



Virgin Media O2 response to Ofcom's proposal to align licence terms in the 3.4-3.8 GHz band

Non-confidential version

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Executive Summary

The selective rewriting of history inherent in Ofcom's proposal greatly concerns us

Virgin Media O2 (VMO2) welcomes the opportunity to respond to Ofcom's proposal for a licence change to the 120 MHz of 3.x GHz spectrum for which Three currently pays ALFs. The proposal is both novel, somewhat unexpected but would also involve a selective rewriting of history. This is something we are greatly concerned about, in terms of both:

- the precedent it sets regarding our ability to rely on our understanding of existing and expectations regarding future regulatory contracts, but also
- on what it means for the risks that differing MNOs have been exposed to since 2018 and the way in which the existing licences affected the actions taken by MNOs in auctions and secondary markets over the past years.

If history is to be re-written then it must be done symmetrically to “achieve parity”¹ between the MNOs, to use Ofcom's words. Ofcom's proposal disregards whether parity will be similarly achieved for other MNOs that acquired their 3.4-3.8 GHz spectrum through auctions.

If history is not to be rewritten, then, we note that the lump-sum payable would be £37m higher when calculated based on a forward-looking basis instead. Moreover, we identify several implications of Ofcom's approach that are unreasonable, in conflict with the regulatory decisions at the time and that market participants could not have reasonably anticipated.

The approach taken by Ofcom is insufficient and incomplete

Ofcom is not transparent as to the nature of the problem it is trying to solve. The solution needs to be proportionate to the problem and, without clearly articulating the problem, Ofcom has not conducted a proper legally robust consultation. Further, the consultation provides no cost-benefit analysis, which would be required to justify the repricing of a public asset, to the extent proposed in the current consultation.

The proposal will greatly deteriorate the financial position of HM Treasury (HMT) compared to what it would receive ALFs in line with existing regulatory decisions. We establish the adverse impact in net present value at £415m (in 2022 prices). Ofcom must account for this impact on HMT – and by extension on UK tax payers – as part of its assessment of a possible intervention. It is incumbent on Ofcom to demonstrate that this impact is both

¹ See paragraph 3.21 of Ofcom's Consultation.

necessary and proportionate for achieving its objective with the benefits of intervention outweighing its broader costs (including societal impact).

Ofcom said it would only undertake a review 3.x GHz ALFs were there to be strong evidence of material misalignment between the level of fees and the market value of this spectrum.² Now Ofcom proposes an intervention which involves a major departure from what it decided on market value of 3.4 and 3.6 GHz in its 3.x GHz ALF Statement.³

To achieve the appropriate legal standard, Ofcom must conduct a new and transparent consultation which more thoroughly looks at the problem(s) Ofcom wants to address, at the approaches available to resolve these problems and then evaluates the identified approaches based on their comparative merits. Where it proposes to depart from existing regulatory decisions, Ofcom must provide an objective justification.

Design of intervention must be problem-based

Ofcom has not provided clarity on what its proposal is brought in to address. It is unclear whether the complaints of Three and another MNO relate to:

- a specific issue to do with defragmentation of the 3.4-3.8 GHz band; or
- an issue to do with spectrum trading more generally:
 - either the negative impact of ALFs *per se*; or that
 - the level of ALFs generally being too high and justifying the application of a discount on current spectrum pricing to remove this barrier to trading.

These specific problems lend themselves to different solutions, which may not be the conversion of ongoing ALFs to minimum fixed term licences through payment of a lump-sum.

Changing licence terms is not required to achieve defragmentation

If Ofcom is simply seeking to secure defragmentation of the 3.4-3.8 GHz band, then there is an alternative solution already available to it, that does not carry the legal and mispricing risk of its proposal. The precedent from the 3.4 GHz auction (where Three was given opportunity to enter the assignment stage) demonstrates that existing legislation would allow making spectrum licences fungible by transferring ALFs payable to a different specific frequency. ALFs can follow the licensee, they are not tied to the frequency. This would thus allow the

² See paragraph 5.19 of Ofcom 2019 Statement on the ALFs for UK Broadband's 3.4 GHz and 3.6 GHz spectrum.

³ See page 1 of Ofcom's 2019 Statement on the ALFs for UK Broadband's 3.4 GHz and 3.6 GHz spectrum.

market to deliver defragmentation of the 3.4-3.8 GHz band independent of the precise location of (and MNO owning) the 120 MHz of ALF-bearing 3.x GHz spectrum.

If ALFs are a barrier to trading spectrum between different bands, or selling a spectrum holding in one band, then this must be true for all ALF-bearing spectrum

As Ofcom is opaque about its rationale for intervention we are required to engage with justifications for intervention that go beyond 3.4-3.8 GHz defragmentation.

- *Is it the intrinsic nature of ALFs that mean they act as a barrier to trading?* If that is true for 3.x GHz spectrum then it must be true for all ALF-bearing spectrum. In such scenario it would be appropriate for Ofcom to abolish ALFs in their current form and for this spectrum to return to the previous AIP form of pricing, like other forms of spectrum that has the same licence terms as Three's ALF-bearing 3.x GHz spectrum.
- *If it is the level of ALFs that poses the risk to reduce the incentives or ability to trade, then this risk must be reduced symmetrically.* We reviewed the repricing of spectrum value inherent in Ofcom's proposal to determine the discount that must be applied to other mobile spectrum. The lump-sum proposed by Ofcom grants Three a £156m net present value discount (or 21%) on the ALFs that Three would have otherwise paid. If this is Ofcom's concern, it must apply the same discount to ALFs payable in other bands.

Ofcom must conduct a thorough evaluation of options available to determining the lump-sum

To support such an evaluation (which is required only if Ofcom concludes that the proposed conversion of licence terms remains the most appropriate approach), we identified several available forward- and backward-looking options.

