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# Three's response to Ofcom's consultation on defragmentation of spectrum holdings in the 3.4-3.8 GHz band

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## Non-confidential

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[Three.co.uk](http://Three.co.uk)

# Executive Summary

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Three welcomes the opportunity to respond to Ofcom's Consultation on defragmentation of spectrum holdings in the 3.4-3.8 GHz band. This Consultation sets out Ofcom's proposals to facilitate defragmentation through two regulatory interventions.

Three supports Ofcom's initiative to introduce a negotiation stage after the principal stage of the 2020 auction. Three remains interested in potential trading with other MNOs ahead of the auction and we are currently running a process through which these trades may proceed. If appropriately designed, Ofcom's proposed negotiation stage can complement Three's trading process and help defragment the band.

Although Three does not know the preferences of other MNOs, it is quite possible that defragmentation of the band may require several rounds of trading. Three's trading process would give participants the chance to get themselves into their preferred locations ahead of Ofcom's negotiation stage, to improve their chances of contiguity at the end of the process. Bidders could then agree the allocation of the new 3.6 GHz spectrum and (provisionally) agree any post-auction trades during Ofcom's negotiation process.

We support the option of having principal stage winners unanimously agree their new allocations of 3.6 GHz spectrum, as that is likely to deliver a better outcome for the industry. However, we consider that all licence holders should be included in the negotiation phase for the industry to provisionally agree trades involving other spectrum (including already-allocated 3.4 GHz and 3.6 GHz spectrum). Ofcom should not allow partial agreement between a subset of MNOs, as this weakens incentives to reach unanimous agreement and can prevent optimal outcomes from occurring.

Ofcom also proposes that winners of less than 20 MHz in the upcoming auction could only place bids in the assignment round for the top or bottom positions of the 3.6-3.8 GHz band. We continue to advocate a superior approach that will facilitate rather than hinder defragmentation of the band. Ofcom should ensure that if the holder of 3675-80 MHz wins any 3.6 GHz spectrum, it is automatically given contiguity with its existing holdings, and that any new entrants should automatically be placed at the top of the 3.6-3.8 GHz band.

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# 1. All 3.4-3.8 GHz holders should participate in the negotiation phase and unanimous agreement should be required.

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## 1. Executive Summary.

- 1.1. In this Section, we explain that all holders of 3.4-3.8 GHz spectrum should be invited to participate in Ofcom's proposed negotiation stage and that unanimous agreement is likely to deliver a less fragmented band.
- 1.2. Ofcom appears to have overlooked the value of all 3.4-3.8 GHz spectrum holders being present during the negotiation phase. As well as agreeing the new allocations of 3.6 GHz spectrum, parties can also provisionally agree post-auction trades. However, if some holders of 3.4 or 3.6 GHz spectrum do not win 3.6 GHz spectrum in the auction, they would not be present for the negotiation stage. This may result in a sub-optimal configuration of the 3.4-3.8 GHz band.
- 1.3. Ofcom should not allow a fallback option of partial agreement because it can prevent optimal outcomes, which would be likely to occur if only unanimous agreement were allowed. This would run contrary to Ofcom's duties and the purpose of the negotiation stage.

## 2. All holders of 3.4-3.8 GHz spectrum should participate in the negotiation phase, rather than just winners of 3.6 GHz spectrum.

- 2.1. Ofcom proposes that winners of 3.6 GHz spectrum can choose to enter the negotiation phase, during which they can agree their assignments for the newly-awarded 3.6 GHz spectrum and provisionally agree any post-auction trades without Ofcom's involvement.
- 2.2. We agree with this proposal but the negotiation phase should be open to all holders of 3.4-3.8 GHz spectrum. With 120MHz of 3.6 GHz spectrum being auctioned and four MNOs competing, it is quite possible that one or more holders of 3.4 or 3.6 GHz spectrum may not win additional 3.6 GHz spectrum in the auction.
- 2.3. For instance, [X].
- 2.4. [X].
- 2.5. [X].
- 2.6. [X].

Figure 1: [X].

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2.7. [X].

2.8. [X].

2.9. [X].

2.10. [X].

