom and are difficult to predict, that may cause actual results to differ materially from any future results or developments expressed or implied from the forward-looking statements. Each forward-looking statement speaks only as of the date of the particular statement. Ofcom expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in Ofcom's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

Recipients of this Updated Memorandum are not to construe the content of this Updated Memorandum, or any other communication by or on behalf of Ofcom, or any of its advisers, as financial, legal, tax or other advice. Accordingly, each recipient of this Updated Memorandum should consult its own professional advisers as to financial, legal, tax and other matters concerning any potential participation in the award process or any award of licences.

This Updated Memorandum is available only on the Ofcom website: [Award of the 700 MHz and 3.6-3.8 GHz spectrum by auction](#). In the event of any discrepancy between different versions, the latest published version on the Ofcom website is definitive and will prevail.

Following issue of this Updated Memorandum, Ofcom may publish further information and guidance. All requests for information will be handled in line with The Freedom of Information Act 2000 and/or the Environmental Information Regulations 2004 (as applicable). Ofcom may publish (including on the Ofcom website), in whole or in part, questions received from recipients of this Updated Memorandum and the answers provided but will take into consideration any requests for confidentiality.

Recipients of this Updated Memorandum are encouraged to register their e-mail addresses with Ofcom so as to receive notifications of the publication of further information automatically, but it remains their responsibility to check the Ofcom website for updates. Registration of address should

be made by following the registration procedure at the [relevant page on the Ofcom website](#). Shortly before the commencement of the award process, the Ofcom website will carry more detailed information about the award process.

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# 1. Background

- 1.1 On 13 March 2020 the Office for Communications (“**Ofcom**”) published an Information Memorandum (the “**Memorandum**”) that provided information for those parties considering bidding in this award process for one or more Wireless Telegraphy Act 2006 (WT Act) licences to establish or use stations for wireless telegraphy or to install or use apparatus for wireless telegraphy in one or both of the 700 MHz or 3.6-3.8 GHz bands.
- 1.2 At the same time we also published three further documents. They were:
- a statement setting out our policy decisions for the award (the “**Statement**”)<sup>1</sup>;
  - a Notice of the final draft of the Wireless Telegraphy (Licence Award) Regulations 2020<sup>2</sup>; and,
  - the first version of the process guidance for potential applicants and bidders in the auction<sup>3</sup>.
- 1.3 In particular, the Memorandum:
- described the characteristics of the bands for which the licences are to be awarded;
  - explained some factors that may affect licensees’ use of the bands;
  - summarised some of the principal terms of the licences that will be issued following completion of the award process, and provided in annexes 1 and 2 template examples of the licences that will be issued for the 700 MHz and 3.6-3.8 GHz bands;
  - set out the spectrum lots that will be available in the award process and the reserve price for each lot;
  - provided certain information in relation to the award process; and
  - provided information on a range of other associated issues.
- 1.4 Paragraph 1.5 of the Memorandum noted that we may publish a further update following its publication. This document is that update (“the **Update**”).
- 1.5 Unless otherwise stated, terms used in this update are as defined in the Glossary at annex 7 to the Memorandum.
- 1.6 This Memorandum may be further updated following its publication, and parties considering bidding in this award process should check the latest available information on the spectrum awards section of Ofcom’s website.<sup>4</sup>

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<sup>1</sup> [Statement of 13 March 2020: Award of the 700 MHz and 3.6-3.8 GHz spectrum bands](#)

<sup>2</sup> [Statement on the final draft of the Regulations for the award of spectrum in the 700 MHz and 3.6-3.8 GHz frequency bands: Notice of Ofcom’s final draft of the Wireless Telegraphy \(Licence Award\) Regulations 2020: dated 13 March 2020](#)

<sup>3</sup> [Process guidance for potential applicants and bidders in the auction: dated 13 March 2020](#)

<sup>4</sup> [Award of the 700 MHz and 3.6-3.8 GHz spectrum by auction](#)

## 2. Updated information

### Spectrum bands to be awarded

#### 700 MHz

##### Use between 694-790 MHz

- 2.1 In paragraph 2.13 of the Memorandum we stated that the 694-790 MHz band was being used for Programme Making and Special Events (“**PMSE**”) and in paragraph 2.14 we stated that the 470-790 MHz band was being used by White Space Devices (“**WSD**”).
- 2.2 However, we noted in paragraph 3.7 of the Memorandum that PSME users would cease to have access to the 703-790 MHz band from 1 May 2020, and that WSDs would cease to have access to 694-790 MHz from 1 May 2020.
- 2.3 1 May 2020 has now passed, and therefore PMSE use above 703 MHz and use by WSD above 694 MHz are no longer permitted.