- *Forward-looking:* the lump-sum could be set at Three's net present value of the projected ALFs it would pay under either
 - existing regulatory decisions (with ALFs in line with the 3.x ALF Statement). Based on credible assumptions about inflation and operator WACC, we estimate this lump-sum at £727m, or
 - alternative regulatory decisions that Ofcom deems more appropriate in light of new evidence (eg, if it wants the market value of 3.6 GHz spectrum to be based on the 3.6 GHz auction price). This could allow Ofcom to determine the lump-sum in a way that deviates from existing regulatory decisions when it can justify this.

- *Backward-looking*: there appear to be several tractable methodologies for calculating a lump-sum on this basis:
 - using Ofcom’s approach including proposed determination of market values based on the auction prices of equivalent spectrum bands leads to the £571m that Ofcom determined; or
 - using Ofcom’s approach yet with market value determination in line with existing regulatory decisions (ie, with determination of the market value of 3.6 GHz spectrum based on the 3.4 GHz auction price) increases the payable lump-sum to £865m. Compared to the £571m this shows that the repricing of Three’s 3.6 GHz spectrum which is implicit in Ofcom’s proposal significantly reduces the lump-sum Three would pay; or
 - a new benchmark based on what the price of 3.4 GHz spectrum would have been in the counterfactual auction in which the full 190 MHz of spectrum in that sub-band would have been auctioned in one go. The auction price in this credible counterfactual would have been 11% below what MNOs paid for the lots they acquired in this auction. We would observe that history can also be rewritten to this point, as much as it can be rewritten to the closing round of the auction. In this case, a symmetric rewriting of history would require retrospective adjustment of the price at which MNOs acquired 3.4 GHz spectrum (and compensation for the time value of money).

Conclusions

Ofcom’s proposal and the assessment it presented in its support falls well short of what we expect from our regulator. Ofcom must conduct a new consultation which looks at this matter afresh and that involves a much more open and robust evaluation of the purported problem and the intervention options available to address this problem.

The lack of clarity about the rationale for its proposal makes it hard for us to engage on what the right solution is. However, we would observe that if the rationale for change is to reduce barriers to spectrum trading more generally, then these barriers should be reduced for all ALF payers.

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Main response

The selective rewriting of history inherent in Ofcom's proposal greatly concerns us

Ofcom's proposal would selectively rewrite the history of mobile markets. It would retrospectively apply the same licence terms to spectrum that was acquired and held by MNOs in very different circumstances and where MNOs had differing opportunities in terms of what they could (not) do with their spectrum over time. Ofcom positions its proposal as an alignment of spectrum terms for licences in equivalent bands. Whilst there may be benefits to this, we are concerned about the rewriting of history *of itself* (which a responsible regulator must avoid in most circumstances) and its implications going forward and backward-looking.

Going forward, this proposal signals that Ofcom would be willing to intervene in a way that radically changes the regulatory contract that MNOs believe they acted under (and would act against going forward). This would reduce the confidence that MNOs would have in their regulator being cautious to depart from its past regulatory decisions, and only doing so if it could justify that its proposal would deliver substantial benefits to consumers and competition in regulated markets, or in the face of a demonstrable change in circumstances.

Looking back, this proposal means that MNOs acted based on their reasonable expectations of the regulatory contract that applied at the time, yet which retrospectively proves incorrect. This includes decisions that MNOs took in developing strategy for and bidding in the 3.4 and 3.6 GHz auctions, their later engagement in secondary markets, and Three's decisions to not surrender its 3.x GHz ALF-bearing spectrum before entering the 3.4 and 3.6 GHz auctions. In taking these decisions, MNOs will have relied on their beliefs formed based on market conditions, the existing regulatory contract, and the regulatory decisions they could reasonably anticipate over the years ahead.

The proposal would retrospectively change the risk profile of just one company

Through its proposal, Ofcom would not expose Three to the full cost of the risk profile it chose by keeping its ALF-bearing 3.x GHz on distinct licence terms rather than surrendering some or all of this spectrum before participating in the 3.4 and 3.6 GHz auctions. The latter would have enabled Three to acquire this spectrum on terms identical to that of spectrum that other MNOs hold in this band. Ofcom effectively proposes to rewrite the regulatory contract in a way that allows Three to 'acquire' identical long-term certainty yet without

having faced the risk that other MNOs encountered in purchasing spectrum in auctions at a fixed price.

The risk profile of Three's 3.x GHz spectrum (with only 20 out of its 140 MHz acquired through auctions⁴) differs radically from those of the other MNOs that acquired all their 3.x GHz spectrum through auctions. Paying a fixed price directly following the auction means the cost of spectrum acquired is sunk at that point in time. MNOs have made their bet. If value derived through spectrum deployment or potential recovery of value in secondary market falls short, they are not able to protect or recoup the full cost of their investment. In contrast, Three has had the option to reduce its exposure to the cost of its 120 MHz of ALF-bearing spectrum on an annual basis. It could surrender this spectrum when fees exceeded the value it can derive from it. Moreover, it could have benefitted from potential of 3.x GHz ALF reductions at some point, an upside not available to MNOs that paid a fixed price.

Considering the above, 3.x GHz ALF-bearing spectrum and spectrum acquired in the 3.x auctions are not the same. They have historically had different risk profiles because of the differing licence terms, timelines and certainties that applied. The future value of ALFs reflects the risk benefit of the deferred payments being made by MNOs liable to pay ALFs. It is not something that Ofcom can just magic away by allowing Three to attain the same licence terms that apply to 3.x GHz spectrum acquired through auctions by paying a lump-sum.