2.11. We are not suggesting that an unsuccessful bidder in the principal stage should be able to veto a particular allocation of the newly-awarded 3.6 GHz spectrum. Only winning principal stage bidders should be able to agree (or disagree) particular allocations of the new 3.6 GHz spectrum. However, the discussion of post-auction trades and the overall configuration of the 3.4-3.8 GHz band is more likely to be fruitful if it includes all holders of spectrum in the band.

2.12. We therefore propose the following structure for the negotiation stage:

- After the winning principal stage bidders have placed their assignment bids, all holders of 3.4-3.8 GHz spectrum are invited to participate in the negotiation phase;
- If all winning principal stage bidders agree to enter, the negotiation phase proceeds. Holders of existing 3.4-3.8 GHz spectrum (but that do not win 3.6 GHz spectrum in the auction) could choose to join the negotiations;
- Winning bidders of 3.6 GHz spectrum would then attempt to unanimously agree the assignment of the new 3.6 GHz spectrum. If such agreement were successful, Ofcom would assign the new frequencies accordingly. Otherwise, the assignment stage bids would determine the allocation of the new 3.6 GHz frequencies;
- All participants would simultaneously attempt to agree a set of trades that delivers the final configuration of the 3.4-3.8 GHz band. If there was unanimous agreement (between winners) on the allocation of the new 3.6-3.8 GHz spectrum and agreement (between all licence holders) for the overall band configuration, Ofcom would consider the proposed trades and conduct its competition assessment following the auction (if necessary). Ofcom would then issue final licences to all participants according to the agreed band plan (provided no competition concerns arose).

3. A fallback option of partial agreement could lead to sub-optimal outcomes.

- 3.1. Ofcom sets out two sub-options for the proposed negotiation phase:
- **Unanimous agreement:** Winners must unanimously agree the new allocations or the outcome is determined by the assignment round bids; or
  - **Partial agreement:** If unanimous agreement fails, there is a fallback option of partial agreement between a subset of winners. If partial agreement is not achieved, the outcome is determined by assignment round bids.
- 3.2. In both options, if unanimous agreement is reached within two weeks, Ofcom would not publish or process the assignment round bids. However, in the “partial agreement” option, if parties do not unanimously agree within two weeks, a subset of winners would have an additional week to inform Ofcom that they wish their spectrum to be treated as a single contiguous block for the purpose of the assignment stage.
- 3.3. We consider that both options have merit and the case for either option is finely balanced. Taking all factors into account, however, we find that the unanimous agreement option is more likely to lead to defragmentation of the band.
- 3.4. The main advantage of the partial agreement option is that no winner of 3.6 GHz spectrum ([redacted]) could prevent two other MNOs from agreeing to have their 3.6 GHz spectrum adjacent to each other ([redacted]). The main disadvantage is the reverse of this, i.e. two MNOs could have an incentive to leave the third MNO without contiguity. In other words, having partial agreement as a fallback option can cement a sub-optimal allocation because it can weaken incentives for parties to reach unanimous agreement, as Ofcom accepts.<sup>1</sup>
- 3.5. Overall, we think unanimity may be preferable. We agree with Ofcom that the optimal outcome is likely to be one that is unanimously agreed.<sup>2</sup> We present an example below that illustrates how having a partial fallback option can affect winning principal stage bidders’ incentives and make unanimous agreement less likely. For instance, [redacted].
- 3.6. [redacted].

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<sup>1</sup> Para 2.50, [https://www.ofcom.org.uk/data/assets/pdf\\_file/0011/152102/consultation-defragmentation-spectrum-holdings.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0011/152102/consultation-defragmentation-spectrum-holdings.pdf)

<sup>2</sup> Para 2.52: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0011/152102/consultation-defragmentation-spectrum-holdings.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0011/152102/consultation-defragmentation-spectrum-holdings.pdf)

Figure 2: [X].

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3.7. [X].

3.8. However, if it were possible for a subset of MNOs to “partially agree”, it is less likely that these optimal allocations would be unanimously agreed. Two MNOs could deliberately fail to reach unanimous agreement, safe in the knowledge that they could guarantee being awarded adjacent 3.6 GHz spectrum and then trade their 3.4 GHz and 3.6 GHz spectrum after the auction. By doing this, they would get contiguity for free but crucially, the third MNO would not get contiguity.