##### International allocations and uses within and adjacent to the 700 MHz band

- 2.4 Paragraph 2.16 of the Memorandum stated that following the World Radio Conference in 2019 (WRC-19) a new version of the ITU Radio Regulations was in preparation, which would replace the edition of 2016. This new edition of 2020 is now available.<sup>5</sup> The edition of 2020 shows that footnote 5.311A has now been removed in relation to the 700 MHz band. An updated table of the ITU Radio regulations allocations in the 470-890 MHz band is shown below in Figure 2.1. This also shows the Region 1 entry for 862-890 MHz now as MOBILE rather than Mobile.

**Figure 2.1: ITU Radio regulations allocations in the 470-890 MHz band**

Allocation to services		
Region 1	Region 2	Region 3
<b>460-470</b>	FIXED MOBILE 5.286AA Meteorological -satellite (space-to-Earth) 5.287 5.288 5.289 5.290	
<b>470-694</b> BROADCASTING	<b>470-512</b> BROADCASTING Fixed	<b>470-585</b> FIXED MOBILE 5.296A

<sup>5</sup> [ITU Radio Regulations 2020](#)

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	<p>Mobile 5.292 5.293 5.295</p> <p><b>512-608</b></p> <p>BROADCASTING 5.295 5.297</p>	<p>BROADCASTING 5.291 5.298</p>
	<p><b>608-614</b></p> <p>RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite  (Earth-to-space)</p>	<p><b>585-610</b></p> <p>FIXED MOBILE 5.296A BROADCASTING RADIONAVIGATION 5.149 5.305 5.306 5.307</p>
<p>5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.312</p>	<p><b>614-698</b></p> <p>BROADCASTING Fixed Mobile 5.293 5.308 5.308A 5.309</p>	<p><b>610-890</b></p> <p>FIXED MOBILE 5.296A 5.313A 5.317A BROADCASTING</p>
<p><b>694-790</b></p> <p>MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.312</p>	<p><b>698-806</b></p> <p>MOBILE 5.317A BROADCASTING</p>	
<p><b>790-862</b></p> <p>FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.319</p>	<p>Fixed 5.293 5.309</p>	
<p><b>862-890</b></p> <p>FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323</p>	<p><b>806-890</b></p> <p>FIXED MOBILE 5.317A BROADCASTING 5.317 5.318</p>	<p>5.149 5.305 5.306 5.307 5.320</p>



## Factors affecting use of the award bands

### 700 MHz

- 2.5 In paragraph 3.4 of the Memorandum we said that we expected the 700 MHz clearance process to be completed by Q2 2020. However, the final two 700 MHz clearance events, scheduled for April 2020, were paused until the COVID-19 risk had subsided. These two remaining clearance events were subsequently completed in August 2020.<sup>6</sup>
- 2.6 In paragraph 3.5 of the Memorandum we stated that it was possible that Arqiva would still be transmitting some DTT channels using the centre gap (738-758 MHz) when the roll out of mobile services in other parts of the 700 MHz band began and that transmission of these channels had been permitted by the issue of an interim multiplex licence.
- 2.7 On 17 June 2020, Ofcom granted a new licence to Arqiva<sup>7</sup> which authorises use of 742-758 MHz. That licence has a termination date of 30 June 2022, but can also be terminated on three months' notice from Ofcom.
- 2.8 As shown in the template 700 MHz licence<sup>8</sup> at Annex 1 of the Memorandum, any holder of one of the new 700 MHz licences which authorises use of the 700 MHz centre-gap frequencies will be required to give Ofcom and Arqiva three months' notice of its intention to use those frequencies. This means that Ofcom can terminate Arqiva's authorisation to use the centre-gap frequencies so as to ensure they are cleared at the time that the new licensee intends to begin use of the 700 MHz centre-gap frequencies.