Three decided to keep its 40 MHz of pre-existing licences out of the 3.4 GHz auction (it could have surrendered its spectrum and then bid to acquire all its spectrum at this frequency on the same licence terms) *and* out of the assignment stage (this would have made the location of the spectrum fungible but with that amount of spectrum guaranteed to be won). Three's preference to keep its pre-existing spectrum out of the auction means that it, at that time, favoured spectrum under the previously assigned licence terms over spectrum under the licence terms that applied to spectrum acquired through the auction and/or re-allocated through assignment stage. Three thus made its bet but now Ofcom's proposal would allow it to attain the same licence terms on its 40 MHz of spectrum that it decided against years ago.

Compare this to the other MNOs. Telefónica UK (TUK) acquired 40 MHz of spectrum with a minimum 20-year duration in the 3.4 GHz auction and risked its investment capital to do that. This concerned an investment decision TUK took at the time with the information available to it and with expectations based on market conditions and regulation that would apply to itself

⁴ 120 MHz was obtained through Three's acquisition of UK Broadband.

and rival MNOs over the years ahead. BT/EE and Vodafone acquired 3.4 GHz spectrum on a similar basis.

Three, in contrast, already had 40 MHz of 3.4 GHz spectrum (plus 80 MHz of 3.6 GHz spectrum) through its acquisition of UK Broadband and it knew that it would have to pay ALFs on this spectrum from 2019 onward. It thus entered the 3.4 GHz auction with a totally different risk profile and this was plausibly reflected in its actions before and during the auction. In the 3.4 GHz auction, Three acquired 20 MHz of spectrum at the margin. By being the last bidder to reduce demand, it set the price that Ofcom used to set ALFs payable for its other spectrum in the 3.4-3.8 GHz band. It could, for the next 20 years, reduce its exposure to these ALFs if fees proved too costly and no trading partner could be found, by surrendering its ALF-bearing spectrum, without the risk of writing off sunk capital. This option was not available to MNOs that purchased 3.4 GHz spectrum at a fixed price.

What Ofcom now proposes is to place Three into the same position as TUK in 2018, but without exposing Three to the same risk that TUK faced in relation to that auction. At the time of the 3.4 GHz auction, the spectrum already held by Three and that purchased in the auction were not the same thing. As such, they cannot be retrospectively aligned, by now giving Three opportunity to 'acquire' this spectrum at same price and against same licence terms yet without having regard to differences in risk profiles across MNOs over time.

Changes to licence terms in the 3.4-3.8 GHz band must be symmetric

Ofcom proposes to change both the payment mechanism (from annual to one-off) and the minimum duration for Three's 3.x GHz licences. Ofcom (at paragraph 3.21 of its Consultation) says, *"this approach should mean that all holders of Spectrum Access licences in the 3.4 GHz and 3.6 GHz bands would achieve parity with respect to their holdings in these bands."* This, Ofcom believes, will reduce barriers to trade improving scope for trades that reduce fragmentation in the 3.4-3.8 GHz band.

Ofcom's stated objective thus is to bring Three to the same position in relation to its ALF-bearing spectrum compared to spectrum of equivalent frequency that was acquired through auctions. Setting aside that this cannot be achieved because of differences in the spectrum held by MNOs as discussed above, Ofcom's objective should be broader. It must look at the changes necessary to the licence terms of all MNOs holding spectrum in the 3.4-3.8 GHz band that would make it reasonable to apply the same licence terms to all spectrum in this band. Only this will support regulatory interventions that are symmetrical with regard to all MNOs that hold spectrum in this band. Critically, clearly understanding the objective of this change is fundamental to determining how such "parity" can be achieved.

If changes are required to the value of spectrum licence fees to reduce barriers to trading, for example, then in order not to unduly discriminate, Ofcom must “achieve parity” and apply similar changes to the ALFs paid on other bands.

Achieving parity with regard to historical risk will also be an important consideration. A backward-looking analysis would be deficient if it did not create symmetric conditions for all licensees at the starting point of the analysis. Ofcom should look to act symmetrically so as not to re-write the regulatory contract just for one player. It is entirely tractable to do this, given the information available. Ofcom can consider the impact that a different regulatory contract may have had on bidding in the 3.4 and 3.6 GHz auctions and engagement in secondary markets, for example.

- Three decided not to put the location of its 3.4 GHz spectrum at risk by participating in the assignment stage of the 3.4 GHz auction. That decision will have depended on its expectations for the licence terms that would apply to its ALF-bearing 3.4 GHz spectrum when (not) participating in this auction.
- In relation to secondary markets, MNOs’ expectations in relation to 3.x GHz ALFs and other relevant regulation may have affected the terms of trades that were agreed and it is possible that other trades were not agreed because of their expectations but could have been agreed in case MNOs had held differing expectations on the regulatory pricing of 3.4-3.8 GHz spectrum. Ofcom’s current proposal puts an axe at the root of what were reasonable expectations for MNOs at the time.

The approach taken by Ofcom is insufficient and incomplete

A thorough evaluation of purported harm and options available to address harm must underpin regulatory decisions

We would expect Ofcom to have provided a far more detailed description of the problem it is trying to solve and to have presented evidence that allows stakeholders to understand the nature and scale of this harm, including how it relates to the differences in licence terms between differing spectrum.

Ofcom posits that the difference in licence terms between spectrum within the 3.4 and 3.6 GHz bands respectively gives rise to barriers to trade. Yet the only substantiation of this ‘conclusion’ are the complaints it received from Three and one other MNO on this matter.

Whilst it describes the differences in licence terms between spectrum types in Table 3.1 of its Consultation, it does not indicate which differences are most relevant to the problem that

was complained about and that it wants to address. This understanding is surely of great relevance to what the problem is, and how it can be resolved.

For instance, Ofcom is not clear whether the problem it is trying to solve relates to just defragmentation of the band, or rather disposal of spectrum by Three? The two modes of trading might give rise to very different regulatory solutions as we discuss below. Absent a clear description of the problem at hand, there can be no informed consultation about the proportionality and suitability of different solutions, as well as which benefits could be delivered by solutions being implemented.