3.9. [X]. This situation is clearly sub-optimal and is a foreseeable outcome if Ofcom allows partial agreement as a fallback option. Hence, we find that Ofcom should require unanimous agreement and not allow a partial fallback option.

Figure 3: [X].

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## 2. Ofcom should not impose restrictions on winners of less than 20MHz.

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### 4. Executive Summary.

- 4.1. In this Section, we explain that Ofcom should not restrict winners of less than 20 MHz to bidding only for the top or bottom of the band in the assignment stage. Instead, Ofcom should automatically grant contiguity to the holder of 3675-80 MHz if it wins additional spectrum and Ofcom should place any new entrants at the top of the 3.6-3.8GHz band.

### 5. Ofcom should give automatic contiguity to the holder of 3675-80 MHz and place any new entrants at the top of the 3.6-3.8 GHz band.

- 5.1. In response to Ofcom's December 2018 Consultation, Three argued that the holder of 3675-80 MHz should be guaranteed contiguity with its existing holdings if it wins more spectrum. O2 also implied support for this proposal.<sup>3</sup> Ofcom appears to have rejected this proposal because a bidder (other than the 3675-80 MHz holder) may want to express its value for the lower part of the 3.6-3.8 GHz band, but we consider this concern to be misplaced.
- 5.2. If there were no pre-auction trades, giving Three guaranteed contiguity would prevent further fragmentation of the band. [X].
- 5.3. The pre-auction trading process that Three is running can further mitigate this concern. If an MNO wished for any spectrum it won in the 3.6-3.8 GHz auction to be sufficiently close to its existing holdings, it could express a preference for pre-auction trades that resulted in its existing holdings moving higher in the band.<sup>4</sup> This would include any option where [X].
- 5.4. As an additional measure, Ofcom should allocate any new entrants to the 3.6-3.8 GHz band to the top part of the band. This proposal was shared by O2 in response to Ofcom's December 2018 Consultation.<sup>5</sup> This would prevent further fragmentation and never hinder MNOs' prospects of contiguity and proximity.

### 6. Ofcom's proposed restriction on winners of less than 20 MHz is not necessary.

- 6.1. If Ofcom allows partial agreement (rather than only unanimous agreement), a subset of winners could "partially agree" and have their spectrum treated as a single contiguous block. This would completely prevent the possibility of their new 3.6-3.8 GHz spectrum being separated by another winner (or winners).
- 6.2. If Ofcom only allows unanimous agreement, the proposed restriction is only effective in a narrow set of circumstances, where all of the following apply:
  - A bidder wins less than 20 MHz in the auction; and

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<sup>3</sup> O2 argued that if Three wins any spectrum in the 3.6-3.8 GHz auction, it should be "placed adjacent to its existing holdings" and that "any other assignment would be obviously inefficient".

<sup>4</sup> For example, through our pre-auction trading process, [X]. Other MNOs could also use our trading process for the same purpose.

<sup>5</sup> Para 175, [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0021/143490/telefonica.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0021/143490/telefonica.pdf)



## Ofcom should not impose restrictions on winners of less than 20MHz. continued

- The principal stage winners are unable to unanimously agree on the allocation of the new 3.6-3.8 GHz spectrum, and so the allocation is determined by the bids in the assignment stage; and
  - The winner of less than 20 MHz has both the incentive and ability to insert itself between two rivals.
- 6.3. Firstly, all winners would have incentives to unanimously agree to an allocation, even if it meant some individual MNOs did not have their first preference. The alternative is that the outcome is determined by the assignment stage bids, which could mean one or more MNOs end up with a worse outcome and all MNOs could have to pay for their assignments.
- 6.4. Second, even if a winner of less than 20 MHz had the incentive to insert itself between two rivals, doing so would be difficult with four principal stage winners. Suppose an MNO won less than 20 MHz and wanted to insert itself between two other MNOs. The MNO would not know which blocks the other two MNOs would bid for (and secure) and therefore could not be certain of inserting itself between them. The MNO would incur costs through its assignment stage bids and risk being allocated spectrum that was not between the two other MNOs' assignments.

**Figure 4: Assignment stage bidding options with four principal stage winners.**