### 3.6-3.8 GHz

#### Interim co-ordination of receive only earth stations and fixed links that will apply during the interim period only

- 2.9 Paragraph 3.24 of the Memorandum explained that at that time there were seven PES licences and four grants of RSA that provided recognition of the use of frequencies in the 3.6-3.8 GHz band. The seven PES licences and three out of the four grants of RSA ended on 1 June 2020. The remaining grant of RSA ended on 1 September 2020.
- 2.10 However, the interim protections for fixed links operating in the 3.6-3.8 GHz band will remain until 23 December 2022. Figure 3.2 of the Memorandum showed the end date and location of the remaining satellite earth station for which there was a grant of RSA and the fixed links. Figure 2.2 below shows the updated position with the remaining satellite earth station removed. The 'Notice: Interim coordination procedure for 3.6-3.8 GHz spectrum access licences' and the 'Notice: In-band restrictions zones around satellite earth stations in the 3.6-3.8 GHz band' have been amended to remove the reference to the above

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<sup>6</sup> [Ofcom news article 20 August 2020: 'The biggest Ofcom project you've probably never heard of'](#)

<sup>7</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0034/197197/Mux-E-interim-licence-20200617.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0034/197197/Mux-E-interim-licence-20200617.pdf)

<sup>8</sup> See Schedule 1, paragraph 3(g).

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satellite earth station. Copies of the updated notices are provided at annexes 1 and 2 to this Update.

Figure 2.2 Revocation date and location of fixed links



## The licences

### Use it or lose it conditions

- 2.11 On 16 July 2019, DCMS published a consultation document ‘Implementing the European Electronic Communications Code’.<sup>9</sup> This consultation included, amongst other things, proposals relating to the inclusion of ‘use it or lose it’ conditions in WT Act licences.
- 2.12 DCMS subsequently published the ‘Government response to the public consultation on implementing the European Electronic Communications Code’ on 22 July 2020.<sup>10</sup> In that document they stated that they have decided not to transpose the European Electronic Communications Code in line with their previously stated preferred approach of including ‘use it or lose it’ conditions in future mobile spectrum licences. They would maintain Ofcom’s broad powers to impose conditions on spectrum licences in line with its general duties and include a requirement for Ofcom to consider whether such conditions would promote efficient use of spectrum when designing competitive awards.
- 2.13 We considered the inclusion of ‘use it or lose it’ conditions in paragraphs 10.18 to 10.21 of our consultation ‘Award of the 700 MHz and 3.6-3.8 GHz spectrum bands’ dated 18 December 2018.<sup>11</sup> Paragraphs 8.32 to 8.39 of our subsequent statement of 13 March 2020<sup>12</sup> provided details of our reasons for not including them.
- 2.14 In light of DCMS’s response to its consultation on implementing the Electronic Communications Code, we can confirm that the WT Act licences in respect of the 700 MHz and 3.6-3.8 GHz spectrum that we are awarding will not include ‘use it or lose it’ conditions.

### Limiting exposure to electromagnetic fields (EMF)

- 2.15 In paragraph 7.3 of the Memorandum we explained that we were in the process of consulting on measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF).<sup>13</sup>
- 2.16 Since we published the Memorandum, we have published a statement<sup>14</sup> setting out our decision to include a new condition in all Wireless Telegraphy Act licence classes which authorise equipment to transmit at powers above 10 Watts EIRP requiring licensees to

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<sup>9</sup> [DCMS consultation of 16 July 2020: Implementing the European Electronic Communications Code](#)

<sup>10</sup> [Government response to the public consultation on implementing the European Electronic Communications Code - dated 22 July 2020](#)

<sup>11</sup> [Consultation of 18 December 2018: Award of the the 700 MHz and 3.6-3.8 GHz spectrum bands](#)

<sup>12</sup> [Statement of 13 March 2020: Award of the 700 MHz and 3.6-3.8 GHz spectrum bands](#)

<sup>13</sup> See Ofcom’s consultation entitled ‘Proposed measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF)’ dated 21 February 2020, available at: <https://www.ofcom.org.uk/consultations-and-statements/category-1/limiting-exposure-to-emf>