Also, Ofcom did not consider alternative steps that MNOs (as spectrum holders), potential trade partners or regulator could take to improve prospects for trading that would not require the proposed licence change.

Consultations are meant to be just that, consultative. Where there are different ways of achieving the same outcome (and/or of evaluating the scale of purported harm), they should be evaluated using a cost-benefit analysis. All the analysis that is required must be sufficiently robust to withstand profound and rigorous scrutiny.

Instead, this consultation presents one option, does not engage with any cost-benefit analysis (contrary to Ofcom's own stated best practice principles), leaving us concerned as to whether due process has been properly undertaken. Also, Ofcom has not assessed whether this option is justifiable and proportionate compared to continuation of its existing regulatory decisions. Ofcom has also not considered the potential costs in terms of increasing investor risks, if the regulatory contract is made less reliable through decisions like these.

Ofcom must be appropriately biased against intervention. It should intervene only when doing so allows to deliver net benefits compared to not intervening. Establishing net benefits requires estimating the scale of the purported problem and establishing how effective differing interventions will be in addressing this problem.

Even if Ofcom believes there is merit in converting Three's licences such that it pays for its spectrum by means of a lump-sum, it must evaluate the differing approaches that can be followed to determine such lump-sum in a new and transparent consultation. In the limited time available, we identified five different approaches to determining a lump sum (discussed below) but there may be more. We hope our thinking supports Ofcom in conducting the necessary evaluation.

Impact on citizens must be part of a cost-benefit analysis

Spectrum fees represent a relevant revenue stream to HM Treasury (HMT). ALFs amount over £300m per annum and spectrum auctions in the 3.4-3.8 GHz band raised more than £1.5bn.

Ofcom should have considered the impact on HMT under its proposal compared to when Three would pay 3.x GHz ALFs in line with existing regulatory decisions. This impact can be established by comparing the net present values for HMT under the proposal vs in the status quo (ie, under existing regulatory decisions). The established £571m lump-sum payment (in 2022 prices) is the proposal's net present value. By discounting projected ALFs at the HMT's cost of borrowing⁵ we determined the net present value of the status quo at £986m (in 2022 prices). This tells us that HMT would experience a £415m net present value loss when the proposal is implemented, a very significant impact indeed.

HMT represents UK tax payers. Its deteriorating position means that UK tax payers must pay more tax or that government debt increases at the expense of future UK tax payers. We expect Ofcom to have regard to impact on HMT when its decisions may come at a significant cost to HMT. More specifically, Ofcom should account for impact on HMT as part of the cost-benefit analysis of a new consultation. It is incumbent on Ofcom to demonstrate that its decisions deliver net benefits to society.

Ofcom's proposal means HMT loses the 'premium' inherent when paid through ALFs

ALFs are set by multiplying market value per MHz (based on relevant auction prices and for 20-year period) with the annualisation rate and then adjusting for CPI. The annualisation rate used to determine 3.x GHz ALFs is 5.75%. This rate can be compared with the 5% of market value per annum that an MNO would pay if it were to pay total market value through even annual instalments over the 20-year period. By dividing 5.75% by 5% we determine that ALFs involve a 15% 'premium' over market value. This is one part of the money that HMT foregoes (£104m) when Three is allowed to pay a lump-sum instead of through ALFs.⁶

There are sound reasons for the 'premium' and determination of the annualisation rate has been subject to regulatory review. Our point is that receiving lump-sum based on market value means that HMT foregoes the 15% 'premium' it would receive when paid through ALFs set on the same market value.

⁵ We used the 20-year Government yield of 2.19%.

⁶ We determined the £104m figure by applying 15% to the £694m gross lump-sum that Ofcom established for the 3.4 and 3.6 GHz spectrum combined.

The 'premium' originates from application of the annualisation rate to the spectrum's established market value which is done to make spectrum holding MNOs indifferent between making a one-off payment versus paying for spectrum on an ongoing basis. As such, the 'premium' encapsulates the difference in risk profile between MNOs acquiring spectrum at a fixed price compared to when they pay annual fees. The position (and thus risk profile) of MNOs differing across these scenarios is thus what gives rise to the 'premium'.

Ofcom set an expectation that it would be cautious about revisiting 3.x ALFs?

The proposal would involve a major change in how (much) Three pays for its ALF-bearing 3.x GHz spectrum. A key feature is that the lump-sum Three would pay for 3.6 GHz spectrum is based on the 3.6 GHz auction price and not on the 3.4 GHz auction price used to set current 3.x GHz ALFs (for both 3.4 and 3.6 GHz spectrum). If Ofcom considers that the market value of 3.6 GHz spectrum should no longer be based on the 3.4 GHz auction price in the context of spectrum pricing, it could have conducted a review of 3.x GHz ALFs to evaluate its options as opposed to leaving such change undiscussed in its proposal.

This procedure is followed in all other ALF pricing decisions, Ofcom presents no justification for diverging from well understood regulatory practice.

What is also relevant is what both Ofcom and Three said in the 3.x GHz ALF review about the conditions under which a review of these ALFs should be conducted (**bold** added for emphasis).

Ofcom said

*[Ofcom's 2018 Consultation. Referred to in paragraph 5.13 of Ofcom's 2019 Statement] We said that the fees in the draft regulations would remain applicable until we amend or revoke them. We considered that there was benefit in a period of certainty for licensees and **therefore proposed not to review ALFs in the five years after implementation save in very exceptional circumstances. We noted that this meant we did not intend to review the level of ALFs after the forthcoming auction of 700 MHz and 3.6-3.8 GHz spectrum.***

*[Paragraph 5.17 of Ofcom's 2019 Statement] **The fees we are setting now will as a matter of law apply until we amend or revoke them. As set out in our December 2018 consultation, we also consider that there is benefit for licensees in a period of certainty on fees.** This remains our general position.*

*[Paragraph 5.19 of Ofcom's 2019 Statement] We always retain the ability to revise fees in the future in appropriate circumstances, including after the forthcoming auction of 700 MHz and 3.6-3.8 GHz spectrum, if we consider there is evidence to suggest a revision to fees is warranted, i.e. **if there is strong evidence***

that a material misalignment has arisen between the level of the fees and the value of the spectrum.

Ofcom indicated it was not minded reviewing 3.x GHz ALFs in the first five years following their implementation (ie, 2019-2024) save in exceptional circumstances and that longer-term it would only revisit 3.x GHz ALFs if there was strong evidence of a material misalignment between the level of fees and the value of the spectrum.

Ofcom's proposal is inconsistent with how it sets existing 3.x GHz ALFs and with the caution it expressed for revising 3.x GHz ALFs in the future. It now proposes major changes in what Three pays for its ALF-bearing 3.x GHz spectrum yet without having demonstrated misalignment between the level of fees and the value of the spectrum. As part of a new consultation, Ofcom must ensure that it evaluates market value determination for the purpose of spectrum pricing and justifies any departure from regulatory precedent.

Three said

*[Three response to Ofcom's 2018 Consultation. Referred to in paragraph 5.14 of Ofcom's 2019] Three agreed that Ofcom should not revisit ALFs after the award of 700 MHz and 3.6-3.8 GHz spectrum. It said the long-term value of 3.4 GHz and 3.6 GHz spectrum is likely to be the same. **It argued that using results from the upcoming 700 MHz and 3.6-3.8 GHz auction to set the level of UKB's ALFs would distort its bidding incentives because it could increase its own ALF by bidding in the auction, while giving rivals incentives to bid beyond their valuations to raise UKB's ALF.***

Three advised that Ofcom should not revisit 3.x ALFs following the 3.6 GHz auction as i) long-term valuation of 3.4 and 3.6 GHz spectrum would likely be the same and ii) the prospect of a review could distort bidding in the (then upcoming) 3.6 GHz auction. We agree with Three's concern that bidding in an upcoming auction can be distorted when that auction's outcome is then used to determine the fees that one MNO pays on other spectrum it holds (and this is anticipated by bidding MNOs). It is highly plausible that the 3.6 GHz auction was affected by considerations that Three and other MNOs had in relation to the ALFs that Three would pay on its 3.x GHz ALFs and how these would depend on this auction's outcome.

Ofcom did not pick up on or explain aspects of what its proposal means in practice

The way in which Ofcom describes its proposal ignores the implications that originate from the backward-looking nature of its approach.

- 1) Ofcom proposes to determine gross lump-sums by establishing market value for a 20-year period starting from when the 3.4 and 3.6 GHz auctions took place. The market value from these auctions is applied retrospectively from April 2018 (3.4 GHz)

and April 2021 (3.6 GHz) onward even though no MNO could have anticipated that Three would have to pay the amounts based on this approach for this spectrum over that period.

- 2) Ofcom's proposal assumes that Three must pay for 3.4 GHz spectrum from April 2018 to July 2019 in the same way as in later years even though it was not liable to pay material ALFs in this period. In doing so Ofcom thus disregards the regulation that determined payment for the licence of this spectrum at that time.
- 3) Ofcom proposes to deduct ALFs paid by Three up to today and to deduct these payments from gross lump-sums to determine its proposal for what Three must pay for the licence change to take effect. But the basis on which gross lump-sums vs ALFs paid are set differs on two key aspects: i) the underlying market value (3.4 GHz auction price for 3.6 GHz ALFs vs 3.6 GHz auction price for 3.6 GHz gross lump-sum), and ii) the 15% 'premium' inherent on ALFs compared to pro-rata gross lump-sums. The joint impact of i) and ii) is that Three paid substantially more on ALFs over the past year(s) than what it would have paid for this period when lump-sum is evenly distributed over 20 years. Deducting ALFs from gross lump-sums grants Three a considerable discount to compensate for it having paid ALFs on a different basis over the past year(s) even though its past payments followed from regulatory decisions that applied at that time.

We have determined the joint impact of the 'backward-looking' nature of Ofcom's proposal by applying Ofcom's proposed approach on a forward-looking basis and then comparing the lump-sum for this approach against Ofcom's £571m lump-sum. We find that the lump-sum would be £37m greater when applying Ofcom's approach on a forward-looking basis.⁷

The design of an intervention must be problem-based

Ofcom has not provided clarity on what the proposed licence conversion is brought in to address. Therefore we have had to evaluate all the potential meanings of a "barrier to trading"⁸:

- a specific issue to do with defragmentation of the 3.4-3.8 GHz band or
- an issue to do with spectrum trading more generally:
 - either the negative impact of ALFs *per se*; or

⁷ This amount accounts for impacts identified under both 2) and 3) above.

⁸ See paragraph 3.14 of Ofcom's Consultation.

- the level of ALFs being too high and justifying the application of a discount to spectrum pricing to remove this barrier to trading.

These specific problems lend themselves to different solutions, which may not be the conversion of ALFs to minimum fixed term licences through payment of a lump-sum.

There is an easy route for Ofcom to achieve defragmentation in the 3.4-3.8 GHz band

The facility existed for Three to enter the assignment stage of the 3.4 GHz auction with its pre-existing 40 MHz spectrum holding. Doing so would lead to re-assignment of this spectrum to a position in the band determined by this assignment stage. Three would have been issued a new licence in relation to the specific position of its spectrum and with ALFs attached to these new frequencies. It follows that to write the regulations to undertake the 3.4 GHz auction in this way, primary legislation already allows Ofcom to make spectrum fees fungible between specific frequency licences.