<sup>14</sup> See Ofcom’s statement on ‘Measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF)’ of 5 October 2020, available at: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0014/204053/emf-statement.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0014/204053/emf-statement.pdf)

comply with the ICNIRP Guidelines for the protection of the general public. We are now consulting<sup>15</sup> on the specific drafting changes we have made to the wording of the EMF licence condition and on our 'Guidance on EMF Compliance and Enforcement', as well as a trial version of our EMF calculator.<sup>16</sup>

- 2.17 We anticipate deciding on the precise wording of the EMF licence condition and our 'Guidance on EMF Compliance and Enforcement' before the grant of licences and intend to include the EMF licence condition in the licences when they are granted. If, however, we decide on the precise wording after the grant of licences in the award then we will vary the licences as soon as possible after that decision.

## The award process

- 2.18 On 13 March 2020 we published<sup>17</sup> the 'Statement on final draft of the auction regulations for the award of the 700 MHz and 3.6-3.8 GHz bands: Notice of Ofcom's final draft of the Wireless Telegraphy (Licence Award) Regulations 2020'. In the statement we said that we would make the Regulations once we are certain that stakeholders will either not seek to challenge the decisions set out in that statement, or any such challenges have been disposed of. We have now made the regulations on 3 November 2020 and these will come into force on 18 November 2020. The Regulations will be officially published on the website [www.legislation.gov.uk](http://www.legislation.gov.uk) and should be available shortly.
- 2.19 In footnote 52 of the Memorandum we provided a link to the 'Process guidance for potential applicants and bidders in the auction'. This document has now been updated and an updated link is below.<sup>18</sup>
- 2.20 In paragraph 6.25 of the Memorandum we set out a list of advisors to Ofcom appointed at that time in connection with certain aspects of the award process and advised that others may be added to the list nearer the auction. The current updated list of advisors is: DotEcon Ltd, Auctionomics, NIIT Technologies, NCC Group, Smith Institute for Industrial Mathematics and System Engineering, KPMG, Pen Test Partners Ltd and Deloitte.
- 2.21 In paragraph 6.26 (second bullet) of the Memorandum detailing 'Preparations for the Principal Stage', we said that once we had qualified applicants as bidders, and after the time allowed for withdrawals, we would notify each bidder of passwords and make available to each bidder digital certificates required to access and use the electronic auction system and verify its identity. In brackets we added that these will be changed for

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<sup>15</sup> See Ofcom's consultation on 'Implementation of measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF)' of 5 October 2020, available at:

[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0017/204056/emf-implementation-consultation.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0017/204056/emf-implementation-consultation.pdf)

<sup>16</sup> See Electromagnetic Fields Calculator trial version, available at:

<https://www.ofcom.org.uk/consultations-and-statements/category-1/limiting-exposure-to-emf>

<sup>17</sup> [Statement on the final draft of the Regulations for the award of spectrum in the 700 MHz and 3.6-3.8 GHz frequency bands: Notice of Ofcom's final draft of the Wireless Telegraphy \(Licence Award\) Regulations 2020: dated 13 March 2020](#)

<sup>18</sup> [Process guidance for potential applicants and bidders in the auction: dated 4 November 2020](#)

the actual auction. The text in brackets is no longer applicable and passwords will not be changed.

### **Notice: Interim coordination procedure for 3.6-3.8 GHz spectrum access licences**

- 2.22 Annex 4 to the Memorandum was the 'Notice: Interim coordination procedure for 3.6-3.8 GHz spectrum access licences'. In paragraph 2.3 we said that for coordination purposes we required 3.6-3.8 GHz spectrum access licensees to submit technical details in batches of at least 100. We are no longer requiring a minimum batch size and the text relating to this has been updated in the copy of the Notice which is provided at Annex 1 to this Update.

## A1. Notice: Interim coordination procedure for 3.6-3.8 GHz spectrum access licences

A1.1 This annex has been [published separately](#) on the Ofcom website.

## A2. Notice: In-band restriction zones around satellite earth stations in the 3.6-3.8 GHz band

A2.1 This annex has been [published separately](#) on the Ofcom website.