If primary legislation did not facilitate that, the presence of such facility would not have been lawful in the regulations of the 3.4 GHz auction. We thus see no legal reason why, in the context of a trade to just defragment the band, given the wide margin of discretion afforded to Ofcom under the Wireless Telegraphy Act 2006, Ofcom could not facilitate this trade by re-issuing new positions to the spectrum held by Three but with existing ALFs still attached. Using Ofcom's existing powers to make ALFs fungible between frequencies would avoid the major, detrimental distortions that we discussed above whilst providing the conditions for trading to reduce fragmentation within the 3.4-3.8 GHz band.

Ofcom should consider this simple solution in a new consultation. Where it regards that this solution does not address the problem at hand, it must explain why and demonstrate any difference in effectiveness with approaches it prefers.

Finally, we note that this approach would allow Ofcom to deal with a real problem presented in the form of a spectrum trade, rather than a hypothetical problem based on the assertions of two MNOs. At the moment, Ofcom proposes to reprice Three's spectrum, with no certainty that any band defragmentation will be forthcoming.

If ALFs are a barrier to trading spectrum in the 3.4-3.8 GHz band then this must be true in other bands where ALFs are payable

Alternatively, Ofcom's justifications for its proposed intervention could go beyond the need for defragmentation of the 3.4-3.8 GHz band. It might either consider that the intrinsic nature of ALFs means they act as a barrier to trading or that the level of ALFs has a detrimental impact on the incentives or ability of MNOs to trade spectrum.

In case of the former, if 3.x GHz ALFs act as a barrier to trade because of their nature, then this must be similarly true for other ALF-bearing spectrum. It follows that ALFs should be abolished in their current form and this spectrum should be returned to the previous AIP form of pricing, like other forms of spectrum that is tradable and has the same licence terms as Three's 3.x GHz spectrum.

In case of the latter, Ofcom could be of the view that the level of 3.x ALFs give rise to barriers to trade and that addressing these barriers both requires and justifies giving Three the opportunity to make a discounted lump-sum payment in lieu of paying ALFs in line with existing regulatory decisions. In this context, the level of ALFs gives rise to the problem and granting a discount to Three is deemed the effective way of unlocking opportunities for spectrum trading. If true for 3.x GHz ALF-bearing spectrum, then this must also be true for ALFs paid in other spectrum bands.

It is not unique for the 3.4-3.8 GHz band to involve potential spectrum trades where some spectrum was acquired at a fixed price whilst other spectrum requires ongoing payment of ALFs. This also applies to potential trades involving 700/800 and 900 MHz, where fixed price was paid for the former spectrum yet ALFs are payable for the latter spectrum.

If Ofcom is to argue that the economic benefits associated with removal of barriers arising from the too high level of 3.x ALFs justifies the proposed licence change and if it regards the inherent discount as an acceptable cost of implementing this change (which we infer from Ofcom's proposal), then it must want to intervene similarly in other bands to unlock the efficiency gains that trading can deliver. The natural way of doing this would be the application of a discount with the same magnitude that Three received to ALFs payable in other bands.

We reviewed the repricing proposed by Ofcom finding that the lump-sum proposed by Ofcom grants Three a £156m net present value discount (or 21%) compared to the ALFs that Three would have otherwise paid going forwards. If the same discount were applied to VMO2's ALF bearing spectrum this would lead to a £14m per annum reduction on our £64m annual bill. Like Three, we would be minded to accept such a discount.

Ofcom must conduct a thorough evaluation of options available to determining any lump-sum paid to convert licence terms

If Ofcom considers that a licence change implemented through a lump-sum payment is preferred (which it has not established to date), it has a range of options to calculate the lump-sum. As shown below, the options we discuss vary in the amount Three would pay –

and HMT would receive – but likely also in performance against removal of barriers to trade, costs, and regulatory certainty, amongst others. It is incumbent of Ofcom to evaluate these (and other) options if it decides that the lump-sum conversion approach is warranted.

Forward-looking options to determine the lump-sum

Options that determine the net lump-sum on a forward-looking basis must be considered as that is how regulation is commonly designed and applied. We identify two such options:

- 1) determination in line with existing regulatory decisions (ie, 3.x GHz ALFs), and;
- 2) determination that deviates from existing regulatory decisions yet justifies the nature and form of the deviation.

Either option would set the lump-sum as the net present value of the discounted payments that Three would make for its ALF-bearing 3.x GHz spectrum absent the proposed licence change. Setting the lump-sum at such level means Three would be no worse off when making the one-off payment compared to under existing or deviation from existing regulatory decisions.

1) Forward-looking determination in line with existing regulatory decisions

The seemingly natural approach would have been to determine Three's net present value when it would have paid ALFs in line with the 3.x GHz ALF Statement for a reasonable discount rate and making inflation projections based on credible forecasts to implement CPI adjustments.⁹

Following this approach, we determine Three's net present value under existing regulatory decisions at £727m. This figure means that Ofcom's proposal would effectively grant Three a £156m discount in 2022 prices compared to what it could expect under existing regulatory decisions.

Setting the lump-sum at £727m would not make Three worse off compared to the position it could have reasonably expected to be in. In net present value terms Three would be indifferent between paying a lump-sum at this level and continued ALF payments in line with the 3.x ALF Statement. Additionally, we note that Three (subject to barriers to trade currently being present) would derive substantial benefits from its purportedly increased ability to trade as that would allow it to improve the efficiency of its spectrum holdings and/or to monetise its trading partner being able to do so.

⁹ We use the 5.8% that Ofcom most recently determined as the cost of capital of an MNO in its 2100 MHz ALF Statement as the discount rate. For inflation projections, we use OBR forecasts for the next three years and assume inflation at the Bank of England's 2% target level for later years.

Whilst a licence change should not make Three worse off, we see no legal basis for Ofcom offering Three a substantial discount compared to what it would have paid under existing regulatory decisions. We are surprised Ofcom has not considered using this approach to set the lump-sum, or where it has, why it has not transparently consulted on its proposal giving Three such substantial discount. If Ofcom believes that the societal benefits of its proposal warrant such discount (and cannot otherwise be delivered) it should have demonstrated that such benefits outweigh the proposal's costs.

2) Forward-looking determination that deviates from existing regulatory decisions

Alternatively, if Ofcom believes that the existing regulatory decisions setting 3.x GHz ALFs may no longer be justified, it could evaluate which adjustments to these decisions are required and then determine the lump-sum as a function of projected ALFs set on that basis. For instance, if Ofcom considers that 3.6 GHz ALFs must not be based solely on the 3.4 GHz auction price, it could propose adjustments to how 3.6 GHz ALFs are set and then use projected ALFs consistent with these adjustments to determine the net present value of this scenario. Again, the lump-sum could be set at the net present value for which Three would be no worse off compared to the 3.x GHz ALFs it would have to pay under this alternative forward-looking determination.

Whilst this would involve a deviation from existing regulatory decisions, it would require Ofcom to be transparent and to justify why a change in its approach is warranted and which form this could take. It would have to demonstrate that a material misalignment has arisen between the level of fees and the market value of 3.x GHz spectrum.

Backward-looking approaches to determine the lump-sum

It is not the case as Ofcom seems to purport that there is only one backward-looking approach to determine Three's one-off payment. Such an approach could involve either bringing holders of 3.x GHz spectrum to the same position and licence terms as at a specific point in the past or could use evidence relevant to market value from historic events by determining the lump-sum in a more informative manner.

We discuss three such approaches, there may be more:

- 1) Ofcom's proposal.
- 2) Ofcom's proposal yet with market value of spectrum in the 3.4-3.8 GHz band determined solely on the 3.4 GHz auction price (in line with 3.6 GHz ALF Statement).
- 3) Based on prices derived from the relevant counterfactual 3.4 GHz auction which includes Three's 3.4 GHz spectrum that is being repriced here.

1) Ofcom's proposal

The distinguishing feature of Ofcom's proposal is to determine the market value of 3.4 GHz (3.6 GHz) spectrum on the 3.4 GHz (3.6 GHz) auction price. This concerns a departure from what Ofcom decided in its 3.x GHz ALF Statement. Using this approach Ofcom determined the lump-sum at £571m.

Ofcom has not explained why it is appropriate to determine market value (gross lump-sum) as per its proposal. It might be that Ofcom considers that market value of spectrum in a particular narrow band must be based on that band's auction price. Instead of positing this determination, Ofcom should have evaluated a range of options for determining gross lump-sums (including but not limited to its proposal) and compare these options against each other.

Smuggling this change through, as Ofcom does, in the calculation of its proposed lump sum does not meet the same evidential standard that has been in place for the pricing of all other ALF spectrum. This consultation is therefore deficient and cannot form the basis for unwinding the decision in the 3.x GHz ALF Statement.

2) Ofcom's proposal yet with market value of spectrum in the 3.4-3.8 GHz band determined solely on the 3.4 GHz auction price

An economic regulator must have close regard to regulatory precedent. It will want to remain aligned with such precedent where possible and only depart from it where it can offer a strong and transparent justification. Considering this, the natural alternative to its proposal would have been for Ofcom to determine the market value of spectrum in the 3.4-3.8 GHz band solely on the 3.4 GHz auction price. After all, that is how it set current 3.x GHz ALFs in 2019, and which it indicated it would only revisit when there is strong evidence of misalignment between the fees and the market value of spectrum.

Applying market value in line with the 3.x GHz ALF Statement yet otherwise following Ofcom's proposal, we determine the net lump-sum of this approach at £861m. This means that Ofcom's proposal sets the lump-sum £290m lower compared to an approach that would have maintained its regulatory precedent in determining market value yet otherwise applied its backward-looking approach.

It is disappointing that Ofcom proposes to depart from its precedent without having regarded this alternative. Especially, since it would remove purported barriers to trade, equalise non-fee related licence terms, and align with Ofcom's 3.x GHz ALF decisions. Furthermore, it would greatly reduce the loss in net present value that HMT would experience under

Ofcom's proposal whilst Three would be no worse off compared to how 3.x GHz ALFs are currently set. Whilst there may be justification to offer Three a payment lower than £861m, it would have been incumbent on Ofcom to explain why offering a discount on what Three could reasonably have expected to pay is needed to deliver its objective.

3) *Based on prices derived from the relevant counterfactual 3.4 GHz auction*

To adjust for the difference in the nature of the two spectrum types Ofcom must rewrite history in a symmetric way to allow "*all holders of Spectrum Access licences in the 3.4 GHz and 3.6 GHz bands [to] achieve parity*". This should apply not only to Three in relation to its 3.x GHz ALF-bearing spectrum but also to spectrum acquired by other MNOs in the 3.x GHz auctions. Ofcom's proposal selectively seeks to achieve the former but ignored the latter.

The correct assessment, taking due account of the risks of purchasing the same asset type at that time, must consider the price that MNOs would have paid for their spectrum in the counterfactual auction in which the full 190 MHz was sold and that resulted in the same allocation of spectrum as after the actual 3.4 GHz auction. In this counterfactual, Three and the other MNOs would have acquired the same holdings of 3.4 GHz spectrum (as they ended up with) on precisely the same licence terms.

We consider that this counterfactual auction can be proxied from bidding in the 3.4 GHz auction and can be used to design the licence change to bring all MNOs back to the same position at the same point in time. When accompanied with retrospective adjustments to auction prices, this would allow applying the same licence terms to 3.4 GHz spectrum held by all MNOs in a way that does not unduly discriminate for or against individual MNOs because of their past or present spectrum position.

There were 30 lots of 5 MHz in the 3.4 GHz auction. Adding Three's pre-existing 40 MHz would have increased total supply to 190 MHz (38 lots). Each lot in that band required 1 point of bidding eligibility. Similarly, the 4 lots of 2.3 GHz in the same combinatorial auction required 16 eligibility points. This would have raised market clearing eligibility to 54 points in the relevant counterfactual, compared to 46 points in the actual auction.

At the end of Round 53 of that auction (when bidding on 2.3 GHz spectrum had stopped), total eligibility points available for use in the next round were 58. In Round 54, total eligibility dropped to 50 points, with Three reducing its demand by 8 points, or 40 MHz of spectrum. The counterfactual auction would have closed at that point. Therefore, the price that Three would have paid for an additional 40 MHz of spectrum likely sits between the round price in Rounds 53 and 54. The average of the two round prices is £33.5m per 5MHz lot.

The price in this counterfactual would have been 11% below the auction price that Ofcom used to determine the lump-sum for 3.4 GHz spectrum (ie, £37.8m per MHz). It means that the winning bidders would have paid substantially less for their 3.4 GHz lots in the event that Three had surrendered its pre-existing 40 MHz before the auction and the auction would have been conducted on that basis, delivering the licences of all winners on the same terms.

The price of £33.5m per 5 MHz is the most appropriate price for determining the market value of 3.4 GHz spectrum as it reflects how the auction would have run if the full 190 MHz had been sold at the same licence terms. This price could be applied retrospectively both to Three (as holder of ALF-bearing 3.x GHz spectrum and purchaser of 20 MHz in the auction) and to MNOs that acquired all their spectrum in this band through the auction.

- The gross lump-sum used to determine the lump-sum payable by Three would be £299m rather than the £336m (in 2022 prices) as per Ofcom's assessment. This would reduce the lump-sum that Three is proposed to pay for the licence change.
- Applying the identical 11% rebate would reduce the amounts that MNOs should have paid for the 3.4 GHz spectrum they acquired. The size of any retrospective adjustment of auction payments to MNOs due would vary by the amount of spectrum acquired by an individual MNO. Applied to VMO2, we estimate this rebate at £35m (in 2018 prices), 11% of the £317m that TUK paid for the 40 MHz it acquired.

Initial assessment of approaches

Though limited in terms of options considered and assessment, our discussion above can serve as the start of the thorough evaluation of lump-sum determinations that Ofcom must conduct if it were to decide that a conversion to lump-sum payment is the most appropriate approach to address the purported problem.

Regulatory precedent is an important feature in regulated markets. It gives credibility to the regulator and the decisions it takes, thereby allowing companies to form expectations on the regulation that will likely apply to them going forward. Companies will expect the regulator to only depart from the precedent when it can justify its departure. This does not mean that regulator should never depart from past regulatory decisions. But it does put the burden on a regulator to justify why a departure is necessary and will perform better against its objective compared to the approach inherent in the regulatory precedent.

Given the value of regulatory precedent, we consider that the default for determining the lump-sum involves using the 3.4 GHz auction price to set the market value of 3.4 and 3.6 GHz spectrum. This is consistent with how 3.x ALFs were set to date and with how Three and other MNOs could have reasonably expected the 3.x GHz ALF-bearing spectrum to be

priced. It would ensure that Three is no worse off, compared to the situation under existing regulatory decisions. By being consistent with past and present expectations, this approach would greatly limit the distortions that Ofcom's proposal would give rise to. It would leave the option open of applying this approach on either a forward- or backward-looking basis (along the lines we discussed above). This is something we recommend Ofcom reviews as part of a new consultation.

Conclusions

Considering the selective rewriting of history inherent in its proposal and the major flaws in the process it followed, we call on Ofcom to undertake a new consultation which is properly transparent about the purported problem. This will allow it to proportionately assess a range of available solutions. Amongst other things, that consultation must comprise of a more robust assessment of the nature and scale of the problem it wants to mitigate, a cost-benefit analysis of the range of options that could potentially address this problem, and a robust evaluation of the approaches available to determine Three's lump-sum payment (if that is again where Ofcom lands).

Critically, we expect Ofcom to reflect on the selective rewriting of history inherent in its proposal as that is not something we expect a regulator to do lightly. It risks damaging the trust that regulated companies have in their regulator, which through the medium of increased uncertainty can have a chilling effect on investment and competition in mobile markets. If Ofcom were to go for its proposed approach it must rewrite history for other operators as well to avoid the licence change discriminating between how differing spectrum holders are affected.

It is of paramount importance that Ofcom provides clarity on the nature of the problem it wants to address in a new consultation. After all, the appropriate intervention will have to be problem-based.

- If Ofcom seeks to improve 3.x GHz spectrum defragmentation then this can be accomplished in a way that does not incur legal risk for Ofcom and does not require this spectrum to be repriced.
- If instead the purported problem originates from the level of ALFs, it seems to us that Ofcom would want to apply a similar discount as the one inherent in its proposal for Three to ALFs that MNOs pay in other bands. An overall reduction in ALFs could unlock opportunities for efficient swaps or sales of spectrum. Application of the substantial discount that Three receives to all

ALFs would ensure that history is rewritten in equal fashion for all spectrum holders, thereby removing the risks inherent in the current proposal.

If Ofcom continues to hold the view that a lump-sum is the best way to implement the licence change, it must evaluate the various ways in which the lump-sum can be determined. As a starting point, we see no reason for Ofcom to choose a determination that departs from regulatory precedent. If Ofcom proposes to depart from regulatory precedent, it must provide objective justification as to why this is appropriate and proportionate to meet its objective.